

KLONDYKE



TRUTH AND FACTS

OF THE

NEW EL DORADO

BY

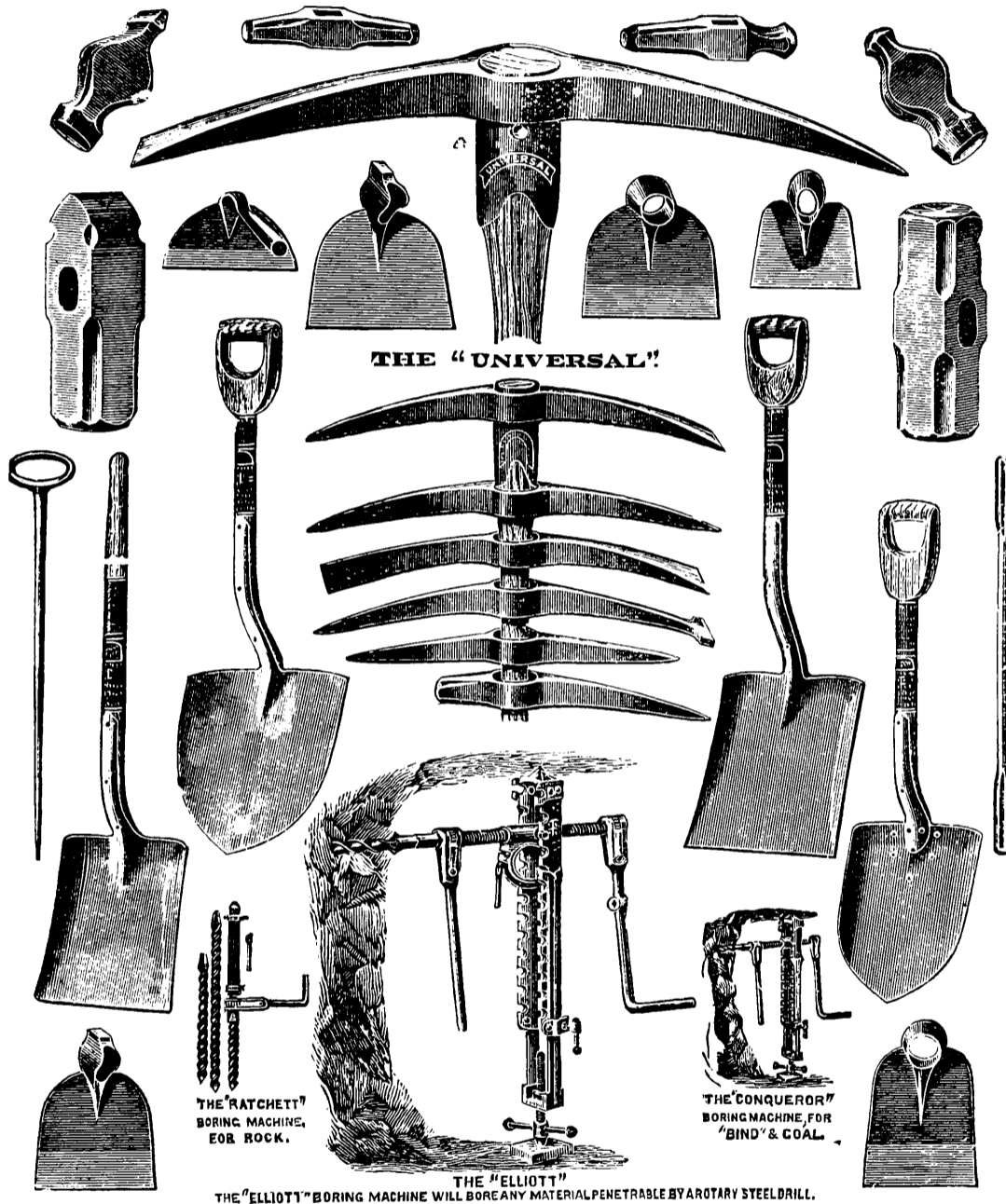
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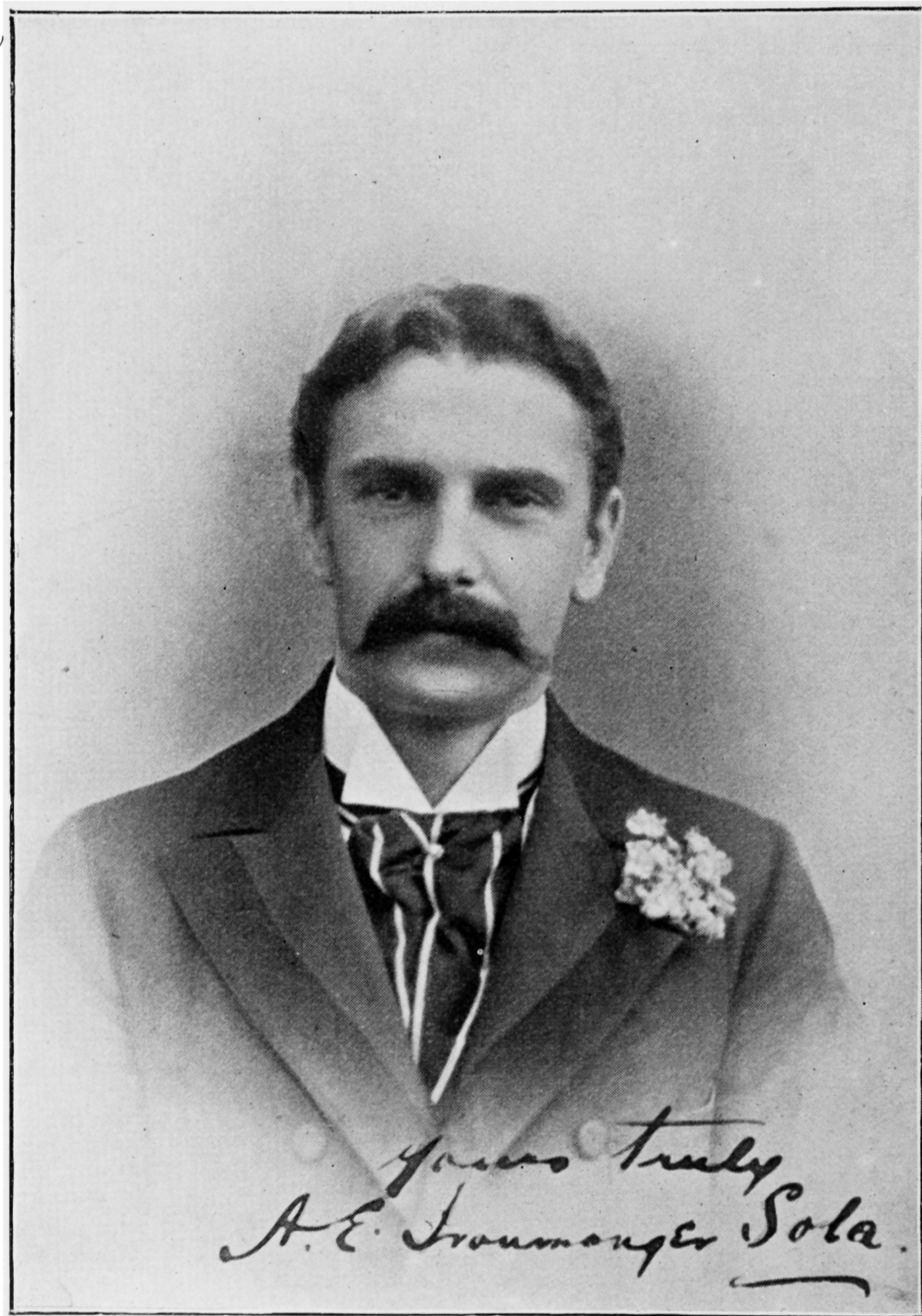


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Yours truly
A. E. Troumanger Sola.

KLONDYKE:
TRUTH AND FACTS
OF THE
NEW EL DORADO

BY
A. E. IRONMONGER SOLA.

LONDON:
THE MINING AND GEOGRAPHICAL INSTITUTE,
BROAD STREET HOUSE, E.C.,
PUBLISHERS.

This Book I dedicate to my dear FATHER AND MOTHER.

A. E. IRONMONGER SOLA.

INTRODUCTION.

It is deplorable that so much unreliable information should have appeared in the newspapers of the world regarding the new gold fields of Canadian North-West and Alaska, and it is with the object of putting before the world the truth of this most wonderful country that I have written this book. Having recently returned from the Klondyke, after spending nearly four years in the country, I find myself daily deluged with letters from all sorts and conditions of men anxious to get particulars of the new *El Dorado* which is now the magnet for many minds.

During my four years' stay in that country I have done almost everything that a man could do, carrying provisions all over that region without making enough to pay my own expenses. There have been men in that country for twenty-three years looking for rich diggings and until last fall they did not succeed in finding them. Naturally people in this country think that what one man can do another can, but if these inexperienced enthusiastic gold seekers rush into the country, go into the mountains and endure all the hardships of the climate, and strike rich creeks in a short time, doing in a few months what it has taken us years to do, it will, in my opinion, be nothing short of a miracle.

In the Klondyke region, you must remember, every foot of ground has been taken up by this time. When I left in June last we had sufficient men in that country to properly work those diggings. The multitudes that go there now will have to strike out for new places. I do not want to discourage men, but I do say that it would be foolish for a man to give up all he has on a chance, to leave a good position here and risk all his money there in a climate and under conditions that require a strong constitution and untiring perseverance. A man with a little money to spare and nothing to lose here might do well in going to Klondyke, for I believe it will turn out to be the richest region in the *world of gold*. I wish to acknowledge my indebtedness to Mr. WILLIAM OGILVIE, Government Surveyor, portions of whose report is given in the first part of the book. As far as I can I have given answers to almost any question that could be asked regarding the new gold fields and hope my own experiences will be found useful to many who think of trying their fortunes in the great North-West.

A. E. IRONMONGER SOLA.

LONDON, *December 1st*, 1897.

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MAP OF THE LAKES.

ROUTE MAP SHOWING ALASKA.

APPROXIMATE DISTANCES TO CUDAHY.

VIA ST. MICHAEL.

	Miles.
San Francisco to Dutch Harbour	2,400
Seattle or Victoria to Dutch Harbour...	2,000
Dutch Harbour to St Michael...	750
St. Michael to Cudahy	1,600

VIA DYEA PASS.

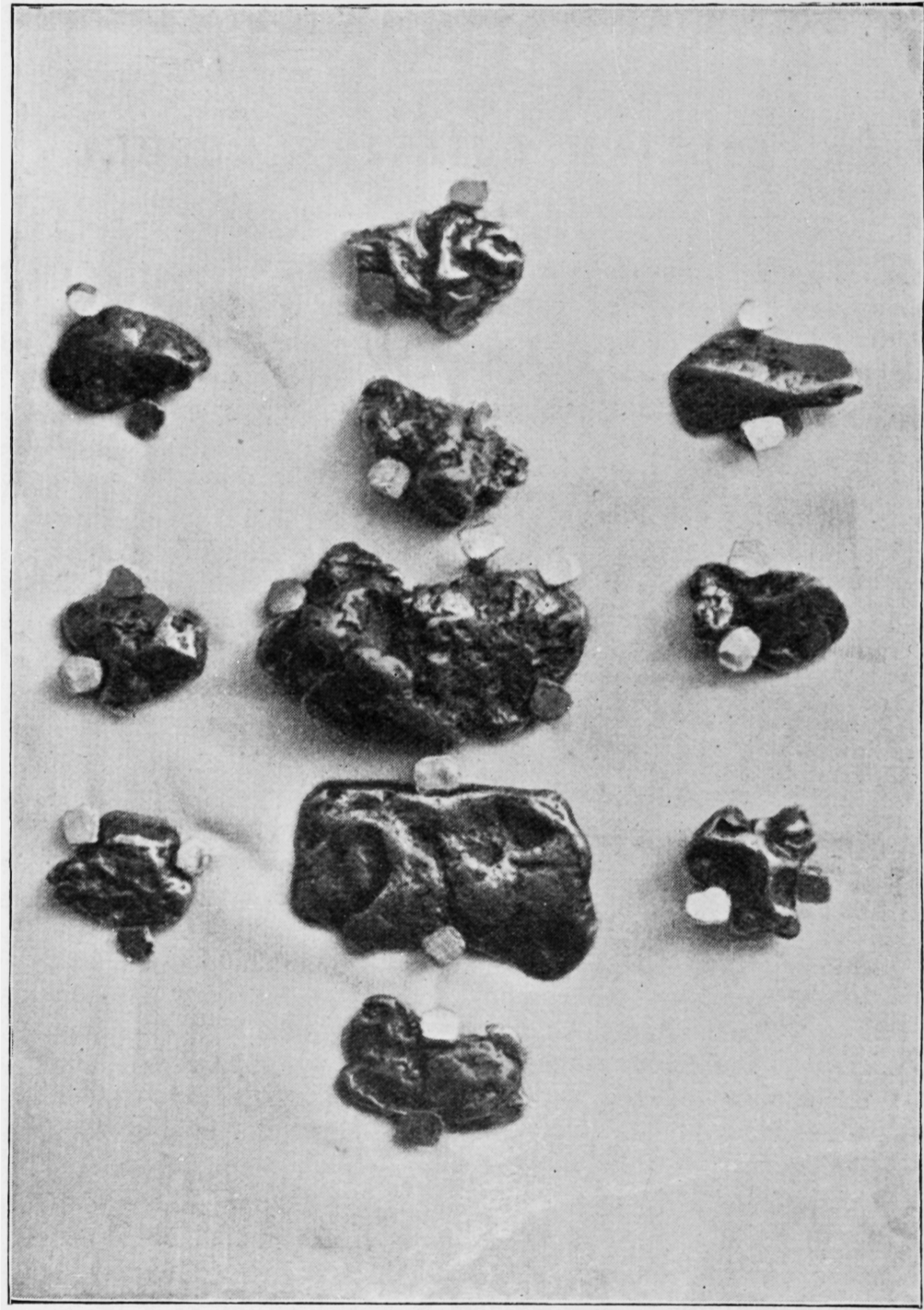
Victoria to Dyea	1,000
Dyea to Cudahy	650

VIA STIKINE RIVER.

Victoria to Wrangell	750
Wrangell to Telegraph Creek	150
Telegraph Creek to Teslin Lake	150
Teslin Lake to Cudahy	650

DISTANCES FROM HEAD OF DYEA INLET.

Head of canoe navigation, Dyea River	5·90
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Foot of Lake Lindeman	27·49
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Head of Marsh Lake	78·15
Foot of Marsh Lake	97·21
Head of Cañon	122·94
Foot of Cañon	123·56
Head of White Horse Rapids	124·95
Foot of White Horse Rapids	125·33
Tahkeena River	139·92
Head of Lake Labarge	153·07
Foot of Lake Labarge	184·22
Teslintoo River	215·88
Big Salmon River	249·33
Little Salmon River	285·54
Five Finger Rapids	344·83
Pelly River	403·29
White River	499·11
Stewart River	508·91
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Dawson City	575·70
Fort Reliance	582·20
Forty Mile River... ..	627·08
Boundary Line	667·43



A few Nuggets from Bonanza and Last Chance Creeks,
Value \$95.00. Actual Size.

THE YUKON DISTRICT.

HISTORICAL SKETCH.

From WILLIAM OGILVIE'S REPORT.

The Yukon District comprises, speaking generally, that part of the Northwest Territories lying west of the water shed of the Mackenzie River; most of it is drained by the Yukon River and its tributaries. It covers a distance of about 650 miles along the river from the coast range of mountains.

The first people from civilization to enter the country were the traders for the Hudson's Bay Company. In the year 1840 Mr. Campbell was commissioned by Sir George Simpson to explore the Upper Liard and to cross the height-of-land in search of any river flowing to the westward. After ascending the river to its head waters he struck across to the head of the Pelly River, thence down the Pelly to the confluence of the Lewes, at which point he turned back, his men having become discouraged by the stories of the Wood Indians encamped there, who represented that the lower portion of the river was inhabited by a large tribe of cannibals. In 1847 Fort Yukon was established at the mouth of the Porcupine by Mr. A. H. Murray, another member of the Hudson's Bay Company.

In 1848 Campbell established Fort Selkirk at the confluence of the Pelly and Lewes Rivers; it was plundered and destroyed in 1852 by the Coast Indians, and only the ruins now exist of what was at one time the most important post of Hudson's Bay Company to the west of the Rocky Mountains in the far north. In 1869 the Hudson's Bay Company's officer was expelled from Fort Yukon by the United States Government, they having ascertained by astronomical observations that the post was not located in British territory. The officer thereupon ascended the Porcupine to a point which was supposed to be within British jurisdiction, where he established Rampart House; but in 1890 Mr. J. H. Turner of the United States Coast Survey found it to be 20 miles within the lines of the United States. Consequently in 1891 the post was moved 20 miles further up the river to be within British territory.

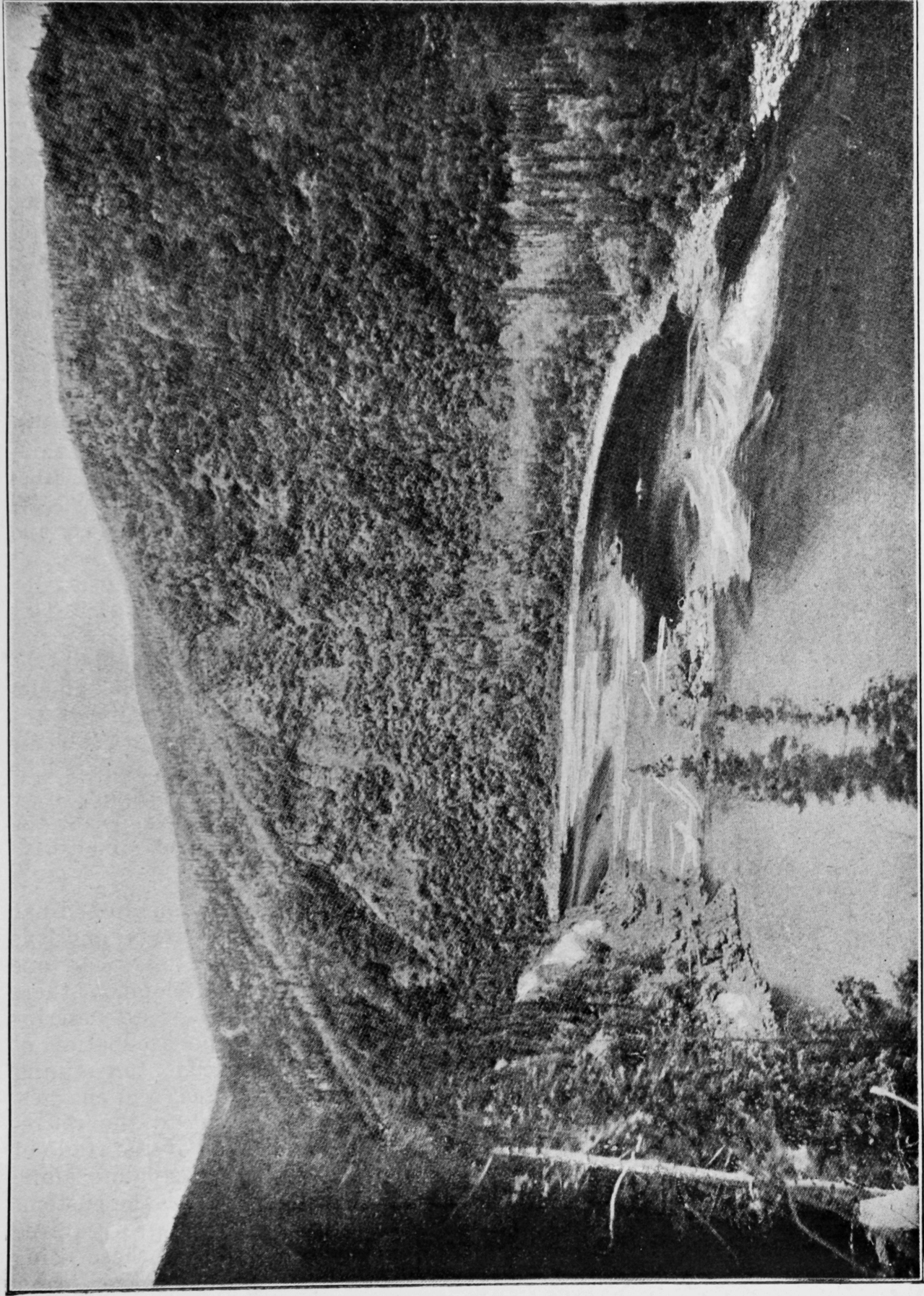
The next people to enter the country for trading purposes were Messrs. Harper and McQuestion. They have been trading in the country since 1873 and have occupied numerous posts all along the river, the greater number of which have been abandoned. Mr. Harper is now located as a trader at Fort Selkirk, and Mr. McQuestion is in the employ of the Alaska Commercial Company at Circle City, which is the distributing point for the vast regions surrounding Birch Creek, Alaska. In 1882 a number of miners entered the Yukon country by the Dyea Pass; it is still the only route used to any extent by the miners, and is shorter than the other passes though not the lowest. In 1883 Lieutenant Schwatka crossed this same pass and descended the Lewes and Yukon Rivers to the ocean.

The history of the Yukon District within recent years will be best described by the following extract from the annual report of the Deputy of the Minister of the Interior for the year 1895 :—

“ In the year 1887 the Hon. Thomas White, then Minister of the Interior, authorized the organization of an expedition having for its object the exploration of that region of the North-west Territories of Canada which is drained by the Yukon River. The work was entrusted to Dr. George M. Dawson, now the Director of the Geological Survey, and Mr. Wm. Ogilvie, the well-known explorer and surveyor. Dr. Dawson devoted the whole of that season, and Mr. Ogilvie a period covering nearly two years, to obtaining geological, topographical, and general information, chiefly respecting the tract of country lying adjacent to the 141st meridian of longitude, which by the Treaty of St. Petersburg is designated as the boundary line from the neighborhood of Mount St. Elias to the Arctic Ocean between Alaska and the adjoining possessions of the British Crown which now form part of the North-west Territories of Canada.

“ The explorers found that in proximity to the boundary line there existed extensive and valuable placer gold mines, in which even then as many as three hundred miners were at work. Mr. Ogilvie determined, by a series of lunar observations, the point at which the Yukon River is intersected by the 141st meridian, and marked the same on the ground. He also determined and marked the point at which the western affluent of the Yukon, known as Forty Mile Creek, is crossed by the same meridian line, that point being situated at a distance of about twenty-three miles from the mouth of the creek. This survey proved that the place which had been selected as the most convenient, owing to the physical conformation of the region, from which to distribute the supplies imported for the various mining camps, and from which to conduct the other business incident to the mining operations—a place situate at the confluence of the Forty Mile Creek and the Yukon, and to which the name of Fort Cudahy has been given—is well within Canadian territory. The greater proportion of the mines then being worked Mr. Ogilvie found to be on the Canadian side of the international boundary line, but he reported the existence of some mining fields to the south, the exact position of which with respect to the boundary he did not have the opportunity to fix.

“ The number of persons engaged in mining in the locality mentioned has steadily increased year by year since the date of Mr. Ogilvie's survey, and it is estimated that at the commencement of the past season not less than one thousand men were so employed. Incident to this mineral development there must follow a corresponding growth in the volume of business of all descriptions, particularly the importation of dutiable goods, and the occupation of tracts of the public lands for mining purposes which according to the mining regulations are subject to the payment of certain prescribed dues and charges. The Alaska Commercial Company, for many years subsequent to the retirement of the Hudson's Bay Company, had a practical monopoly of the trade of the Yukon, carrying into the country and delivering at various points along the river, without regard to the international boundary line or the customs laws and regulations of Canada, such articles of commerce as were required for the prosecution of the fur trade and latterly of placer mining, these being the only two existing industries. With the discovery of gold, however, came the organization of a competing company known as the North American Transportation and Trading Company, having its headquarters in Chicago and its chief trading and distributing post at Cudahy. This Company



Looking down The Canyon, or Forty Mile River. Seven Miles from mouth.

has been engaged in this trade for over three years, and during the past season despatched two ocean steamers from Seattle to St. Michael, at the mouth of the Yukon, the merchandise from which was at the last mentioned point, transhipped into river steamers and carried to points inland, but chiefly to the Company's distributing centre within Canadian territory. Importations of considerable value, consisting of the immediately requisite supplies of the miners, and their tools, also reach the Canadian portion of the Yukon District from Juneau, in the United States, by way of the Dyea Inlet, the mountain passes, and the chain of waterways leading therefrom to Cudahy. Upon none of these importations had any duty been collected, except a sum of \$3,248.80 paid to Inspector Constantine in 1894, by the North American Transportation and Trading Company and others, and it is safe to conclude, especially when it is remembered that the country produces none of the articles consumed within it except fresh meat, that a large revenue was being lost to the public exchequer under the then existing conditions.

“ For the purpose of ascertaining officially and authoritatively the condition of affairs to which the correspondence referred to in the next preceding paragraph relates, the Honourable the President of the Privy Council, during the spring of 1894, despatched Inspector Charles Constantine, of the North-west Mounted Police Force, accompanied by Sergeant Brown, to Fort Cudahy and the mining camps in its vicinity. The report made by Mr. Constantine, on his return established the substantial accuracy of the representations already referred to. The value of the total output of gold for the season of 1894 he estimated at \$300,000, a very large sum considering the relatively short period to which mining operations are, by the nature of the climate, confined.

“ The facts recited clearly establish—first, that the time had arrived when it became the duty of the Government of Canada to make more efficient provision for the maintenance of order, the enforcement of the laws, and the administration of justice in the Yukon country, especially in that section of it in which placer mining for gold is being prosecuted upon such an extensive scale, situated near to the boundary separating the North-west Territories from the possessions of the United States in Alaska; and, second, that while such measures as were necessary to that end were called for in the interests of humanity, and particularly for the security and safety of the lives and property of the Canadian subjects of Her Majesty resident in that country who are engaged in legitimate business pursuits, it was evident that the revenue justly due to the Government of Canada, under its customs, excise and land laws, and which would go a long way to pay the expenses of government, was being lost for the want of adequate machinery for its collection.

“ Accordingly in June 1895 a detachment* of twenty members of the Mounted Police Force including officers was detailed for service in that portion of the North-west Territories. The officer in command, in addition to the magisterial and other duties he is required to perform by virtue of his office and under instructions from the department of Mounted Police, was duly authorized to represent where necessary, and until other arrangements can be made, all the departments of the government having interests in that region.

* The detachment was made up as follows:—Inspector C. Constantine, Officer Commanding Yukon Detachment N. W. M. Police; Inspector D. A. E. Strickland; Assistant Surgeon A. E. Wills; 2 Staff Sergeants; 2 Corporals; 13 Constables.

Particularly he is authorized to perform the duties of Dominion lands agent, collector of customs, and collector of Inland Revenue. At the same time instructions were given Mr. William Ogilvie, the surveyor referred to as having with Dr. Dawson, been entrusted with the conduct of the first government expedition to the Yukon, to proceed again to that district for the purpose of continuing and extending the work of determining the 141st meridian, of laying out building lots and mining claims, and generally of performing such duties as may be entrusted to him from time to time. Mr. Ogilvie's qualifications as a surveyor, and his previous experience as explorer of this section of the North-west, peculiarly fit him for the task.

“As it appears quite certain, from the report made by Mr. Ogilvie on his return to Ottawa in 1889, and from the report of Mr. Constantine, that the operations of the miners are being conducted upon streams which have their sources in the United States Territory of Alaska, and flow into Canada on their way to join the Yukon, and as doubtless some of the placer diggings under development are situated on the United States side of the boundary, it is highly desirable, both for the purpose of settling definitely to which country any land occupied for mining or other purposes actually belongs, and in order that the jurisdiction of the courts and officers of the United States and Canada, for both civil and criminal purposes, may be established, that the determination of the 141st meridian west of Greenwich from the point of its intersection with the Yukon, as marked by Mr. Ogilvie in 1887-88, for a considerable distance south of the river, and possibly also for some distance to the north, should be proceeded with at once. Mr. Ogilvie's instructions require him to go on with the survey with all convenient speed, but in order that this work may be effective for the accomplishment of the object in view, the co-operation of the Government of the United States is necessary. Correspondence is in progress through the proper authorities with a view to obtaining this co-operation. It may be mentioned that a United States surveyor has also determined the points at which the Yukon River and Forty Mile Creek are intersected by the 141st meridian.”

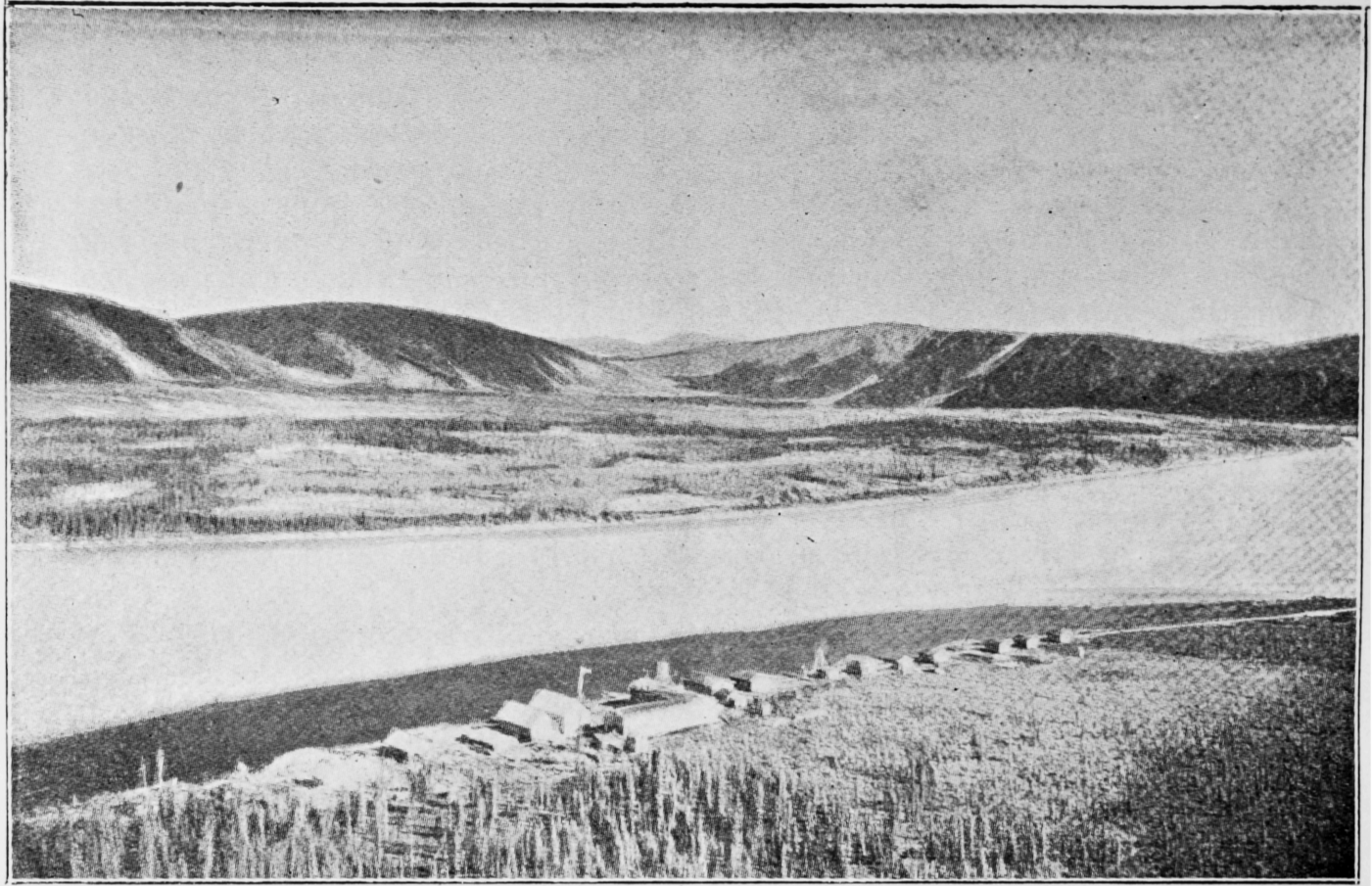
Since the date of the above report, Mr. D. W. Davis has been appointed collector of customs for the Yukon district.

The business of the Department of the Interior having grown to such proportions that Inspector Constantine was no longer able to deal with it and discharge the numerous other duties assigned to him, Mr. Thos. Fawcett, Dominion Topographical Surveyor, has been appointed gold commissioner, surveyor and general agent of the Minister of the Interior for the district. Accompanying him and acting under his instructions are two Dominion land surveyors, James Gibbons and E. D. Bolton, with their parties.

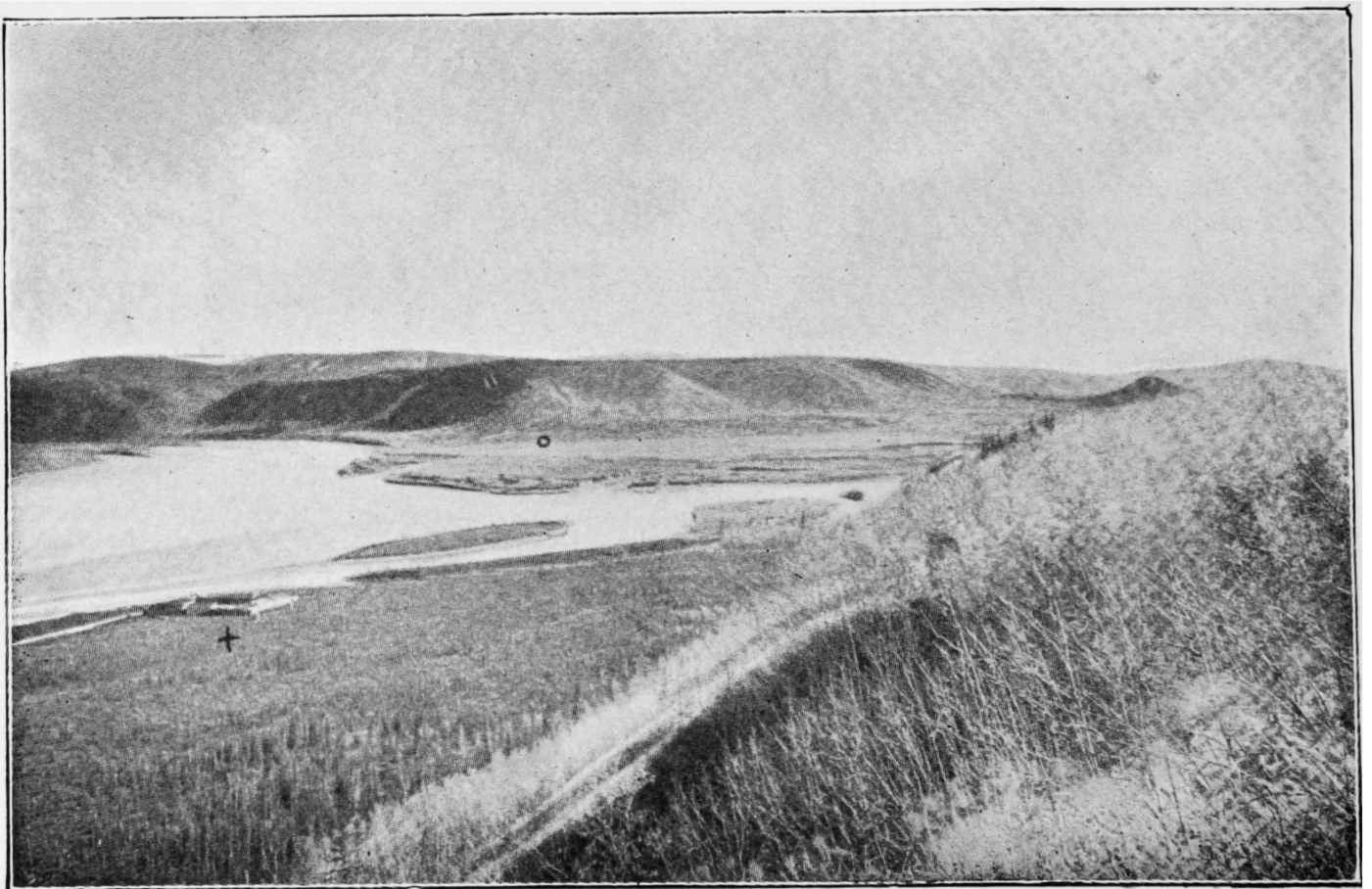
MEANS OF ACCESS.

The Alaska Commercial Company and the North American Transportation and Trading Company have steamers plying between San Francisco, Seattle and St. Michael. At the last named place the passengers and freight are transferred to stern wheel river boats, and Cudahy is reached after ascending the swift current of the Yukon for 1,600 miles.

Nearly the whole of the supplies for the district come by steamer up the river; it is the easiest but the longest route, and the diggings are not reached till a considerable portion of the short summer season has passed. As a rule



North American Trading and Transportation Company's Store,
Fort Cudahy, N.W.T.



O.—Town of 40 Mile (right-hand view).
X.—Fort Constantine, Head-quarters of North West Mounted Police, up to June, 1897.

it is not safe to enter Norton Sound on account of ice before the 1st of July. St. Michael is 80 miles from the northerly mouth of the Yukon; to cover that distance in a flat-bottomed river boat requires calm weather. After crossing the bar the boat is tied up for cleaning the boilers and getting rid of the salt. The passage up the river takes from 18 to 20 days, and the round trip about a month. The first boat does not arrive till late in July, and the river closes in September, so that the arrival of the last boats is somewhat uncertain; last year they are said to have been frozen in at Circle City. Two round trips in the season are all that can be relied upon.

Many parties prefer going by Lynn Canal, the Dyea Pass and down the Yukon. The distance from the sea to Cudahy is only 630 miles, and by starting in April or May the diggings are reached in the beginning of June.

The upper part of the river opens several weeks before the lower part is free from ice. After crossing the pass, the trip to Cudahy can be accomplished in eight days; it is fully described later on.

J. Dalton, a trader, has used a route overland from Chilkat Inlet to Fort Selkirk. Going up the Chilkat and Kilaheela Rivers, he crosses the divide to the Tahkeena River and continues northward over a fairly open country practicable for horses. The distance from the sea to Fort Selkirk is 350 miles.

Last summer a Juneau butcher sent 40 head of cattle to Cudahy. G. Bounds, the man in charge, crossed the divide over the Chilkat Pass, followed the shore of Lake Arkell and, keeping to the east of Dalton's trail, reached the Yukon just below the Rink Rapids. Here the cattle were slaughtered and the meat floated down on a raft to Cudahy, where it retailed at \$1 a pound.

It is proposed to establish a winter road somewhere across the country travelled over by Dalton and Bounds. The Yukon cannot be followed, the ice being too much broken, so that any winter road will have to be overland. A thorough exploration is now being made of all the passes at the head of Lynn Canal and of the upper waters of the Yukon. In a few months it is expected that the best routes for reaching the district from Lynn Canal will be definitely known.

MR. OGILVIE'S EXPLORATION OF 1887.

Mr. W. Ogilvie describes as follows his trip down to the Yukon River in 1887.

The first news I received on landing at Chilkoot was that there was trouble in the interior, on the Lewes River, in the vicinity where I intended to go. A miner, who had recently arrived from the interior, stated that there had been a fight between the Indians and the miners at the mouth of Stewart River. The result of the affair, he alleged, was that four Indians and two white men had been killed, and that the Indians had come up the river as far as the cañon to lie in wait for any white men who might be going into the country. I did not have an opportunity of questioning him, as he had gone to Juneau the day before I arrived. The rumour seemed to me to be somewhat improbable; but true or false, it was an unpleasant one to hear, and the only way to verify it was to go and see whether the Indians were hostile or not. Happily the whole story proved to be untrue. I subsequently learned from the miners in the interior that he had had difficulties with them, in consequence of which he was ordered in mid-winter to leave the region, which the miners

consider equivalent to sentence of death. Strange to say, he succeeded in getting out alive, making a distance of upwards of 500 miles of the most dangerous and difficult travelling. He started in the month of February, I think, and reached the coast in the month of May. It is reported that on his way out he had more trouble with an Indian whom he hired to accompany him. Another miner named Williams started from Stewart River for the coast in the month of December, carrying a message from Harper, McQuestion & Co., and mail from the miners. This man had the advantage at intervals of the assistance of the miners, a few of whom were scattered along the river in the vicinity of the Teslinto (the Newberry of Schwatka). At the summit of the coast range he was detained by a snow storm for three days, and the hardships he suffered brought on pneumonia, from the effects of which he died.

It is said by those familiar with the locality that the storms which rage in the upper altitudes of the coast range during the greater part of the time, from October to March, are terrific. A man caught in one of them runs the risk of losing his life, unless he can reach shelter in a short time. During the summer there is nearly always a wind blowing from the sea up Chatham Strait and Lynn Canal, which lie in almost a straight line with each other, and at the head of Lynn Canal are Chilkat and Chilkoot Inlets. The distance from the coast down these channels to the open sea is about 380 miles. The mountains on each side of the water confine the currents of air, and deflect inclined currents in the direction of the axis of the channel, so that there is nearly always a strong wind blowing up the channel. Coming from the sea, this wind is heavily charged with moisture, which is precipitated when the air current strikes the mountains, and the fall of rain and snow is consequently very heavy.

In Chilkat Inlet there is not much shelter from the south wind, which renders it unsafe for ships calling there. Capt. Hunter told me he would rather visit any other part of the coast than Chilkat.

After landing at Chilkoot the weather continued very wet for three days, so that I could not do anything in the way of commencing the survey, and during the delay myself and party were employed in making preparations for carrying the instruments, provisions and other baggage up to the head of Dyea Inlet, a distance of $20\frac{1}{2}$ miles. This was accomplished by securing the services of two boats belonging to a trader, which were towed to the head of the Dyea Inlet by the United States gunboat "Pinta," to the commander of which (Capt. Newell) I owe a debt of gratitude for his very obliging and attentive treatment of myself and party.

FROM DYEA INLET TO THE ALASKA BOUNDARY.

On the 30th of May I commenced the survey by connecting Pyramid Island in Chilkat Inlet with Chilkoot Inlet at Haines mission. At this point a Protestant mission was established some years ago; but it is now abandoned, owing, as I was informed, to the very unpleasant conduct of the Chilkoot Indians. I could not learn that they had committed any overt act of hostility, but it appears the missionary tried to relieve the sufferings of a sick Indian child. Unfortunately the child died, and the father attributed the death to the missionary, and from that time acted in so suspicious a manner towards the children of the latter that he considered it unsafe to remain in the vicinity, and moved into Juneau.

To carry the survey from the island across to Chilkoot Inlet I had to get up on the mountains north of Haines mission, and from there could see both inlets.

Owing to the bad weather I could get no observation for azimuth, and had to produce the survey from Pyramid Island to Dyea Inlet by reading the angles of deflection between the courses. At Dyea Inlet I got my first observation, and deduced the azimuths of my courses up to that point. Dyea Inlet has evidently been the valley of a glacier; its sides are steep and smooth from glacial action; and this, with the wind almost constantly blowing landward, renders getting upon the shore difficult. Some long sights were therefore necessary. The survey was made up to the head of the inlet on the 2nd of June. Preparations were then commenced for taking the supplies and instruments over the coast range of mountains to the head of Lake Lindeman on the Lewes River. Commander Newell kindly aided me in making arrangements with the Indians, and did all he could to induce them to be reasonable in their demands. This, however, neither he nor any one else could accomplish. They refused to carry to the lake for less than \$20 per hundred pounds, and as they had learned that the expedition was an English one, the second chief of the Chilkoot Indians recalled some memories of an old quarrel which the tribe had with the English many years ago, in which an uncle of his was killed, and he thought we should pay for the loss of his uncle by being charged an exorbitant price for our packing, of which he had the sole control. Commander Newell told him I had a permit from the Great Father at Washington to pass through his country safely, that he would see that I did so, and that if the Indians interfered with me they would be punished for doing so. After much talk they consented to carry our stuff to the summit of the mountain for \$10 per hundred pounds. This is about two-thirds of the whole distance, includes all the climbing and all the woods, and is by far the most difficult part of the way.

On the 6th of June 120 Indians, men, women, and children, started for the summit. I sent two of my party with them to see the goods delivered at the place agreed upon. Each carrier when given a pack also got a ticket, on which was inscribed the contents of the pack, its weight, and the amount the individual was to get for carrying it. They were made to understand that they had to produce these tickets on delivering their packs, but were not told for what reason. As each pack was delivered one of my men receipted the ticket and returned it. The Indians did not seem to understand the import of this; a few of them pretended to have lost their tickets; and as they could not get paid without them, my assistant, who had duplicates of every ticket, furnished them with receipted copies, after examining their packs.

While they were packing to the summit I was producing the survey, and I met them on their return at the foot of the cañon, about eight miles from the coast, where I paid them. They came to the camp in the early morning before I was up, and for about two hours there was quite a hubbub. When paying them I tried to get their names, but very few of them would give any Indian name, nearly all, after a little reflection, giving some common English name. My list contained little else than Jack, Tom, Joe, Charley, &c., some of which were duplicated three and four times. I then found why some of them had pretended to lose their tickets at the summit. Three or four who had thus acted presented themselves twice for payment, producing first the receipted ticket, afterwards the one they claimed to have lost, demanding pay for both. They were much taken aback when they found that their duplicity had been discovered.

These Indians are perfectly heartless. They will not render even the smallest aid to each other without payment; and if not to each other, much

less to a white man. I got one of them, whom I had previously assisted with his pack, to take me and two of my party over a small creek in his canoe. After putting us across he asked for money, and I gave him half a dollar. Another man stepped up and demanded pay, stating that the canoe was his. To see what the result would be, I gave to him the same amount as to the first. Immediately there were three or four more claimants for the canoe. I dismissed them with a blessing, and made up my mind that I would wade the next creek.

While paying them I was a little apprehensive of trouble, for they insisted on crowding into my tent, and for myself and the four men who were with me to have attempted to eject them would have been to invite trouble. I am strongly of the opinion that these Indians would have been much more difficult to deal with if they had not known that Commander Newell remained in the inlet to see that I got through without accident.

While making the survey from the head of tide water I took the azimuths and altitudes of several of the highest peaks around the head of the inlet, in order to locate them, and obtain an idea of the general height of the peaks in the coast range. As it does not appear to have been done before, I have taken the opportunity of naming all the peaks, the positions of which I fixed in the above way. The names and altitudes appear on my map.

While going up from the head of canoe navigation on the Dyea River I took the angles of elevation of each station from the preceding one. I would have done this from tide water up, but found many of the courses so short and with so little increase in height that with the instrument I had it was inappreciable. From these angles I have computed the height of the summit of the Dyea Pass,* above the head of canoe navigation, as it appeared to me in June, 1887, and find it to be 3,378 feet. What depth of snow there was I cannot say. The head of canoe navigation I estimate at about 120 feet above tide water. Dr. Dawson gives it as 124 feet.

I determined the descent from the summit to Lake Lindeman by carrying the aneroid from the lake to the summit and back again, the interval of time from start to return being about eight hours. Taking the mean of the readings at the lake, start and return, and the single reading at the summit, the height of the summit above the lake was found to be 1,237 feet. While making the survey from the summit down to the lake I took the angles of depression of each station from the preceding one, and from these angles I deduced the difference of height, which I found to be 1,354 feet, or 117 feet more than that found by the aneroid. This is quite a large difference; but when we consider the altitude of the place, the sudden changes of temperature, and the atmospheric conditions, it is not more than one might expect.

While at Juneau I heard reports of a low pass from the head of Chilkoot Inlet to the head waters of Lewes River. During the time I was at the head of Dyea Inlet I made inquiries regarding it, and found that there was such a pass, but could learn nothing definite about it from either whites or Indians. As Capt. Moore, who accompanied me, was very anxious to go through it, and as the reports of the Dyea Pass indicated that no wagon road or railroad could ever be built through it, while the new pass appeared, from what little

* The distance from the head of Dyea Inlet to the summit of the pass is 15 miles, and the whole length of the pass to Lake Lindeman is 23 miles. Messrs. Healy and Wilson, dealers in general merchandise and miners' supplies at Dyea, have a train of pack horses carrying freight from the head of Lynn Canal to the summit. They hope to be able to take freight through to Lake Lindeman with their horses during the present season.



Samples of Gold from Bonanza and Last Chance Creeks.
Value, \$1,000'00.

knowledge I could get of it, to be much lower and possibly feasible for a wagon road, I determined to send the captain by that way, if I could get an Indian to accompany him. This, I found, would be difficult to do. None of the Chilkoots appeared to know anything of the pass, and I concluded that they wished to keep its existence and condition a secret. The Tagish, or Stick Indians, as the interior Indians are locally called, are afraid to do anything in opposition to the wishes of the Chilkoots; so it was difficult to get any of them to join Capt. Moore; but after much talk and encouragement from the whites around, one of them named "Jim" was induced to go. He had been through this pass before, and proved reliable and useful. The information obtained from Capt. Moore's exploration I have incorporated in my plan of the survey from Dyea Inlet, but it is not as complete as I would have liked. I have named this pass "White Pass," in honour of the late Hon. Thos. White, Minister of the Interior, under whose authority the expedition was organized. Commencing at Dyea Inlet, about two miles south of its north end, it follows up the valley of the Shkagway River to its source, and thence down the valley of another river which Capt. Moore reported to empty into the Takone or Windy Arm of Bove Lake (Schwatka). Dr. Dawson says this stream empties into Taku Arm, and in that event Capt. Moore is mistaken. Capt. Moore did not go all the way through to the lake, but assumed from reports he heard from the miners and others that the stream flowed into Windy Arm, and this also was the idea of the Indian "Jim" from what I could gather from his remarks in broken English and Chinook. Capt. Moore estimates the distance from tide water to the summit at about 18 miles, and from the summit to the lake at about 22 to 23 miles. He reports the pass as thickly timbered all the way through.

The timber line on the south side of the Dyea Pass, as determined by barometer reading, is about 2,300 feet above the sea, while on the north side it is about 1,000 feet below the summit. This large difference is due, I think, to the different conditions in the two places. On the south side the valley is narrow and deep, and the sun cannot produce its full effect. The snow also is much deeper there, owing to the quantity which drifts in from the surrounding mountains. On the north side the surface is sloping, and more exposed to the sun's rays. On the south side the timber is of the class peculiar to the coast, and on the north that peculiar to the interior. The latter would grow at a greater altitude than the coast timber. It is possible that the summit of White Pass is not higher than the timber line on the north of the Dyea Pass, or about 2,500 feet above tide water, and it is possibly even lower than this, as the timber in a valley such as the White Pass would hardly live at the same altitude as on the open slope on the north side.

Capt. Moore has had considerable experience in building roads in mountainous countries. He considers that this would be an easy route for a wagon road compared with some roads he has seen in British Columbia. Assuming his distances to be correct, and the height of the pass to be probably about correctly indicated, the grades would not be very steep, and a railroad could easily be carried through if necessary.

After getting all my outfit over to the foot of Lake Lindeman I set some of the party to pack it to the head of Lake Bennet. The stream between these two lakes is too shallow and rough to permit of canoe navigation, and everything had to be portaged the greater part of the way.

I employed the rest of the party in looking for timber to build a boat to carry my outfit of provisions and implements down the river to the vicinity of

the international boundary, a distance of about 700 miles. It took several days to find a tree large enough to make plank for the boat I wanted, as the timber around the upper end of the lake is small and scrubby. My boat was finished on the evening of the 11th of July, and on the 12th I started a portion of the party to load it and go ahead with it and the outfit to the cañon. They had instructions to examine the cañon and, if necessary, to carry a part of the outfit past it—in any case, enough to support the party back to the coast should accident necessitate such procedure. With the rest of the party I started to carry on the survey, which may now be said to have fairly started ahead on the lakes. This proved tedious work, on account of the stormy weather.

In the summer months there is nearly always a wind blowing in from the coast; it blows down the lakes and produces quite a heavy swell. This would not prevent the canoes going with the decks on, but, as we had to land every mile or so, the rollers breaking on the generally flat beach proved very troublesome. On this account I found I could not average more than ten miles per day on the lakes, little more than half of what could be done on the river.

The survey was completed to the cañon on the 20th of July. There I found the party with the large boat had arrived on the 18th, having carried a part of the supplies past the cañon, and were awaiting my arrival to run through it with the rest in the boat. Before doing so, however, I made an examination of the cañon. The rapids below it, particularly the last rapid of the series (called the White Horse by the miners), I found would not be safe to run. I sent two men through the cañon in one of the canoes to await the arrival of the boat, and to be ready in case of an accident to pick us up. Every man in the party was supplied with a life-preserver, so that should a casualty occur we would all have floated. Those in the canoe got through all right; but they would not have liked to repeat the trip. They said the canoe jumped about a great deal more than they thought it would, and I had the same experience when going through in the boat.

The passage through is made in about three minutes, or at the rate of about $12\frac{1}{2}$ miles an hour. If the boat is kept clear of the sides there is not much danger in high water; but in low water there is a rock in the middle of the channel, near the upper end of the cañon, that renders the passage more difficult. I did not see this rock myself, but got my information from some miners I met in the interior, who described it as being about 150 yards down from the head and a little to the west of the middle of the channel. In low water it barely projects above the surface. When I passed through there was no indication of it, either from the bank above or from the boat.

The distance from the head to the foot of the cañon is five-eighths of a mile. There is a basin about midway in it about 150 yards in diameter. This basin is circular in form, with steep sloping sides about 100 feet high. The lower part of the cañon is much rougher to run through than the upper part, the fall being apparently much greater. The sides are generally perpendicular, about 80 to 100 feet high, and consist of basalt, in some places showing hexagonal columns.

The White Horse Rapids are about three-eighths of a mile long. They are the most dangerous rapids on the river, and are never run through in boats except by accident. They are confined by low basaltic banks, which, at the foot, suddenly close in and make the channel about 30 yards wide. It is here the danger lies, as there is a sudden drop and the water rushes through at a tremendous rate, leaping and seething like a cataract. The miners have



Summer Mining Costume.

constructed a portage road on the west side, and put down rollways in some places on which to shove their boats over. They have also made some windlasses with which to haul their boats up hill, notably one at the foot of the cañon. This roadway and the windlasses must have cost them many hours of hard labour. Should it ever be necessary, a tramway could be built past the cañon on the east side with no great difficulty. With the exception of the Five Finger Rapids these appear to be the only serious rapids on the whole length of the river.

Five Finger Rapids are formed by several islands standing in the channel and backing up the water so much as to raise it about a foot, causing a swell below for a few yards. The islands are composed of conglomerate rock, similar to the cliffs on each side of the river, whence one would infer that there has been a fall here in past ages. For about two miles below the rapids there is a pretty swift current, but not enough to prevent the ascent of a steamboat of moderate power, and the rapids themselves I do not think would present any serious obstacle to the ascent of a good boat. In very high water warping might be required. Six miles below these rapids are what are known as "Rink Rapids." This is simply a barrier of rocks, which extends from the westerly side of the river about half way across. On this barrier there is a ripple which would offer no great obstacle to the descent of a good canoe. On the easterly side there is no ripple, and the current is smooth and the water apparently deep. I tried with a 6 foot paddle, but could not reach the bottom.

I left Forty Mile River for the boundary line between Alaska and the North-west Territories on the 12th September, and finished the survey to that point on the 14th. I then spent two days in examining the valley of the river in the vicinity of the boundary to get the most extensive view of the horizon possible, and to find a tree large enough to serve for a transit stand.

Before leaving Toronto I got Mr. Foster to make large brass plates with V's on them, which could be screwed firmly to a stump, and thus be made to serve as a transit stand. I required a stump at least 22 inches in diameter to make a base large enough for the plates when properly placed for the transit. In a search which covered about four miles of the river bank, on both sides, I found only one tree as large as 18 inches. I mention this fact to give an idea of the size of the trees along the river in this vicinity. I had this stump enlarged by firmly fixing pieces on the sides so as to bring it up to the requisite size. This done, I built around the stump a small transit house of the ordinary form and then mounted and adjusted my transit. Meanwhile, most of the party were busy preparing our winter quarters and building a magnetic observatory. As I had been led to expect extremely low temperatures during the winter, I adopted precautionary measures, so as to be as comfortable as circumstances would permit during our stay there.

* * * * *

DESCRIPTION OF THE YUKON, ITS AFFLUENT STREAMS, AND THE ADJACENT COUNTRY.

I will give, from my own observation and from information received, a detailed description of the Lewes River, its affluent streams, and the resources of the adjacent country.

For the purpose of navigation a description of the Lewes River begins at the head of Lake Bennet. Above that point, and between it and Lake

Lindeman, there is only about three-quarters of a mile of river, which is not more than fifty or sixty yards wide, and two or three feet deep, and is so swift and rough that navigation is out of the question.

Lake Lindeman is about five miles long and half a mile wide. It is deep enough for all ordinary purposes. Lake Bennet* is twenty-six and a quarter miles long, for the upper fourteen of which it is about half a mile wide. About midway in its length an arm comes in from the west, which Schwatka appears to have mistaken for a river, and named Wheaton River. This arm is wider than the other arm down to that point, and is reported by Indians to be longer and heading in a glacier which lies in the pass at the head of Chilkoot Inlet. This arm is, as far as seen, surrounded by high mountains, apparently much higher than those on the arm we travelled down. Below the junction of the two arms the lake is about one and a half miles wide, with deep water. Above the forks the water of the east branch is muddy. This is caused by the streams from the numerous glaciers on the head of the tributaries of Lake Lindeman.

A stream which flows into Lake Bennet at the south-west corner is also very dirty, and has shoaled quite a large portion of the lake at its mouth. The beach at the lower end of this lake is comparatively flat and the water shoal. A deep, wide valley extends northwards from the north end of the lake, apparently reaching to the cañon, or a short distance above it. This may have been originally a course for the waters of the river. The bottom of the valley is wide and sandy, and covered with scrubby timber, principally poplar and pitch-pine. The waters of the lake empty at the extreme north-east angle through a channel not more than one hundred yards wide, which soon expands into what Schwatka calls Lake Nares.† Through this narrow channel there is quite a current, and more than 7 feet of water, as a 6 foot paddle and a foot of arm added to its length did not reach the bottom.

The hills at the upper end of Lake Lindeman rise abruptly from the water's edge. At the lower end they are neither so steep nor so high.

Lake Nares is only two and a half miles long, and its greatest width is about a mile; it is not deep, but is navigable for boats drawing 5 or 6 feet of water; it is separated from Lake Bennet by a shallow sandy point of not more than 200 yards in length.

No streams of any consequence empty into either of these lakes. A small river flows into Lake Bennet on the west side, a short distance north of the fork, and another at the extreme north-west angle, but neither of them is of any consequence in a navigable sense.

Lake Nares flows through a narrow curved channel into Bove Lake (Schwatka). This channel is not more than 600 or 700 yards long, and the water in it appears to be sufficiently deep for boats that could navigate the lake. The land between the lakes along this channel is low, swampy, and covered with willows, and, at the stage in which I saw it, did not rise more than three feet above the water. The hills on the south-west side slope up easily, and are not high; on the north side the deep valley already referred to borders it; and on the east side the mountains rise abruptly from the lake shore.

* A small saw-mill has been erected at the head of Lake Bennet; lumber for boat building sells at \$100 per M. Boats 25 feet long and 5 feet beam are \$60 each. Last year the ice broke up in the lake on the 12th June, but this season is earlier and the boats are expected to go down the lake about the 1st of June.

† The connecting waters between Lake Bennet and Tagish Lake constitute what is now called Caribou Crossing.

Bove Lake (called Tagish Lake by Dr. Dawson) is about a mile wide for the first two miles of its length, when it is joined by what the miners have called the Windy Arm. One of the Tagish Indians informed me they called it Takone Lake. Here the lake expands to a width of about two miles for a distance of some three miles, when it suddenly narrows to about half a mile for a distance of a little over a mile, after which it widens again to about a mile and a half or more.

Ten miles from the head of the lake it is joined by the Taku Arm from the south. This arm must be of considerable length, as it can be seen for a long distance, and its valley can be traced through the mountains much farther than the lake itself can be seen. It is apparently over a mile wide at its mouth or junction.

Dr. Dawson includes Bove Lake and these two arms under the common name of Tagish Lake. This is much more simple and comprehensive than the various names given them by travellers. These waters collectively are the fishing and hunting grounds of the Tagish Indians, and as they are really one body of water, there is no reason why they should not be all included under one name.

From the junction with the Taku Arm to the north end of the lake the distance is about six miles, the greater part being over two miles wide. The west side is very flat and shallow, so much so that it was impossible in many places to get our canoes to the shore, and quite a distance out in the lake there was not more than 5 feet of water. The members of my party who were in charge of the large boat and outfit, went down the east side of the lake and reported the depth about the same as I found on the west side, with many large rocks. They passed through it in the night in a rain storm, and were much alarmed for the safety of the boat and provisions. It would appear that this part of the lake requires some improvement to make it in keeping with the rest of the water system with which it is connected.

Where the river debouches from it, it is about 150 yards wide, and for a short distance not more than 5 or 6 feet deep. The depth is, however, soon increased to 10 feet or more, and so continues down to what Schwatka calls Marsh Lake. The miners call it Mud Lake, but on this name they do not appear to be agreed, many of them calling the lower part of Tagish or Bove Lake "Mud Lake," on account of its shallowness and flat muddy shores, as seen along the west side, the side nearly always travelled, as it is more sheltered from the prevailing southerly winds. The term "Mud Lake" is, however, not applicable to this lake, as only a comparatively small part of it is shallow or muddy; and it is nearly as inapplicable to Marsh Lake, as the latter is not markedly muddy along the west side, and from the appearance of the east shore one would not judge it to be so, as the banks appear to be high and gravelly.

Marsh Lake is a little over nineteen miles long, and averages about two miles in width. I tried to determine the width of it as I went along with my survey by taking azimuths of points on the eastern shore from different stations of the survey; but in only one case did I succeed, as there were no prominent marks on that shore that could be identified from more than one place. The piece of river connecting Tagish and Marsh Lake is about five miles long, and averages 150 to 200 yards in width, and, as already mentioned, is deep, except for a short distance at the head. On it are situated the only Indian houses to be found in the interior with any pretension to skill

in construction. They show much more labour and imitativeness than one knowing anything about the Indian in his native state would expect. The plan is evidently taken from the Indian houses on the coast, which appear to me to be a poor copy of the houses which the Hudson Bay Company's servants built around their trading posts. These houses do not appear to have been used for some time past, and are almost in ruins. The Tagish Indians are now generally on the coast, as they find it much easier to live there than in their own country. As a matter of fact, what they make in their own country is taken from them by the Coast Indians, so that there is little inducement for them to remain.

The Lewes River, where it leaves Marsh Lake, is about 200 yards wide, and averages this width as far as the cañon. I did not try to find bottom anywhere as I went along, except where I had reason to think it shallow, and there I always tried with my paddle. I did not anywhere find bottom with this, which shows that there is no part of this stretch of the river with less than six feet of water at medium height, at which stage it appeared to me the river was at that time.

From the head of Lake Bennet to the cañon the corrected distance is 95 miles, all of which is navigable for boats drawing five feet or more. Add to this the westerly arm of Lake Bennet, and the Takone or Windy Arm of Tagish Lake, each about 15 miles in length, and the Taku Arm of the latter lake, of unknown length, but probably not less than 30 miles, and we have a stretch of water of upwards of 100 miles in length, all easily navigable; and, as has been pointed out, easily connected with Dyea Inlet through the White Pass.

No streams of any importance enter any of these lakes so far as I know. A river, called by Schwatka "McClintock River," enters Marsh Lake at the lower end from the east. It occupies a large valley, as seen from the westerly side of the lake, but the stream is apparently unimportant. Another small stream, apparently only a creek, enters the south-east angle of the lake. It is not probable that any stream coming from the east side of the lake is of importance, as the strip of country between the Lewes and Teslinto is not more than thirty or forty miles in width at this point.

The Taku Arm of Tagish Lake is, so far, with the exception of reports from Indians, unknown; but it is equally improbable that any river of importance enters it, as it is so near the source of the waters flowing northwards. However, this is a question that can only be decided by a proper exploration. The cañon I have already described and will only add that it is five-eighths of a mile long, about 100 feet wide, with perpendicular banks of basaltic rock from 60 to 100 feet high.

Below the cañon proper there is a stretch of rapids for about a mile; then about half a mile of smooth water, following which are the White Horse Rapids, which are three-eighths of a mile long, and unsafe for boats.

The total fall in the cañon and succeeding rapids was measured and found to be 32 feet. Were it ever necessary to make this part of the river navigable it would be no easy task to overcome the obstacles at this point; but a tram or railway could, with very little difficulty, be constructed along the east side of the river past the cañon.

For some distance below the White Horse Rapids the current is swift and the river wide, with many gravel bars. The reach between these rapids and



Camp near Takish Lake, on the trip from Dyea to Dawson.

Lake Labarge, a distance of twenty-seven and a half miles, is all smooth water, with a strong current. The average width is about 150 yards. There is no impediment to navigation other than the swift current, and this is no stronger than on the lower part of the river, which is already navigated; nor is it worse than on the Saskatchewan and Red Rivers in the more eastern part of our territory.

About midway in this stretch the Tahkeena River* joins the Lewes. This river is, apparently, about half the size of the latter. Its waters are muddy, indicating its passage through a clayey district. I got some indefinite information about this river from an Indian who happened to meet me just below its mouth, but I could not readily make him understand me, and his replies were a compound of Chinook, Tagish, and signs, and therefore largely unintelligible. From what I could understand with any certainty, the river was easy to descend, there being no bad rapids, and it came out of a lake much larger than any I had yet passed.

Here I may remark that I have invariably found it difficult to get reliable or definite information from Indians. The reasons for this are many. Most of the Indians it has been my lot to meet are expecting to make something, and consequently are very chary about doing or saying anything unless they think they will be well rewarded for it. They are naturally very suspicious of strangers, and it takes some time, and some knowledge of their language, to overcome this suspicion and gain their confidence. If you begin at once to ask questions about their country, without previously having them understand that you have no unfriendly motive in doing so, they become alarmed, and although you may not meet with a positive refusal to answer questions, you make very little progress in getting desired information. On the other hand I have met cases where, either through fear or hope of reward, they were only too anxious to impart all they knew or had heard, and even more if they thought it would please their hearer. I need hardly say that such information is often not at all in accordance with the facts.

I have several times found that some act of mine when in their presence has aroused either their fear, superstition or cupidity. As an instance: on the Bell River I met some Indians coming down stream as I was going up. We were ashore at the time, and invited them to join us. They started to come in, but very slowly, and all the time kept a watchful eye on us. I noticed that my double-barrelled shot gun was lying at my feet, loaded, and picked it up to unload it, as I knew they would be handling it after landing. This alarmed them so much that it was some time before they came in, and I don't think they would have come ashore at all had they not heard that a party of white men, of whom we answered the description, were coming through that way (they had learned this from the Hudson's Bay Company's officers) and concluded we were the party described to them. After drinking some of our tea, and getting a supply for themselves, they became quite friendly and communicative.

Again, on the Mackenzie River, while two Indians were coming ashore at my camp, I picked up a telescope to look for a signal across the river. In looking for it I had to point it towards the Indians, who immediately turned and fled. Next day I called at the Indian encampment and explained through my interpreter what I had really done. When they understood it, it caused the camp much amusement.

* The Tahkeena was formerly much used by the Chilkat Indians as a means of reaching the interior but never by the miners owing to the distance from the sea to its head.

At Fort Good Hope, on the Mackenzie, I heard of an old Indian who had been a great deal on the Hare River and could give valuable information regarding it. I asked to have him brought in, that I might question him. In the meantime I set about getting an observation for azimuth, and was busy observing when he came. The interpreter asked me what I was doing; I told him. He asked what I was looking up so much for; I said I was looking at a star. As the time was early in the evening, and the sun well up in the sky, he at first doubted my statement, but, finally believing, he explained to the Indians around what I was doing, and pointed out to them where the star was. They looked up in an awed manner, and walked off. When I finished my observation and inquired for the old man, I was told that he was not inclined to see me. I found him, but he refused to answer any questions, saying that there was no use in telling me anything, for when I could see stars during daylight I could just as easily see all the river, and nothing could convince him to the contrary.

I cite these as instances of what one meets with who comes in contact with Indians, and of how trifles affect them. A sojourn of two or three days with them and the assistance of a common friend would do much to disabuse them of such ideas, but when you have no such aids you must not expect to make much progress.

Lake Labarge is thirty-one miles long. In the upper thirteen it varies from three to four miles in width; it then narrows to about two miles for a distance of seven miles, when it begins to widen again, and gradually expands to about two and a-half or three miles, the lower six miles of it maintaining the latter width. The survey was carried along the western shore, and while so engaged I determined the width of the upper wide part by triangulation at two points, the width of the narrow middle part at three points, and the width of the lower part at three points. Dr. Dawson on his way out made a track survey of the eastern shore. The western shore is irregular in many places, being indented by large bays, especially at the upper and lower ends. These bays are, as a rule, shallow, more especially those at the lower end.

Just above where the lake narrows in the middle there is a large island. It is three and a-half miles long and about half a mile in width. It is shown on Schwatka's map as a peninsula, and called by him Richtofen Rocks. How he came to think it a peninsula I cannot understand, as it is well out in the lake; the nearest point of it to the western shore is upwards of half a mile distant, and the extreme width of the lake here is not more than five miles, which includes the depth of the deepest bays on the western side. It is therefore difficult to understand that he did not see it as an island. The upper half of this island is gravelly, and does not rise very high above the lake. The lower end is rocky and high, the rock being of a bright red colour.

At the lower end of the lake there is a large valley extending northwards, which has evidently at one time been the outlet of the lake. Dr. Dawson has noted it and its peculiarities. His remarks regarding it will be found on pages 156—160 of his report entitled "Yukon District and Northern portion of British Columbia," published in 1889.

The width of the Lewes River as it leaves the lake is the same as at its entrance, about 200 yards. Its waters when I was there were murky. This is caused by the action of the waves on the shore along the lower end of the lake. The water at the upper end and at the middle of the lake is quite clear, so

much so that the bottom can be distinctly seen at a depth of 6 or 7 feet. The wind blows almost constantly down this lake, and in a high wind it gets very rough. The miners complain of much detention owing to this cause, and certainly I cannot complain of a lack of wind while I was on the lake. This lake was named after one Mike Labarge, who was engaged by the Western Union Telegraph Company, exploring the river and adjacent country for the purpose of connecting Europe and America by telegraph through British Columbia, and Alaska, and across Bering Strait to Asia, and thence to Europe. This exploration took place in 1867, but it does not appear that Labarge then, nor for some years after, saw the lake called by his name. The successful laying of the Atlantic cable in 1866 put a stop to this project, and the exploring parties sent out were recalled as soon as word could be got to them. It seems that Labarge had got up as far as the Pelly before he received his recall; he had heard something of a large lake some distance further up the river, and afterwards spoke of it to some traders and miners who called it after him.

After leaving Lake Labarge the river, for a distance of about five miles, preserves a generally uniform width and an easy current of about four miles per hour. It then makes a short turn round a low gravel point, and flows in exactly the opposite of its general course for a mile when it again turns sharply to its general direction. The current around this curve and for some distance below it—in all four or five miles—is very swift. I timed it in several places and found it from six to seven miles an hour. It then moderates to four or five, and continues so until the Teslintoo River is reached, thirty-one and seven-tenths miles from Lake Labarge. The average width of this part of the river is about 150 yards, and the depth is sufficient to afford passage for boats drawing at least 5 feet. It is, as a rule, crooked, and consequently a little difficult to navigate.

The Teslintoo* was so called by Dr. Dawson—this, according to information obtained by him, being the Indian name. It is called by the miners "Hootalinkwa" or Hotalinqua, and was called by Schwatka, who appears to have bestowed no other attention to it, the Newberry, although it is apparently much larger than the Lewes. This was so apparent that in my interim reports I stated it as a fact. Owing to circumstances already narrated, I had not time while at the mouth to make any measurement to determine the relative size of the rivers; but on his way out Dr. Dawson made these measurements, and his report, before referred to, gives the following values of the cross section of each stream: Lewes, 3,015 feet; Teslintoo, 3,809 feet. In the same connection he states that the Lewes appeared to be about one foot above its lowest summer level, while the Teslintoo appeared to be at its lowest level. Assuming this to be so, and taking his widths as our data, it would reduce his cross section of the Lewes to 2,595 feet. Owing, however, to the current in the Lewes, as determined by Dr. Dawson, being just double that of the Teslintoo, the figures being 5.68 and 2.88 miles per hour respectively, the discharge of the Lewes, taking these figures again, is 18,644 feet, and of the

* The limited amount of prospecting that has been done on this river is said to be very satisfactory, fine gold having been found in all parts of the river. The lack of supplies is the great drawback to its development, and this will not be overcome to any extent until by some means heavy freight can be brought over the coast range to the head of the river. Indeed, owing to the difficulties attending access and transportation, the great drawback to the entire Yukon district at present is the want of heavy mining machinery and the scarcity of supplies. The government being aware of the requirements and possibilities of the country, has undertaken the task of making preliminary surveys for trails and railroads, and no doubt in the near future the avenue for better and quicker transportation facilities will be opened up.

Teslintoo 11,436 feet. To reduce the Lewes to its lowest level the doctor says would make its discharge 15,600 feet.

The water of the Teslintoo is of a dark brown colour, similar in appearance to the Ottawa River water, and a little turbid. Notwithstanding the difference of volume of discharge, the Teslintoo changes completely the character of the river below the junction, and a person coming up the river would, at the forks, unhesitatingly pronounce the Teslintoo the main stream. The water of the Lewes is blue in colour, and at the time I speak of was somewhat dirty—not enough so, however, to prevent one seeing to a depth of two or three feet.

At the junction of the Lewes and Teslintoo I met two or three families of the Indians who hunt in the vicinity. One of them could speak a little Chinook. As I had two men with me who understood his jargon perfectly, with their assistance I tried to get some information from him about the river. He told me the river was easy to ascend, and presented the same appearance eight days journey up as at the mouth; then a lake was reached, which took one day to cross; the river was then followed again for half a day to another lake, which took two days to traverse; into this lake emptied a stream which they used as a highway to the coast, passing by way of the Taku River. He said it took four days when they had loads to carry, from the head of canoe navigation on the Teslintoo to salt water on the Taku Inlet; but when they come light they take only one to two days. He spoke also of a stream entering the large lake from the east which came from a distance; but they did not seem to know much about it, and considered it outside their country. If their time intervals are approximately accurate, they mean that there are about 200 miles of good river to the first lake, as they ought easily to make 25 miles a day on the river as I saw it. The lake takes one day to traverse, and is at least 25 miles long, followed by say 12 of river, which brings us to the large lake, which takes two days to cross, say 50 or 60 more—in all about 292 miles—say 300 to the head of canoe navigation; while the distance from the head of lake Bennet to the junction is only 188. Assuming the course of the Teslintoo to be nearly south (it is a little to the east of it), and throwing out every fourth mile for bends, the remainder gives us in arc three degrees and a quarter of latitude, which, deducted from $61^{\circ} 40'$, the latitude of the junction, gives us $58^{\circ} 25'$, or nearly the latitude of Juneau.

To make sure that I understood the Indian aright, and that he knew what he was speaking about, I got him to sketch the river and lake, as he described them, on the sand, and to repeat the same several times.

I afterwards met Mr. T. Boswell, his brother, and another miner, who had spent most of the summer on the river prospecting, and from them I gathered the following: The distance to the first and only lake which they saw, they put at 175 miles, and the lake itself they call at least 150 miles long, as it took them four days to row in a light boat from end to end. The portage to the sea they did not appear to know anything about, but describe a large bay on the east side of the lake, into which a river of considerable size entered. This river occupies a wide valley, surrounded by high mountains. They thought this river must head near Liard River. This account differs materially from that given by the Indian, and to put them on their guard, I told them what he had told me, but they still persisted in their story, which I find differs a good deal from the account they gave Dr. Dawson, as incorporated in his report.

Many years ago, sixteen I think, a man named Monroe prospected up the Taku and learned from the Indians something of a large lake not far from that



Lynn Canal at Entrance to Chilkoot Inlet.

river. He crossed over and found it, and spent some time in prospecting, and then recrossed to the sea. This man had been at Forty Mile River, and I heard from the miners there his account of the appearance of the lake, which amounted generally to this: "The Boswells did not know anything about it." It was unfortunate the Boswells did not remain at Forty Mile all winter, as by a comparison of recollections they might have arrived at some correct conclusion.

Conflicting as these descriptions are, one thing is certain: this branch, if it has not the greater discharge, is the longer and more important of the two, and offers easy and uninterrupted navigation for more than double the distance which the Lewes does, the cañon being only ninety miles above the mouth of the Teslintoo. The Boswells reported it as containing much more useful timber than the Lewes, which indeed one would infer from its lower altitude.

Assuming this as the main river, and adding its length to the Lewes-Yukon below the junction, gives upwards of 2,200 miles of river, fully two-thirds of which runs through a very mountainous country, without an impediment to navigation.

Some indefinite information was obtained as to the position of this river in the neighbourhood of Marsh Lake tending to show that the distance between them was only about thirty or forty miles.

Between the Teslintoo and the Big Salmon, so called by the miners, or D'Abbadie by Schwatka, the distance is $33\frac{1}{2}$ miles, in which the Lewes preserves a generally uniform width and current. For a few miles below the Teslintoo it is a little over the ordinary width, but then contracts to about 200 yards which it maintains with little variation. The current is generally from four to five miles per hour.

The Big Salmon I found to be about 100 yards wide near the mouth, the depth not more than four or five feet, and the current, so far as could be seen, sluggish. None of the miners I met could give me any information concerning this stream; but Dr. Dawson was more fortunate, and met a man who had spent most of the summer of 1887 prospecting on it. His opinion was that it might be navigable for small stern-wheel steamers for many miles. The valley, as seen from the mouth, is wide, and gives one the impression of being occupied by a much more important stream. Looking up it, in the distance could be seen many high peaks covered with snow. As the date was August it is likely they are always so covered, which would make their probable altitude above the river 5,000 feet or more.

Dr. Dawson, in his report, incorporates fully the notes obtained from the miners. I will trespass so far on these as to say that they called the distance to a small lake near the head of the river, 190 miles from the mouth. This lake was estimated to be four miles in length; another lake about 12 miles above this was estimated to be 24 miles long, and its upper end distant only about eight miles from the Teslintoo. These distances, if correct, make this river much more important than a casual glance at it would indicate; this, however, will be more fully spoken of under its proper head.

Just below the Big Salmon the Lewes takes a bend of nearly a right angle. Its course from the junction with the Tahkeena to this point is generally a little east of north; at this point it turns to nearly west for some distance. Its course between here and its confluence with the Pelly is north-west, and, I may add, it preserves this general direction down to the confluence

with the Porcupine. The river also changes in another respect; it is generally wider, and often expands into what might be called lakes, in which are islands. Some of the lakes are of considerable length and well timbered.

To determine which channel is the main one, that is, which carries the greatest volume of water, or is best available for the purposes of navigation among these islands, would require more time than I could devote to it on my way down; consequently I cannot say more than that I have no reason to doubt that a channel giving six feet or more of water could easily be found. Whenever, in the main channel, I had reason to think the water shallow, I tried it with my paddle, but always failed to find bottom, which gives upwards of six feet. Of course, I often found less than this, but not in what I considered the main channel.

Thirty-six and a quarter miles below the Big Salmon, the Little Salmon—the Daly of Schwatka—enters the Lewes. This river is about 60 yards wide at the mouth, and not more than two or three feet in depth. The water is clear and of a brownish hue; there is not much current at the mouth, nor as far as can be seen up the stream. The valley which, from the mouth, does not appear extensive, bears north-east for some distance, when it appears to turn more to the east. Six or seven miles up, and apparently on the north side, some high cliffs of red rock, apparently granite, can be seen. It is said that some miners have prospected this stream, but I could learn nothing definite about it.

Lewes River makes a turn here to the south-west, and runs in that direction six miles, when it again turns to the north-west for seven miles, and then makes a short, sharp turn to the south and west around a low sandy point, which will, at some day in the near future, be cut through by the current, which will shorten the river three or four miles.

Eight miles below Little Salmon River, a large rock called the Eagle's Nest, stands up in a gravel slope on the easterly bank of the river. It rises about five hundred feet above the river, and is composed of a light grey stone. What the character of this rock is I could not observe, as I saw it only from the river, which is about a quarter of a mile distant. On the westerly side of the river there are two or three other isolated masses of apparently the same kind of rock. One of them might appropriately be called a mountain; it is south-west from the Eagle's Nest, and distant from it about three miles.

Thirty-two miles below Eagle's Nest Rock, Nordenskiold River enters from the west. It is an unimportant stream, being not more than one hundred and twenty feet wide at the mouth, and only a few inches deep. The valley, as far as can be seen, is not extensive, and, being very crooked, it is hard to tell what its general direction is.

The Lewes, between the Little Salmon and the Nordenskiold, maintains a width of from two to three hundred yards, with an occasional expansion where there are islands. It is serpentine in its course most of the way, and where the Nordenskiold joins it is very crooked, running several times under a hill, named by Schwatka Tantalus Butte, and in other places leaving it, for a distance of eight miles. The distance across from point to point is only half a mile.

Below this to Five Finger Rapids, so-called from the fact that five large masses of rock stand in mid-channel, the river assumes its ordinary straightness and width, with a current from four to five miles per hour. I have already described Five Finger Rapids; I do not think they will prove any-

thing more than a slight obstruction in the navigation of the river. A boat of ordinary power would probably have to help herself up with windlass and line in high water.

Below the rapids, for about two miles, the current is strong—probably six miles per hour—but the water seems to be deep enough for any boat that is likely to navigate it.

Six miles below this, as already noticed, Rink Rapids are situated. They are of no great importance, the westerly half of the stream only being obstructed. The easterly half is not in any way affected, the current being smooth and the water deep.

Below Five Finger Rapids about two miles a small stream enters from the east. It is called by Dr. Dawson Tatshun River. It is not more than 30 or 40 feet wide at the mouth, and contains only a little clear, brownish water. Here I met the only Indians seen on the river between Teslinto and Stewart Rivers. They were engaged in catching salmon at the mouth of the Tatshun, and were the poorest and most unintelligent Indians it has ever been my lot to meet. It is needless to say that none of our party understood anything they said, as they could not speak a word of any language but their own. I tried by signs to get some information from them about the stream they were fishing in, but failed. I tried in the same way to learn if there were any more Indians in the vicinity, but again utterly failed. I then tried by signs to find out how many days it took to go down to Pelly River, but although I have never known these signs to fail in eliciting information in any other part of the territory, they did not understand. They appeared to be alarmed by our presence; and, as we had not yet been assured as to the rumour concerning the trouble between the miners and Indians, we felt a little apprehensive, but being able to learn nothing from them we had to put our fears aside and proceed blindly.

Between Five Finger Rapids and Pelly River, fifty-eight and a-half miles, no streams of any importance enter the Lewes; in fact, with the exception of the Tatshun, it may be said that none at all enter.

About a mile below Rink Rapids the river spreads out into a lake-like expanse, with many islands; this continues for about three miles, when it contracts to something like the usual width; but bars and small islands are very numerous all the way to Pelly River. About five miles above Pelly River there is another lake-like expanse filled with islands. The river here for three or four miles is nearly a mile wide, and so numerous and close are the islands that it is impossible to tell when floating among them where the shores of the river are. The current, too, is swift, leading one to suppose the water shallow; but I think even here a channel deep enough for such boats as will navigate this part of the river can be found. Schwatka named this group of islands "Ingersoll Islands."

At the mouth of the Pelly the Lewes is about half a mile wide, and here too there are many islands, but not in groups as at Ingersoll Islands.

About a mile below the Pelly, just at the ruins of Fort Selkirk, the Yukon was found to be 565 yards wide; about two-thirds being ten feet deep, with a current of about four and three-quarter miles per hour; the remaining third was more than half taken up by a bar, and the current between it and the south shore was very slack.

Pelly River at its mouth is about two hundred yards wide, and continues

this width as far up as could be seen. Dr. Dawson made a survey and examination of this river, which will be found in his report already cited, "Yukon District and Northern British Columbia."

Just here for a short distance the course of the Yukon is nearly west, and on the south side, about a mile below the mouth of the Lewes, stands all that remains of the only trading post ever built by white men in the district. This post was established by Robert Campbell, for the Hudson's Bay Company, in the summer of 1848. It was first built on the point of land between the two rivers, but this location proving untenable on account of flooding by ice jams in the spring, it was, in the season of 1852, moved across the river to where the ruins now stand. It appears that the houses composing the post were not finished when the Indians from the coast on Chilkat and Chilkoot Inlets came down the river to put a stop to the competitive trade which Mr. Campbell had inaugurated, and which they found to seriously interfere with their profits. Their method of trade appears to have been then pretty much as it is now—very onesided. What they found it convenient to take by force they took, and what it was convenient to pay for at their own price they paid for.

Rumours had reached the post that the coast Indians contemplated such a raid, and in consequence the native Indians in the vicinity remained about nearly all summer. Unfortunately, they went away for a short time, and during their absence the coast Indians arrived in the early morning, and surprised Mr. Campbell in bed. They were not at all rough with him, but gave him the privilege of leaving the place within twenty-four hours, after which he was informed that he was liable to be shot if seen by them in the locality. They then pillaged the place and set fire to it, leaving nothing but the remains of the two chimneys which are still standing. This raid and capture took place on the 1st August, 1852.

Mr. Campbell dropped down the river, and met some of the local Indians who returned with him, but the robbers had made their escape. I have heard that the local Indians wished to pursue and overtake them, but to this Mr. Campbell would not consent. Had they done so it is probable that not many of the raiders would have escaped, as the superior local knowledge of the natives would have given them an advantage difficult to estimate, and the confidence and spirit derived from the aid and presence of a white man or two would be worth much in such a conflict.

Mr. Campbell went on down the river until he met the outfit for his post on its way up from Fort Yukon, which he turned back. He then ascended the Pelly, crossed to the Liard, and reached Fort Simpson, on the Mackenzie, late in October.

Mr. Campbell's first visit to the site of Fort Selkirk was made in 1840, under instructions from Sir George Simpson, then Governor of the Hudson's Bay Company. He crossed from the head waters of the Liard to the waters of the Pelly. It appears the Pelly where he struck it, was a stream of considerable size, for he speaks of its appearance when he first saw it from "Pelly Banks," the name given the bank from which he first beheld it, as a "splendid river in the distance." In June, 1843, he descended the Pelly to its confluence with the larger stream, which he named the "Lewes." Here he found many families of the native Indians—"Wood Indians," he called them. These people conveyed to him, as best they could by word and sign, the dangers that would attend a further descent of the river, representing that the country

below theirs was inhabited by a tribe of fierce cannibals, who would assuredly kill and eat them. This so terrified his men that he had to return by the way he came, pursued, as he afterwards learned, by the Indians, who would have murdered himself and party had they got a favourable opportunity. Thus it was not until 1850 that he could establish, what he says he all along believed, "that the Pelly and Yukon were identical." This he did by descending the river to where the Porcupine joins it, and where in 1847 Fort Yukon was established by Mr. A. H. Murray for the Hudson's Bay Company.

With reference to the tales told him by the Indians of bad people outside of their country, I may say that Mackenzie tells pretty much the same story of the Indians on the Mackenzie when he discovered and explored that river in 1789. He had the advantage of having Indians along with him whose language was radically the same as that of the people he was coming among, and his statements are more explicit and detailed. Everywhere he came in contact with them they manifested, first, dread of himself and party, and when friendship and confidence were established they nearly always tried to detain him by representing the people in the direction he was going as unnaturally bloodthirsty and cruel, sometimes asserting the existence of monsters with supernatural powers, as at Manitou Island, a few miles below the present Fort Good Hope, and the people on a very large river far to the west of the Mackenzie, probably the Yukon, they described to him as monsters in size, power and cruelty.

In our own time, after the intercourse that there has been between them and the whites, more than a suspicion of such unknown cruel people lurks in the minds of many of the Indians. It would be futile for me to try to ascribe an origin for these fears, my knowledge of their language and idiosyncrasies being so limited.

Nothing more was ever done in the vicinity of Fort Selkirk* by the Hudson's Bay Company after these events, and in 1869 the Company was ordered by Capt. Charles W. Raymond, who represented the United States Government, to evacuate the post at Fort Yukon, he having found that it was west of the 141st meridian. The post was occupied by the Company, however, for some time after the receipt of this order, and until Rampart House was built, which was intended to be on British territory, and to take the trade previously done at Fort Yukon.

Under present conditions the Company cannot very well compete with the Alaska Commercial Company, whose agents do the only trade in the district,† and they appear to have abandoned—for the present at least—all attempt to do any trade nearer to it than Rampart House, to which point, notwithstanding the distance and difficulties in the way, many of the Indians on the Yukon make a trip every two or three years to procure goods in exchange for their furs. The clothing and blankets brought in by the Hudson's Bay Company they claim are much better than those traded on their own river by the Americans. Those of them that I saw who had any English blankets exhibited them with pride, and exclaimed "good." They point to an American blanket in contempt, with the remark "no good," and speak of their clothing in the same way.

*This is now a winter port for steamboats of the North American Transportation and Trading Company, plying the Yukon and its tributaries. There is also a trading post here owned by Harper who was at one time of the firm of Harper & McQuestion, traders.

†Since the date of this report the North American Transportation and Trading Company, better known in the Yukon Valley as "Captain Healy's Company" has established a number of posts on the river.

On many maps of Alaska a place named "Reed's House" is shown on or near the upper waters of Stewart River. I made enquiries of all whom I thought likely to know anything concerning this post, but failed to elicit any information showing that there ever had been such a place. I enquired of Mr. Reid, who was in the Company's service with Mr. Campbell at Fort Selkirk, and after whom I thought, possibly, the place had been called, but he told me he knew of no such post, but that there was a small lake at some distance in a northerly direction from Fort Selkirk, where fish were procured. A sort of shelter had been made at that point for the fishermen, and a few furs might have been obtained there, but it was never regarded as a trading post.

Below Fort Selkirk, the Yukon River is from five to six hundred yards broad, and maintains this width down to White River, a distance of 96 miles. Islands are numerous, so much so that there are very few parts of the river where there are not one or more in sight. Many of them are of considerable size, and nearly all are well timbered. Bars are also numerous, but almost all are composed of gravel, so that navigators will not have to complain of shifting sand bars. The current as a general thing, is not so rapid as in the upper part of the river, averaging about four miles per hour. The depth in the main channel was always found to be more than six feet.

From Pelly River to within twelve miles of White River, the general course of the river is a little north of west; it then turns to the north, and the general course as far as the site of Fort Reliance is due north.

White River enters the main river from the west. At the mouth it is about two hundred yards wide, but a great part of it is filled with ever-shifting sand-bars, the main volume of water being confined to a channel not more than one hundred yards in width. The current is very strong, certainly not less than eight miles per hour. The colour of the water bears witness to this, as it is much the muddiest that I have ever seen.*

I had intended to make a survey of part of this river as far as the International Boundary, and attempted to do so; but after trying for over half a day, I found it would be a task of much labour and time, altogether out of proportion to the importance of the end sought, and therefore abandoned it. The Valley as far as can be seen from the mouth, runs about due west for a distance of eight miles; it then appears to bear to the south-west; it is about two miles wide where it joins the Pelly valley and apparently keeps the same width as far as it can be seen.

Mr. Harper, of the firm of Harper, McQuestion & Co., went up this river with sleds in the fall of 1872, a distance of fifty or sixty miles. He describes it as possessing the same general features all the way up, with much clay soil along its banks. Its general course, as sketched by him on a map of mine, is for a distance of about thirty miles a little north-west, thence south-west thirty or thirty-five miles, when it deflects to the north-west running along the base of a high mountain ridge. If the courses given are correct it must rise somewhere near the head of Forty Mile River; and if so, its length is not at all in keeping with the volume of its discharge, when compared with the known length and discharge of other rivers in the territory. Mr. Harper mentioned an extensive flat south of the mountain range spoken of, across

* The White River very probably flows over volcanic deposits as its sediments would indicate; no doubt this would account for the discolouration of its waters. The volcanic ash appears to cover a great extent of the Upper Yukon basin drained by the Lewes and Pelly Rivers. Very full treatment of the subject is given by Dr. Dawson, in his report entitled "Yukon District and Northern portion of British Columbia."

which many high mountain peaks could be seen. One of these he thought must be Mount St. Elias, as it overtopped all the others; but as Mount St. Elias is about one hundred and eighty miles distant, his conclusion is not tenable. From his description of this mountain it must be more than twice the height of the highest peaks seen anywhere on the lower river, and consequently must be ten or twelve thousand feet above the sea. He stated that the current in the river was very swift, as far as he ascended, and the water muddy. The water from this river, though probably not a fourth of the volume of the Yukon, discolours the water of the latter completely; and a couple of miles below the junction the whole river appears almost as dirty as White River.

Between White and Stewart Rivers, ten miles, the river spreads out to a mile and upwards in width, and is a maze of islands and bars. The survey was carried down the easterly shore, and many of the channels passed through barely afforded water enough to float the canoes. The main channel is along the westerly shore, down which the large boat went, and the crew reported plenty of water.

Stewart River enters from the east in the middle of a wide valley, with low hills on both sides, rising on the north side in steps or terraces to distant hills of considerable height. The river half a mile or so above the mouth, is two hundred yards in width. The current is slack and the water shallow and clear, but dark coloured.

While at the mouth I was fortunate enough to meet a miner who had spent the whole of the summer of 1887 on the river and its branches prospecting and exploring. He gave me a good deal of information of which I give a summary. He is a native of New Brunswick, Alexander McDonald by name, and has spent some years mining in other places, but was very reticent about what he had made or found. Sixty or seventy miles up the Stewart a large creek enters from the south which he called Rose Bud Creek or River, and thirty or forty miles further up a considerable stream flows from the north-east, which appears to be Beaver River, as marked on the maps of that part of the country. From the head of this stream he floated down on a raft taking five days to do so. He estimated his progress at forty or fifty miles each day, which gives a length of from two hundred to two hundred and fifty miles. This is probably an over estimate, unless the stream is very crooked, which, he stated, was not the case. As much of his time would be taken up in prospecting, I should call thirty miles or less a closer estimate of his progress. This river is from fifty to eighty yards wide and was never more than four or five feet deep, often being not more than two or three; the current, he said, was not at all swift. Above the mouth of this stream the main river is from one hundred to one hundred and thirty yards wide, with an even current and clear water. Sixty or seventy miles above the last mentioned branch another large branch joins, which is possibly the main river. At the head of it he found a lake nearly thirty miles long, and averaging a mile and a half in width, which he called Mayo Lake, after one of the partners in the firm of Harper, McQuestion & Co.

Thirty miles or so above the forks on the other branch there are falls, which McDonald estimated to be from one to two hundred feet in height. I met several parties who had seen these falls, and they corroborate this estimate of their height. McDonald went on past the falls to the head of this branch and found terraced gravel hills to the west and north; he crossed them to the

north and found a river flowing northward. On this he embarked on a raft and floated down it for a day or two, thinking it would turn to the west and join the Stewart, but finding it still continuing north, and acquiring too much volume to be any of the branches he had seen while passing up the Stewart, he returned to the point of his departure, and after prospecting among the hills around the head of the river, he started westward, crossing a high range of mountains composed principally of shales with many thin seams of what he called quartz, ranging from one to six inches in thickness.

On the west side of this range he found a river flowing out of what he called Mayo Lake, and crossing this got to the head of Beaver River, which he descended as before mentioned.

It is probable the river flowing northwards, on which he made a journey and returned, was a branch of Peel River. He described the timber on the gravel terraces of the watershed as small and open. He was alone in this unknown wilderness all summer, not seeing even any of the natives. There are few men so constituted as to be capable of isolating themselves in such a manner. Judging from all I could learn it is probable a light-draught steam-boat could navigate nearly all of Stewart River and its tributaries.

From Stewart River to the site of Fort Reliance,* seventy-three and a quarter miles, the Yukon is broad and full of islands. The average width is between a half and three quarters of a mile, but there are many expansions where it is over a mile in breadth; however, in these places it cannot be said that the waterway is wider than at other parts of the river, the islands being so large and numerous. In this reach no streams of any importance enter.

About thirteen miles below Stewart River a large valley joins that of the river, but the stream occupying it is only a large creek. This agrees in position with what has been called Sixty Mile Creek, which was supposed to be about that distance above Fort Reliance, but it does not agree with descriptions which I received of it, moreover as Sixty Mile Creek is known to be a stream of considerable length, this creek would not answer its description.

Twenty-two and a half miles from Stewart River another and larger creek enters from the same side; it agrees with the descriptions of Sixty Mile Creek, and I have so marked it on my map. This stream is of no importance, except for what mineral wealth may be found on it.†

* This was at one time a trading post occupied by Messrs. Harper & McQuestion.

† Sixty Mile Creek is about one hundred miles long, very crooked, with a swift current and many rapids, and is therefore not easy to ascend.

Miller, Glacier, Gold, Little Gold, and Bedrock Creeks are all tributaries of Sixty Mile. Some of the richest discoveries in gold so far made in the interior since 1894 have been upon these creeks, especially has this been the case upon the two first mentioned. There is a claim upon Miller Creek owned by Joseph Boudreau from which over \$100,000 worth of gold is said to have been taken out.

Freight for the mines is taken up Forty Mile Creek in summer for a distance of 30 miles, then portaged across to the heads of Miller and Glacier Creeks. In the winter it is hauled in by dogs.

The trip from Cudahy to the post at the mouth of Sixty Mile River is made by ascending Forty Mile River a small distance, making a short portage to Sixty Mile River and running down with its swift current. Coming back on the Yukon, nearly the whole of the round trip is made down stream.

Indian Creek enters the Yukon from the east about 30 miles below Sixty Mile. It is reported to be rich in gold, but owing to the scarcity of supplies its development has been retarded.

At the mouth of Sixty Mile Creek a townsite of that name is located, it is the headquarters for upwards of 100 miners, and where they more or less assemble in the winter months.

Messrs. Harper & Co. have a trading post and a saw-mill on an island at the mouth of the creek, both of which are in charge of Mr. J. Ladue, one of the partners of the firm, and who was at one time in the employ of the Alaska Commercial Company.

Six and a half miles above Fort Reliance the Thron-Diuck* (Klondyke) of the River Indians (Deer River of Schwatka) enters from the east. It is a small river about forty yards wide at the mouth, and shallow; the water is clear and transparent, and of beautiful blue colour. The Indians catch great numbers of salmon here. They had been fishing shortly before my arrival, and the river, for some distance up, was full of salmon traps.

A miner had prospected up this river for an estimated distance of forty miles, in the season of 1887. I did not see him, but got some of his information at second hand. The water being so beautifully clear I thought it must come through a large lake not far up; but as far as he had gone no lakes were seen. He said the current was comparatively slack, with an occasional "ripple" or small rapid. Where he turned back the river is surrounded by high mountains, which were then covered with snow, which accounts for the purity and clearness of the water.

It appears that the Indians go up this stream a long distance to hunt, but I could learn nothing definite as to their statements concerning it.

Twelve and a half miles below Fort Reliance, the Chandindu River, as named by Schwatka, enters from the east. It is thirty to forty yards wide at the mouth, very shallow, and for half a mile up is one continuous rapid. Its valley is wide and can be seen for a long distance looking north-eastward from the mouth.

Between Fort Reliance and Forty Mile River (called Cone Hill River by Schwatka) the Yukon assumes its normal appearance, having fewer islands and being narrower, averaging four to six hundred yards wide, and the current being more regular. This stretch is forty-six miles long, but was estimated by the traders at forty, from which the Forty Mile River took its name.

Forty Mile River† joins the main river from the west. Its general course as far up as the International Boundary, a distance of twenty-three miles, is south-west; after this it is reported by the miners to run nearer south. Many of them claim to have ascended this stream for more than one hundred miles, and speak of it there as quite a large river. They say that at that distance it has reached the level of the plateau, and the country adjoining it they describe as flat and swampy, rising very little above the river. It is only a short distance across to the Tanana River—a large tributary of the Yukon—which is here described as an important stream. However, only about twenty-three miles of Forty Mile River are in Canada; and the upper part of it and its relation to other rivers in the district have no direct interest for us.

Forty Mile River is one hundred to one hundred and fifty yards wide at the mouth, and the current is generally strong, with many small rapids.

* Dawson City is situated at the mouth of the Thron-Diuck, and although it was located only a few months ago it is the scene of great activity. Very rich deposits of gold have been lately found on Bonanza Creek and other affluents of the Thron-Diuck, now called Klondyke.

† Forty Mile townsite is situated on the south side of the Forty Mile River at its junction with the Yukon. The Alaska Commercial Company has a station here which was for some years in charge of L. N. McQuestion; there are also several blacksmith shops, restaurants, billiard halls, bakeries, an opera house and so on. Rather more than half a mile below Forty Mile townsite the town of Cudahy was founded on the north side of Forty Mile River in the summer of 1892. It is named after a well known member of the North American Transportation and Trading Company. In population and extent of business the town bears comparison with its neighbour across the river. The opposition in trade has been the means of very materially reducing the cost of supplies and living. The North American Transportation and Trading Company has erected a saw-mill and some large warehouses. Fort Constantine was established here immediately upon the arrival of the Mounted Police detachment in the latter part of July, 1895. It is described further on in an extract from Inspector Constantine's supplementary report for the year 1895.

Eight miles up is the so-called cañon; it is hardly entitled to that distinctive name, being simply a crooked contraction of the river, with steep rocky banks, and on the north side there is plenty of room to walk along the beach. At the lower end of the cañon there is a short turn and swift water in which are some large rocks; these cannot generally be seen, and there is much danger of striking them running down in a boat. At this point several miners have been drowned by their boats being upset in collision with these rocks. It is no great distance to either shore, and one would think an ordinary swimmer would have no difficulty in reaching land; but the coldness of the water soon benumbs a man completely and renders him powerless. In the summer of 1887, an Indian, from Tanana, with his family, was coming down to trade at the post at the mouth of Forty Mile River; his canoe struck on these rocks and upset, and he was thrown clear of the canoe, but the woman and children clung to it. In the rough water he lost sight of them, and concluded that they were lost: it is said he deliberately drew his knife and cut his throat, thus perishing, while his family were hauled ashore by some miners. The chief of the band to which this Indian belonged came to the post and demanded pay for his loss, which he contended was occasioned by the traders having moved from Belle Isle to Forty Mile, thus causing them to descend this dangerous rapid, and there is little doubt that had there not been so many white men in the vicinity, he would have tried to enforce his demand.

The length of the so-called cañon is about a mile. Above it the river up to the boundary is generally smooth, with swift current and an occasional ripple. The amount of water discharged by this stream is considerable; but there is no prospect of navigation, it being so swift and broken by small rapids.

From Forty Mile River to the boundary the Yukon preserves the same general character as between Fort Reliance and Forty Mile, the greatest width being about half a mile and the least about a quarter.

Fifteen miles below Forty Mile River a large mass of rock stands on the east bank. This was named by Schwatka "Roquette Rock," but is known to the traders as Old Woman Rock; a similar mass, on the west side of the river, being known as Old Man Rock.

The origin of these names is an Indian legend, of which the following is the version given to me by the traders:—

In remote ages there lived a powerful shaman, pronounced Tshaumen by the Indians, this being the local name for what is known as medicine man among the Indians farther south and east. The Tshaumen holds a position and exercises an influence among the people he lives with, something akin to the wise men or magi of olden times in the East. In this powerful being's locality there lived a poor man who had the great misfortune to have an inveterate scold for a wife. He bore the infliction for a long time without murmuring, in hopes that she would relent, but time seemed only to increase the affliction; at length, growing weary of the unceasing torment, he complained to the Tshaumen, who comforted him, and sent him home with the assurance that all would soon be well.

Shortly after this he went out to hunt, and remained away for many days endeavouring to get some provisions for home use, but without avail; he returned weary and hungry, only to be met by his wife with a more than usually violent outburst of scolding. This so provoked him that he gathered all his strength and energy for one grand effort and gave her a kick that sent her clean across the river. On landing she was converted into the mass of

rock which remains to this day a memorial of her viciousness and a warning to all future scolds. The metamorphosis was effected by the Tshaumen, but how the necessary force was acquired to send her across the river (here about half a mile wide), or whether the kick was administered by the Tshaumen or the husband, my narrator could not say. He was altogether at a loss to account for conversion of the husband into the mass of rock on the west side of the river; nor can I offer any theory unless it is that he was *petrified* by astonishment at the result.

Such legends as this would be of interest to ethnologists if they could be procured direct from the Indians, but repeated by men who have little or no knowledge of the utility of legendary lore, and less sympathy with it, they lose much of their value.

Between Forty Mile River and the boundary line no stream of any size joins the Yukon; in fact there is only one stream, which some of the miners have named Sheep Creek, but as there is another stream further down the river, called by the same name, I have named it Coal Creek. It is five miles below Forty Mile, and comes in from the east, and is a large creek, but not at all navigable. On it some extensive coal seams were seen, which will be more fully referred to further on.

* * * * *

At the boundary the river is somewhat contracted, and measures only 1,280 feet across in the winter; but in summer, at ordinary water level, it would be about one hundred feet wider. Immediately below the boundary it expands to its usual width, which is about 2,000 feet. The area of the cross section measured is 22,268 feet, the sectional area of the Teslintoo, as determined by Dr. Dawson and already referred to is 3,809 feet; that of the Lewes at the Teslintoo from the same authority, is 3,015 feet. Had the above cross-section been reduced to the level at which the water ordinarily stands during the summer months, instead of to the height at which it stood in the middle of September when it was almost at its lowest, the sectional area would have been at least 50 per cent. more, and at spring flood level about double the above area.

It is a difficult matter to determine the actual discharge at the place of the cross-section, owing to the irregularity in the depth and current, the latter being in the deep channel at the east side, when I tried it in September, approximately 4.8 miles per hour; while on the bar in midstream it was not more than 2.5 miles per hour; and between the bar and the westerly shore there was very little current.

The river above this for some miles was no better for the purpose of cross-section measurement. At the boundary it is narrow and clear of bars and islands for some miles, but here I did not have an opportunity to determine the rate of the current before the river froze up, and after it froze the drift ice was jammed and piled so high that it would have been an almost endless task to cut holes through it.

Taking the sectional area of the deep part alone and the rate of current above stated, and calculating by the approximate formulæ used by Dr. Dawson, as given in Trautwine's Engineer's Pocket-Book, p. 562, the discharge in cubic feet per second is 90,864, or about three times that of the Lewes and Teslintoo together, as determined by Dr. Dawson. The discharge of the rest of the channel would approximate only 14,000 feet—in all about 105,000 feet. At summer level with an increased sectional area and current it would approxi-

mate 60 per cent. more, or close to 170,000 feet per second. At high water level it would at least be eight to ten feet deeper, and we can only conjecture what the current would be, but I think it is safe to assume at least 80 per cent. more discharge, which would give us roughly 300,000 feet per second. For the sake of comparison, I give the discharge of the St. Lawrence and Ottawa Rivers, being the mean of the years 1867 to 1882: St. Lawrence, mean 900,000 feet; Ottawa, at Grenville, mean 85,000 feet. The point where cross-section was measured is less than seven hundred miles from the head of Lewes River, and from the head of the Teslintoo probably eight hundred.

The current, from the boundary down to the confluence with the Porcupine, is said to be strong, and much the same as that above; from the Porcupine down for a distance of five or six hundred miles it is called medium, and the remainder easy.

On the 22nd September a small steamboat named the "New Racket" passed my camp on her way up to Forty Mile River with supplies; she was about forty feet long with nine or ten feet beam, with about two feet draught. The boat was wholly taken up with engine and boiler, the berths for the crew being over the engine room. The propelling power was a stern wheel, driven by two engines of large size for such a small boat. It was claimed for her by her captain, A. Mayo, of the firm of Harper, McQuestion & Co., that she could make 10 miles an hour in dead water. She was then 22 days out from St. Michael Island, near the mouth of the river. Mr. Mayo claimed that this was longer than usual, on account of the boiler tubes being out of order and leaking badly, so that it was impossible to keep more than fifty pounds pressure, while that generally used was about double. That this was true was apparent from the fact that it took her about five hours to make four miles; and at one place below my camp, she hung for over an hour without making any progress at all, nor could she pass that point until she had stopped and bottled up steam.

After reaching Forty Mile River this boat started up the stream to Stewart River, with supplies for the few miners who intended to winter there, and materials for the Indian fur trade. Some miners, who intended to spend the summer of 1888 mining on Stewart River, took passage up on her; but after trying for nearly two days it was found impossible, loaded as she was, to make any headway, so she returned, discharged her passengers, and finally reached Stewart River light. Here the owners intended to lay her up and give her a thorough overhauling before the commencement of next season's navigation. Three other steamboats which navigate the river, the "Yukon," the "St. Michael" and the "Explorer," belong to the Alaska Commercial Company. These boats are small and carry little or no freight themselves, but tow loaded barges. Their space is entirely devoted to engine and boiler, and they are driven by a stern wheel. Messrs. Harper, McQuestion & Co., expected the Alaska Commercial Company to put a larger boat on the river in the season of 1888; one that would carry one hundred and twenty to two hundred tons of freight, and make five to seven miles per hour up stream on the upper river. The other boats do not make more than three or four miles per hour, and often not that. None of these boats had passed Stewart River while I was there, nor is it probable they have since done so.

From Stewart River to the mouth of the Yukon is about 1,650 miles, and the only difficult place in all this distance is the part near the confluence with the Porcupine, which has evidently been a lake in past ages, but is now filled with islands; it is said that the current here is swift, and the channels generally narrow, rendering navigation difficult.

ROUTES.

DYEA OR TAIYA, NEAREST NAVIGABLE TERMINUS TO CHILKOOT PASS.—Elevation at summit, 3,600 feet (15 miles from salt water); nine miles from head of canoe navigation; grade of last six miles is nearly 550 feet per mile along a very rough and rocky road, which is subject to heavy storms from the winds blowing up from the sea; on other side descent not so abrupt, although steep, especially at first; eight miles from summit Lake Lindeman is reached. This pass, although the most used by miners, cannot be made into a waggon road to carry heavy traffic. Taiya or Dyea Inlet has no harbour or anchorage, but is exposed to the violent winds which blow up the Inlet.

WHITE PASS.—At the head of Skagway River, which flows into Taiya or Dyea Inlet; three miles south of the mouth of the Taiya or Dyea River; the first six miles lies along the flat of the Skagway River to point of juncture of Eastern Fork; the route ascends the cañon of the Western Fork; three miles of this is a box cañon, with precipice at upper end; must have ropes to go through on foot; River forks above cañon, Eastern Branch, the main stream, coming from ice fields 20 miles away; route follows other fork nearly due north, six miles to summit, elevation, 2,609 feet above sea; from head of the flat to the summit, 13 miles; grade varying from 150 feet to 300 feet to the mile at the end; landing-place at mouth of Skagway River, bad; holding ground, bad; no shelter from winds; from summit to the Taku Arm of Tagish Lake, 33 miles in a straight line; to Lake Bennett (if practicable), not more than ten or twelve miles. It is understood there is a number of lakes connected by rapid streams, by which, no doubt, canoes can pass. Head of Taku Arm, the head of steamboat navigation.

CHILKAT PASS.—Pyramid Harbour, near mouth of Chilkat River, though small, good, both as to holding ground and shelter from prevailing winds. The only harbour on northern part of Lynn Canal. Tidal flats of the Chilkat River are encountered one mile north of harbour, above this the river takes a north-western direction, flowing by many channels in a wide flat of sand and gravel, twenty miles up the Indian village Klukwau is reached. Here the Klahela River enters from west.

DALTON'S ROUTE.—Dalton followed the stream 15 miles up to this point; it is passable with waggons. The Chilkat and Klahela are navigable for canoes, route new, pack-trail follows Klahela to its source; thence northward, crossing (it appears) several small tributaries of the main Chilkat to the divide between the Chilkat, Altsek and Tahkeena Rivers. Distance to summit and height not known. Proceeding northward the trail continues overland a distance of 250 miles or more to Fort Selkirk at the junction of the Pelly and Yukon Rivers. Dalton gives time as nine days light, twelve to fourteen days with load.

INDIAN ROUTE.—Instead of following Klahela from its junction with the Chilkat, they follow the main Chilkat. Trail considerably to east of Dalton's. Dalton's trail not very far west of Tahkeena River. Indians say Tahkeena River comes out of a very large lake; no bad rapids. Dalton says his trail passes through bunch grass country.

GLAVE'S ROUTE.—From Chilkat River following a southern branch of the Klahela by which Glave and Dalton crossed to the Altsek River Valley in 1891 with their pack-horses; this route too circuitous.

TAKU ROUTE.—Taku Inlet, 18 miles from entrance Bishop Point to mouth of river; no good harbour or landing place; transfer point, Juneau, 12 miles from Bishop Point; Taku River contains more water than, but is otherwise similar to the Chilkat: it is possible that a steamboat drawing two feet of water could ascend the river between May and September to the Forks, 58 miles from the mouth; here two branches, south or Tuklin, north or Taku, or Slocho; trail follows Slocho eight miles to confluence Nakinah, head of canoe navigation; from mouth Nakinah follows up valley 10 miles to mouth Catkenna Creek; thence up valley of this creek four miles to Sin-Ank-Klin Creek; thence up this last $5\frac{1}{2}$ miles to the lake at the source of this creek. It may be easy to construct a road for the remainder of distance.

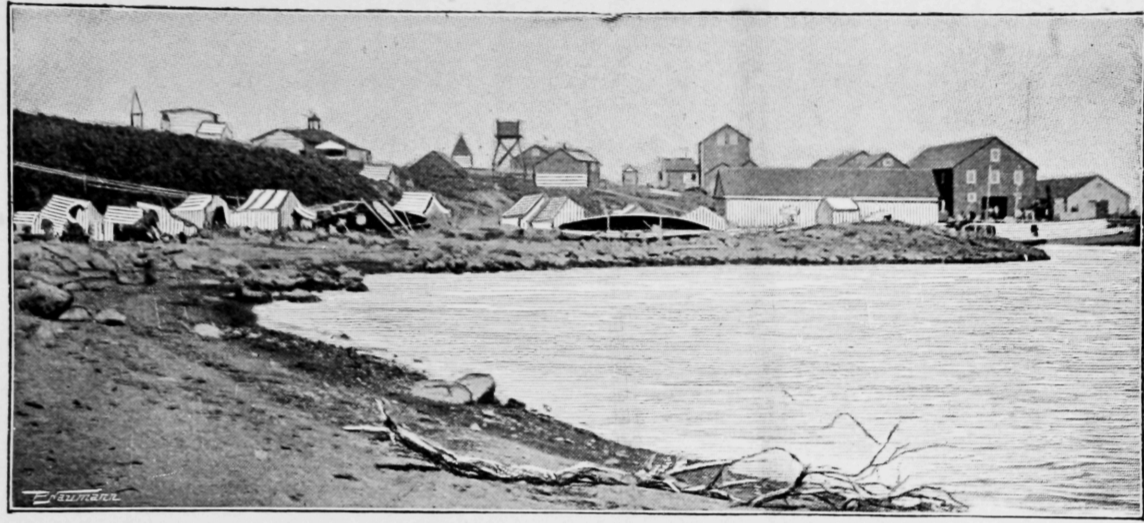
Nakinah River to summit, 25 miles from pass to waters of Teslin Lake, 25 miles from head of canoe navigation at the junction of the Slocho and Nakinah to the lake, about 70 miles; from forks Taku, 78 miles; from salt water to Teslin Lake, 136 miles; height of plateau, water shed between Nakinah River and Teslin Lake, 5,000 feet above the sea level; Teslin Lake, 2,800 feet; Hootalinqua River, about 200 miles; Ogilvie gives the average fall of Lewes and Yukon from Lake Bennett down the Forty Mile Creek, 2.41 feet per mile.

TAKU ROUTE is 111 miles from sea and rises to 5,100 feet; junction of Nakinah and Slocho Rivers, 400 feet above the sea, and from there to summit 4,700 feet in 45 miles, or 104 feet to the mile. Grade, 220 feet to mile; average for the first fifteen miles up the Nakinah, Catkenna, Sin-Ank-Klin leaves 45 feet per mile for remaining 30 miles to summit; beyond summit, 2,600 feet in a few miles.

HAYES' PASS.—5,100 feet; Ogilvie's Pass, seen from a distance of some miles, several hundred feet lower and some miles north of Hayes' and his route (Hayes'); Teslin Lake valley, a very regular trough, may afford route from upper Stickine River without climbing.

INDIAN ROUTE BY SLOCHO (2).—First, leaves Ogilvie's route at mouth of Nakinah and follows Slocho to Lake at its head; short portage to Athie Lake, which connects with Taku Arm of Tagish Lake. Tagish Lake, Mr. Ogilvie, 2,124 feet; Athie Lake, 2,200 feet; difference between Athie and Nakinah, 1,800 feet; distance 60 miles; height of land between. Second, leaves Ogilvie's track at Kateena Creek, up the Kuthie Lake to its source, thence crossing lakes, connecting with Teslin Lake.

STICKINE RIVER ROUTE.—Telegraph Creek head of navigation, 140 miles from mouth of river; flat bottom river boats during summer months; route of the Telegraph exploration runs north-westerly along valley of the Tahltan River to its head; thence across source of the Tuklin; South-west Branch Taku joins route at Forks of Taku; south fork Taku enclosed between high hills and mountains, forming inland border of Coast Range, and a range of mountains of considerable height, apparently a continuation of those lying between North Branch of Taku and Teslin Lake; this range continues approximately parallel to Coast Range down the Stickine River, at Great Canyon a few miles above Telegraph Creek: Tahltan River to the West of these; Upper Valley of Tooga, or second North Fork of the Stickine, to the East. Dr. Dawson recommends road to run North from Telegraph Creek to cross Tahltan; then follow valley of certain tributary of the Tahltan; then into Upper Valley of Tooga, probably in trough of Teslin Lake already mentioned; length of road about 150 miles.



St. Michael.
Destination of Ocean Steamers. Passengers and Freight transferred
here to River Steamers for Dawson City and other Posts.



Juneau, Alaska.

PLACER MINING REGULATIONS.

REGULATIONS governing placer mining along the Yukon River and its tributaries, in the North-West Territories, made by an Order-in-Council of the Dominion Government, dated 21st May, 1897.

INTERPRETATION.

“Bar diggings” shall mean any part of a river over which the water extends when the water is in its flooded state, and which is not covered at low water.

Mines on benches shall be known as “bench diggings,” and shall for the purpose of defining the size of such claims be excepted from dry diggings.

“Dry diggings” shall mean any mine over which a river never extends.

“Miner” shall mean a male or female over the age of eighteen, but not under that age.

“Claim” shall mean the personal right of property in a placer mine or diggings during the time for which the grant of such mine or diggings is made.

“Legal post” shall mean a stake standing not less than four feet above the ground, and squared on four sides for at least one foot from the top. Both sides so squared shall measure at least four inches across the face. It shall also mean any stump or tree cut off and squared or faced to the above height and size.

“Close season” shall mean the period of the year during which placer mining is generally suspended. The period to be fixed by the Gold Commissioner in whose district the claim is situated.

“Locality” shall mean the territory along a river (tributary of the Yukon River) and its affluents.

“Mineral” shall include all minerals whatsoever other than coal.

NATURE AND SIZE OF CLAIMS.

1. “Bar diggings,” a strip of land 100 feet wide at high water mark, and thence extending into the river to its lowest water level.

2. The sides of a claim for bar digging shall be two parallel lines, run nearly as possible at right angles to the stream, and shall be marked by four legal posts, one at each end of the claim at or about high water mark, also one at each end of the claim at or about the edge of water. One of the posts at high water mark shall be legibly marked with the name of the miner and the date upon which the claim was staked.

3. Dry diggings shall be 100 feet square, and shall have placed at each of its four corners a legal post, upon one of which shall be legibly marked the name of the miner and the date upon which the claim was staked.

4. Creek and river claims shall be 100 feet long, measured in the direction of the general course of the stream, and shall extend in width from base to base of the hill or bench on each side, but when the hill or benches are less than 100 feet apart, the claim may be 100 feet in depth. The sides of a claim shall be two parallel lines run as nearly as possible at right angles to

the stream. The sides shall be marked with legal posts at or about the edge of the water and at the rear boundaries of the claim. One of the legal posts at the stream shall be legibly marked with the name of the miner and the date upon which the claim was staked.

5. Bench claims shall be 100 feet square.

6. In defining the size of claims, they shall be measured horizontally irrespective of inequalities on the surface of the ground.

7. If any person or persons shall discover a new mine and such discovery shall be established to the satisfaction of the Gold Commissioner, a claim for bar diggings 750 feet in length may be granted.

A new stratum of auriferous earth or gravel situated in a locality where the claims are abandoned shall for this purpose be deemed a new mine, although the same locality shall have been previously worked at a different level.

8. The forms of application for a grant for placer mining and the grant of the same shall be those contained in forms "H" and "I" in the schedule hereto.

9. A claim shall be recorded with the Gold Commissioner in whose district it is situated within three days after the location thereof if it is located within ten miles of the Commissioner's office. One extra day shall be allowed for making such record for every additional ten miles or fraction thereof.

10. In the event of the absence of the Gold Commissioner from his office, entry for a claim may be granted by any person whom he may appoint to perform his duties in his absence.

11. Entry shall not be granted for a claim which has not been staked by the applicant in person in the manner specified in these regulations. An affidavit that the claim was staked out by the applicant shall be embodied in form "H" of the schedule hereto.

12. An entry fee of \$15 shall be charged the first year, and an annual fee of \$100 for each of the following years. This provision shall apply to locations for which entries have already been granted.

13. After the recording of a claim the removal of any post by the holder thereof or by any person acting in his behalf for the purpose of changing the boundaries of his claim shall act as a forfeiture of the claim.

14. The entry of every holder of a grant for placer mining must be renewed and his receipt relinquished and replaced every year, the entry fee being paid each time.

15. No miner shall receive a grant of more than one mining claim in the same locality, but the same miner may hold any number of claims by purchase, and any number of miners may unite to work their claims in common upon such terms as they may arrange, provided such agreement be registered with the Gold Commissioner, and a fee of five dollars paid for each registration.

16. Any miner or miners may sell, mortgage, or dispose of his or their claims, provided such disposal be registered with, and a fee of two dollars paid to the Gold Commissioner, who shall thereupon give the assignee a certificate in Form "J" in the schedule hereto.

17. Every miner shall, during the continuance of his grant, have the exclusive right of entry upon his own claim, for the miner-like working

thereof, and the construction of a residence thereon, and shall be entitled exclusively to all the proceeds realized therefrom; but he shall have no surface rights therein; and the Gold Commissioner may grant to the holders of adjacent claims such right of entry thereon as may be absolutely necessary for the working of their claims, upon such terms as may to him seem reasonable. He may also grant permits to miners to cut timber thereon for their own use, upon payment of the dues prescribed by the regulations in that behalf.

18. Every miner shall be entitled to the use of so much of the water naturally flowing through or past his claim, and not already lawfully appropriated, as shall, in the opinion of the Gold Commissioner be necessary for the due working thereof; and shall be entitled to drain his own claim free of charge.

19. A claim shall be deemed to be abandoned and open to occupation and entry by any person when the same shall have remained unworked on working days by the grantee thereof or by some person on his behalf for the space of 72 hours, unless sickness or other reasonable cause be shown to the satisfaction of the Gold Commissioner, or unless the grantee is absent on leave given by the Commissioner, and the Gold Commissioner upon obtaining evidence satisfactory to himself that this provision is not being complied with, may cancel the entry given for the claim.

20. If the land upon which a claim has been located is not the property of the Crown, it will be necessary for the person who applied for entry to furnish proof that he has acquired from the owner of the land the surface rights before entry can be granted.

21. If the occupier of the lands has not received a patent therefor, the purchase money of the surface rights must be paid to the Crown, and a patent of the surface rights will issue to the party who acquired the mining rights. The money so collected will either be refunded to the occupier of the land, when he is entitled to a patent therefor, or will be credited to him on account of payment for land.

22. When the party obtaining the mining rights to lands cannot make an arrangement with the owner, or his agent or the occupant thereof for the acquisition of his surface rights; it shall be lawful for him to give notice to the owner or his agent or the occupier to appoint an arbitrator to act with another arbitrator named by him, in order to award the amount of compensation to which the owner or occupant shall be entitled. The notice mentioned in this section shall be according to a form to be obtained upon application from the Gold Commissioner for the district in which the lands in question lie, and shall, when practicable, be personally served on such owner, or his agent if known, or occupant; and after reasonable efforts have been made to effect personal service, without success, then such notice shall be served by leaving it at, or sending by registered letter to, the last place of abode of the owner, agent, or occupant. Such notice shall be served upon the owner or agent within a period to be fixed by the Gold Commissioner before the expiration of the time limited in such notice. If the proprietor refuses or declines to appoint an arbitrator, or when, for any other reason no arbitrator is appointed by the proprietor in the time limited therefor in the notice provided for by this section, the Gold Commissioner for the district in which the lands in question lie, shall, on being satisfied by affidavit that such notice has come to the knowledge of such owner, agent or occupant, or that such owner, agent or occupant wilfully evades the service of such notice, or cannot be found, and

that reasonable efforts have been made to effect such service, and that the notice was left at the last place of abode of such owner, agent or occupant, appoint an arbitrator on his behalf.

23. (a.) All the arbitrators appointed under the authority of these regulations shall be sworn before a Justice of the Peace to the impartial discharge of the duties assigned to them, and they shall forthwith proceed to estimate the reasonable damages which the owner or occupant of such lands, according to their several interests therein, shall sustain by reason of such prospecting and mining operations.
- (b.) In estimating such damages, the arbitrators shall determine the value of the land irrespectively of any enhancement thereof from the existence of minerals therein.
- (c.) In case such arbitrators cannot agree, they may select a third arbitrator, and when the two arbitrators cannot agree upon a third arbitrator the Gold Commissioner for the district in which the lands in question lie shall select such third arbitrator.
- (d.) The award of any two such arbitrators made in writing shall be final, and shall be filed with the Gold Commissioner for the district in which the lands lie.

If any case arise for which no provision is made in these regulations, the provisions of the regulations governing the disposal of mineral lands other than coal lands approved by His Excellency the Governor-in-Council, on 9th November, 1889, shall apply.

FORM H.—APPLICATION FOR GRANT FOR PLACER MINING AND AFFIDAVIT
OF APPLICANT.

I (or we), _____ of _____ hereby apply, under the Dominion Mining Regulations, for a grant of a claim for placer mining as defined in the said regulations, in _____ (here describe locality) and I (or we) solemnly swear:

1. That I (or we) have discovered therein a deposit of (here name the metal or mineral).

2. That I (or we) am (or are) to the best of my (or our) knowledge and belief the first discoverer (or discoverers) of the said deposit; or,

3. That the said claim was previously granted to (here name the last grantee), but has remained unworked by the said grantee for not less than _____

4. That I (or we) am (or are) unaware that the land is other than vacant Dominion land.

5. That I (or we) did, on the _____ day of _____, mark out on the ground in accordance in every particular with the provisions of sub-clause (e) of clause 18 of the said mining regulations, the claim for which I (or we) make this application, and that in so doing I (or we) did not encroach on any other claim or mining location previously laid out by any other person.

6. That the said claim contains, as nearly as I (or we) could measure or estimate, an area of _____ square feet, and that the description (and sketch,

if any), of this date hereto attached, signed by me (or us) sets (or set) forth in detail, to the best of my (or our) knowledge and ability, its position, form and dimensions.

7. That I (or we) make this application in good faith, to acquire the claim for the sole purpose of mining, to be prosecuted by myself (or us) or by myself and associates, or by my (or our) assigns.

Sworn before me at this day of 18 (Signature).

FORM I.—GRANT FOR PLACER MINING.—DEPARTMENT OF THE INTERIOR.

No. Agency, 18

In consideration of the payment of five dollars, being the fee required by the provisions of the Dominion Mining Regulations, clauses four and twenty; by (A. B.) of accompanying his (or their) application No. dated , 18 , for a mining claim in (here insert description of locality)

The Minister of the Interior hereby grants to the said (A. B.) for the term of one year from the date hereof, the exclusive right of entry upon the claim (here describe in detail the claim granted) for the miner-like working thereof and the construction of a residence thereon, and the exclusive right to all the proceeds realized therefrom.

The said (A. B.) shall be entitled to the use of so much of the water naturally flowing through or past his (or their) claim, and not already lawfully appropriated, as shall be necessary for the due working thereof, and to drain his (or their) claim, free of charge.

This grant does not convey to the said (A. B.) any surface rights in the said claim, or any right of ownership in the soil covered by the said claim; and the said grant shall lapse and be forfeited unless the claim is continuously and in good faith worked by the said (A. B.) or his (or their) associates.

The rights hereby granted are those laid down in the aforesaid mining regulations, and no more, and are subject to all the provisions of the said regulations, whether the same are expressed or not.

GOLD COMMISSIONER.

FORM J.—CERTIFICATE OF THE ASSIGNMENT OF A PLACER MINING CLAIM.

DEPARTMENT OF THE INTERIOR.

No. Agency, 18

This is to certify that (B.C.) has (or have) filed an assignment in due form of dated 18 , and accompanied by a registration fee of two dollars, of the grant to (A.B.) of the right to mine in (insert description of claim)

THE YUKON DISTRICT.

for one year from the said (B.C.) 18 , This certificate entitles the
of the said (A.B.) to all the rights and privileges
assigned, that is to say to the exclusive right of entry upon the said claim in respect of the claim
the miner-like working thereof and the construction of a residence thereon, and the exclusive right to all the proceeds realised therefrom, for the
remaining portion of the year for which the said claim was granted, to the said (A.B.) , that is to say until
the day of 18 .

The said (B.C.) shall be entitled to the
use of so much of the water naturally flowing through or past his (or their)
claim and not already lawfully appropriated, as shall be necessary for the due
working thereof, and to drain the claim free of charge.

This grant does not convey to the said (B.C.)
any surface rights in the said claim, or any right of ownership
in the soil covered by the said claim; and the said grant shall lapse and
be forfeited unless the claim is continuously, and in good faith, worked by the
said (B.C.) or his (or their)
associates.

The rights hereby granted are those laid down in the Dominion Mining
Regulations, and no more, and are subject to all the provisions of the said
regulations, whether the same are expressed herein or not.

GOLD COMMISSIONER.

LATER REPORTS FROM MR. OGILVIE.

CUDAHY, 4th September, 1895.

I arrived here the evening of the 30th ultimo after a tedious journey
through much bad weather which delayed me fully 10 days. I leave for the
boundary in a day and will commence marking it at once. With reference to
the applications for land at Selkirk I may say I have not seen the applicants
as yet, as they are away. It appears to me, however, from what I have
learned, that the best policy is to sell the applicants the land they ask for.
They have all occupied and cultivated part of it for several years, raising in
their gardens such roots and vegetables as the climate will permit, on which
I will report more fully later on. There is no great prospect of any town of
importance ever being either at Cudahy or Forty Mile. There are many
mining camps now in the country and, besides, the miners find it pays well to
what they call "drift" that is quarry out the frozen gravel during the
winter, pile it up, and wash it during the spring and summer. This keeps
scores of men on their claims all winter, so that there is not that demand for
town residences during the winter that existed formerly, and consequently
town lots are at somewhat of a discount. Coarse gold and excellent prospects
have been found on the Hootalinqua (Teslin) and there will likely be a rush
there next spring. I will report more fully on that in future.

I propose, if I can close my operations here early enough next season, to
make a survey and examination of the Hootalinqua rivers and basins on my
way out to Juneau. I think this is desirable in view of the prospects of
that region.

CUDAHY, 8th January, 1896.

I have the honour to transmit the following interim report of my operations since I came into this territory:—

I have already sent out a short report from this place being fortunate enough to catch the boat here when I came down. In that report I made some remarks on the town sites in our territory; since then I have learned nothing of importance in that connection, the most noteworthy fact being that gold-bearing quartz has been found in Cone Hill which stands midway in the valley of the Forty Mile River, a couple of miles above the junction with the Yukon. The quantity in sight rivals that of the Treadwell mine on the coast, and the quality is better, so much so that it is thought it will pay well to work it even under the conditions existing here. Application has been made to purchase it, and an expert is now engaged in putting in a tunnel to test the extent. Indications in sight point to the conclusion that the whole hill is composed of this metalliferous rock. If the tests corroborate this, a stamp mill will be erected next season, which will have an important bearing on the future of this country. If this venture succeeds (as it doubtless will, for it is in the hands of parties who are able to push it), it will give permanent employment to a good many men, who with their families will form quite a community.

Apart from this I cannot see very much of a chance for speculation in buying or selling town sites; and my opinion is confirmed by the present condition of Forty Mile, which now contains very few people, the great majority of the miners remaining on their claims all winter, coming in only once or twice for supplies. Even in the case of the mine at Cone Hill being worked, only a village would be formed around it.

Outside of all such considerations, the present applicants for Forty Mile and Cudahy town sites have either directly or indirectly occupied the present sites for years, and spent thousands of dollars improving and building on them. One house erected in Forty Mile last summer is said to have cost \$10,000. It would cost between two and three thousand in Ottawa. These improvements cover so much ground that even if it were decided to lay out the town site and convey it in lots the applicants would have a claim to most of the ground they ask for.

* * * * *

A couple of coal claims have been staked and applied for, which I will survey in the spring, and at the same time make an examination of the coal area where they are. I may anticipate this to a certain extent by saying that, a few days after I reported to you last fall, I went up Coal Creek to search for this coal, to which I referred in my report of 1887 and 1888. I found it about seven miles up the creek overlying a coarse sandstone and under drift clay and gravel.

The seam is 12 feet 6 inches thick. It seems to me to be a good quality of lignite. I have packed 30 or 40 pounds of the best specimens I found a few feet in, and will send them out to you in the spring, that a test may be made. The exposure has now been staked and applied for to the agent here. I judge from the position of these coal claims that we have quite an area of coal here. Both exposures furnish, as far as external features show, the same character of coal, and are about the same level, so that it is fair to assume they are in the same seam. I will make a search in the intervening distance

to determine this when I make a survey of the claims. Coal is reported in the drift on Chandindu, about 30 miles up the river from here, which would go to show that there is another area or a continuation of this one there.

On my way down the river I saw the copper-bearing vein near Thron-Diuck (Klondyke) Creek above Fort Reliance. It does not appear to be extensive, but there are several small veins in the vicinity, and it may be that a commercially valuable deposit may be found; about 25 miles further down I found a small vein which indicates that this copper deposit is extensive.

I found a small seam of rather poor asbestos a short distance from Cudahy, and as there is quite an extensive area of serpentine around here, asbestos may yet be found of commercial value.

Very rich placer diggings are now being worked on the creeks flowing into Sixty Mile, part of which are supposed to be in Canada. I shall be able to say definitely when I produce the line that far where they are and how much we have of them.

Except in the vicinity of Forty Mile there appears to be nothing doing in the way of quartz prospecting.

Last season good placer mines were found on the Hootalinqua—Teslin of Dawson—with coarse gold in them, and there will probably be a lot of claims worked there next season. Several miners were wintering there to commence operations early in the spring. A great deal of improvement has been introduced in the working of placer diggings, which has much increased the output. The miner instead of putting in the winter months in the towns and saloons remains on his claim all winter, cutting wood in the earlier months, with which he builds fires and thaws the frozen gravel, piling it up to be washed as soon as the flow of water in the spring will permit. In this way the work is more than doubled, but as the supply of wood is very limited except on the main river this cannot always be done.

CUDAHY, 10th June, 1896.

I submit the following interim report of my operations in the Yukon District up to date.

* * * * *

After my return there was some fine clear weather in January, but it was exceedingly cold, more than 60° below zero, one night 68.5°; and as I had both my ears pretty badly frozen and could not go out in such cold without having them covered, so that I could not hear the chronometer beat, I could not observe until the end of the month when we had two fine nights—29th and 30th—mild enough for me to work.

* * * * *

Having reduced all my observations, and the days having attained a reasonable length, I went into camp on the line on the 20th February, resuming work on the 22nd. But as the hill tops are all bare and from two to three thousand feet above the river we lost many days through the fierce winds.

Our progress was necessarily slow for this reason and also from the fact that I photographed from several stations, which took some time. As there were no important creeks between the Yukon and Forty Mile Rivers I did not cut the line out continuously, but left it so that any one wishing to can place himself on or very near to the line. The distance from the Yukon to Forty Mile River is a little over twenty-five miles. In the valleys along the line the timber was thick, with much underbush, but very little of it is of much value.



Leaving San Francisco for St. Michael.

Curiously enough the line kept generally in the valleys or on the sides of them, and very little of it was in the open. Going from point to point we had to follow as much as possible the hill tops and ridges. I reached Forty Mile River with this survey on the 13th March. From this point southwards there are many streams cut by the line, all of which are more or less gold-bearing, and all have been more or less prospected. This necessitated my cutting the line out continuously from Forty Mile River onwards, which increased our work very much. The valleys traversed are generally upwards of 1,000 feet deep and often very steep, so that the work was exceedingly laborious.

Transporting our outfit from camp to camp was often a very hard task as the hills were so steep everything had to be packed up them, which in the deep soft snow was anything but easy. I reached a point within two miles of Sixty Mile River on the 14th April, and as I had passed all the creeks of any note, and many of them were already running water and our way lay down them, I thought it well to quit work on the line and return to Forty Mile and Cudahy, and attend to the local surveys there. The weather was fine and warm, and so much water ran in the creeks by which we had to return that we could only travel a few hours in the early morning and forenoon. Had the season been more favourable I would have visited Glacier and Miller Creeks which were generally supposed to be in Alaska, but are found to run in Canada for some distance. They are the two richest creeks yet found on the Yukon and are both tributaries of Sixty Mile River. Both creeks are fully located and worked, each claim being 500 feet along the creek and the width of the valley or creek bed. There are nearly 100 claims, all of which pay well. One on Miller Creek, I understand, will yield seventy-five to eighty thousand dollars this season, and the owner will net, it is said, between forty and fifty thousand dollars. He took out, it is reported, nearly half that sum last year off the same claim, and expects to do equally well next year. This is much the richest claim yet found, but all on those creeks do well. There are many other creeks in this vicinity yet to be prospected, and some will, I have no doubt, do well. Gold is found all along the valley of Sixty Mile River, and under more favourable conditions, both mercantile and climatic, it would yield good results to large enterprises. The mercantile conditions will improve; the climate is a serious difficulty, but will be surmounted in time I believe. Along the last ten or twelve miles of the line I ran, the mountains consist principally of quartz and schists, which no doubt originally held the gold found in the valleys and doubtless hold some yet. Several men have taken to quartz prospecting, and from indications which I will dwell on later I believe we are on the eve of some magnificent discoveries.

The miners on all the creeks referred to have quietly accepted my line as the boundary *pro tem.*, and as far as I can learn at present the general feeling is satisfaction that one can now know where he is. Even if the line is not final, no one doubts its being very near the final position. As far as run it is marked by cairns of stones wherever it was possible to procure them with reasonable time and labour, and is cut through the woods and blazed so that no one who wants to find it can mistake it. Another source of satisfaction to all is that they now know distances and directions. Many miners remark to me "we now know how we are going, we can see where south is." In this high latitude in the summer months it is impossible to tell when the sun is near the meridian because its change in altitude is so little for eight or nine hours, consequently any point between east and west was called somewhere near

south. This helps to explain much of the variance in the direction of points as given by miners and others who have no compass or are unacquainted with the use of one and the application of the declination.

On my arrival at Cudahy I rented two cabins from the N. A. T. & T. Co., to house my men and self as I would be around here probably until I started up the river. I did this because there are no convenient camping places in the vicinity, and in the spring all the flats are like lakes along the river until well into the month of June.

After a couple of days rest for the party, who had worked very hard, and after I had developed all my photographs, I began to attend to the local surveys, first surveying the coal claims on Coal Creek and making a chain traverse survey of the creek from the claims down to the Yukon.

I next made a survey of the Cone Hill quartz mining claim and a chain traverse survey of Forty Mile River from the claim down to the Yukon. I then went to work on the Forty Mile town site and Cudahy town site. The last I was asked to block out, which I have done. The manager, Mr. C. H. Hamilton, objected to streets 66 feet wide on such a small plot of ground (there is only about 50 acres). I read him my instructions and wrote him an official letter on the subject, but he insisted on streets only 50 feet wide and assumed all responsibility, so I did as he desired. I made him a plot of the work done on the ground, and he understands that he will have to pay the department for the service rendered in blocking as well as the original survey, and wishes a plan of it, which of course can only be prepared when I go out.

I made a complete survey of Forty Mile, locating and taking the dimensions of every house in it, and it is the worst jumble I ever saw. I had to do this though it entailed a great deal of work, for there were so many claim holders, and there appeared to be a general distrust in the vicinity; every man wants himself on record in evidence as to his claim. I have taken some, but I have several days' work yet. I made a survey of the island for the Anglican mission, and of another island for a man named Gibson. This is in the delta of Forty Mile Creek, and he intends to make a market garden for the growth of such vegetables as the country will produce. In my final report I will deal as fully as my experience here will permit on that phase of the country's character. Many here have small gardens, and are fairly successful with ordinary vegetables. I have advised many to correspond with the experimental farm at Ottawa, with a view to learning the best sort of vegetables for growth in this climate. There is an application in, and the purchase money and cost of survey paid, for eighty acres just west of Cudahy town site, which I will survey in a few days. There is also an application in for forty acres containing a hay swamp on the east side of the river, about two miles below here, which I will survey before starting out. There are many other applications in, but I shall not have time to attend to them, nor have the parties asked for a survey. I think these applications are simply intended to hold the ground until the future of this region is forecasted; it certainly looks promising now. I would respectfully call the attention of the department to the fact that the services of a surveyor are urgently needed in here and will be for some years to come, and I would suggest that one be appointed to look after and take charge of all the land interests in this district. He will find plenty to do, and any work outside of departmental which he might be asked to do (and there is much of it, and will be more in the way of engineering), would help materially to pay his salary, which would of course in here have to be liberal.

I have had several applications for engineering surveys, and I have told the parties I can only make these as an officer of the department, with whom they will have to settle on the basis of the time it took and the cost per day of the party and myself, should I undertake any of it, which is more than doubtful. Any surveyor so appointed will require experience in the taking of evidence and will need to be patient and attentive for it is extremely difficult to make some of the people here understand what they want to know.

CUDAHY, August 18th, 1896.

It is now certain that coal extends along the valley of the Yukon from Coal Creek for ten or twelve miles down, and from Coal Creek up to Twelve Mile Creek, which flows into the Yukon about thirty miles above here. The latter stretch is cut off from the river by several miles of hills, as it is about six miles direct from the river at Coal Creek, and about eighteen on Twelve Mile Creek. This is the stream named Chandindu by Schwatka. There is a seam on it about six feet thick, as reported by an expert who went in search of it. I found drift coal on the south branch of Coal Creek.

On the Cornell claim on Cliff Creek the seam is five feet four inches thick. I have sent specimens of it out. I found it necessary to refer to the different creeks so had to name them "Shell Creek," because I found a stone with a shell impression at its mouth; "Cliff Creek," because it enters the river at the foot of a high cliff; and "Flat Creek," because it enters the river in a large flat.

Glacier Creek is turning out very well, and several good creeks have been discovered up Forty Mile in Alaska.

CUDAHY, 6th September, 1896.

I have been in hourly expectation of the Canadian mail for some days now, but it has not arrived yet. The A. C. Co.'s steamer "Alice" came up on the 4th instant, but brought no news for me, so that I am completely in the dark as to my movements yet, and if I am to go out it is time I was on the way. I do not wish to remain here another winter unless it is absolutely necessary; more especially with my party and all its expenses. In case I go out, I will try to accompany Mr. J. Dalton over his trail from the head of Chilkat Inlet to Selkirk on the Yukon. He has made several trips over that route with horses and packs, and speaks very highly of it. I will make a rough survey of it, and take some photographs along the route.

I have taken copious notes of it from him, but would like to see it for myself.

I am very much pleased to be able to inform you that a most important discovery of gold has been made on a creek called Bonanza Creek, an affluent of the river known here as the Klondyke.* It is marked on the maps extant as Deer River, and joins the Yukon a few miles above the site of Fort Reliance.

The discovery was made by G. W. Cormack, who worked with me in 1887 on the coast range. The indications are that it is very rich, indeed the richest yet found, and as far as work has been carried on it realizes expectations. It is only two weeks since it was known, and already about two hundred claims have been staked on it and the creek is not yet exhausted: it and its branches

* The correct name is Thron-Diuck.

are considered good for three hundred or four hundred claims. Besides, there are two other creeks above it which it is confidently expected will yield good pay, and if they do so, we have from eight hundred to one thousand claims on this river which will require over two thousand men for their proper working. Between Thron-Diuck River and Stewart River a large creek called Indian Creek flows into the Yukon and rich prospects have been found on it, and no doubt it is in the gold-bearing country between Thron-Diuck and Stewart Rivers, which is considered by all the old miners the best and most extensive gold country yet found. Scores of them would prospect it but for the fact that they cannot get provisions up there and it is too far to boat them up from here in small boats.

This new find will necessitate an upward step on the Yukon, and help the Stewart River region.

News had just arrived from Bonanza Creek that three men worked out \$75 in four hours the other day, and a \$12 nugget has been found, which assures the character of the ground, namely, coarse gold and plenty of it, as three times this can be done with sluice boxes. You can fancy the excitement here. It is claimed that from \$100 to \$500 per day can be made off the ground that has been prospected so far. As we have about one hundred claims on Glacier and Miller Creeks, with three or four hundred in this vicinity, next year it is imperative that a man be sent in here to look after these claims and all land matters, and it is almost imperative that the agent be a surveyor. Already on Bonanza Creek they are disputing about the size of claims.

I would have gone up and laid out the claims properly, but it would take me ten or twelve days to do so, and meantime my presence might be more urgently required elsewhere.

Another important matter is the appointment of some sort of legal machinery here. Before the police came miners' meetings administered justice, collected debts, etc., etc.; now the magistrates here are expected to do all that, and when it is found that they do not it causes much dissatisfaction, and there are several cases of real hardship where parties will not pay their just debts though able to do so. If a miners' meeting were held and judgment given against the delinquent it would do no good for he would and does resist payment, and were force resorted to he would appeal to the police for protection. A continuation of this state of affairs is most undesirable in the interests of our country, for we have a reputation as a justice-administering, law-abiding people to maintain, and I would urgently press this matter on the authorities.

From the indications I have mentioned it will be seen that this corner of the North-west is not going to be the least important part of it, more especially when we consider the fact that gold-bearing quartz has been found in it at numerous places and much will no doubt be worked. It is apparent that the revenue and business of the country will more than offset the expense of administration.

I cannot here enter into the reasons for it, but I unhesitatingly make the assertion that this corner of our territory from the coast strip down and from the 141st meridian eastward will be found to be a fairly rich and very extensive mining region.

As I have already pretty fully reported on coal, I will only add that it is reported in abundance only eight miles up the Chandindu River, where a seam over six feet thick has been found of the same quality as that already described.

CUDAHY, 9th December, 1896.

A mail left here for the outside on the 27th ultimo by which I sent you an interim report, which will probably reach you in January. From it you will learn how I came to be caught in the country, and why I have not attempted to get out in the winter. As you are as likely to get that report as you are this one, I refrain from repeating more here than to say that, should it be necessary for me to go out before summer, I will try and get out by dog team, starting in the last of February or early in March, when the days are long and the weather mild, getting out, say, early in May.

Since my last the prospects on Bonanza Creek and tributaries are increasing in richness and extent until now it is certain that millions will be taken out of the district in the next few years.

On some of the claims prospected the pay dirt is of great extent and very rich. One man told me yesterday that he washed out a single pan of dirt on one of the claims on Bonanza and found \$14.25 in it. Of course that may be an exceptionally rich pan, but \$5 to \$7 per pan is the average on that claim, it is reported, with five feet of pay dirt and the width yet undetermined, but it is known to be 30 feet even at that: figure the result at nine to ten pans to the cubic foot, and 500 feet long, nearly \$4,000,000 at \$5 per pan—one-fourth of this would be enormous.

Another claim has been prospected to such an extent that it is known there is about five feet pay dirt averaging \$2 per pan, and width not less than 30 feet. Enough prospecting has been done to show that there are at least 15 miles of this extraordinary richness; and the indications are that we will have three or four times that extent, if not all equal to the above, at least very rich.

It appears a great deal of staking for absentees has been done, some of whom have turned up, and some have not. This has caused confusion, and leads to a good deal of what might be called fraud, for it is easy for a few in the inner circle to know what claims have been recorded in accordance with the law, and what have not. They can then for themselves, directly or through the intervention of a friend, have the latter jumped for their whole or partial interest. It appears this has been done in several instances.

I think the department should get large posters printed on which shall be shown the sections of the law governing the location and recording of quartz and placer mines, the extent of each, the duties of miners in both cases, and the rulings of the department on the questions I have submitted, with the penalties attached to offences against the law. Some of these should be printed on stout paper or parchment, capable of standing exposure to the weather, and posted at every important point in the country, so that there may be no excuse hereafter for ignorance.

A large number of copies of the Mining Act, Land Act, and timber and hay lands regulations should also be sent in.

As to the extent of mining districts, they should, I think, be made large, and Section 21 amended to enable a man who has located a claim which does not pay a reasonable return on outlay the first season after his claim has been prospected, to make a second location in the same locality or district, provided he can find one in it. The agent would have to determine whether or not he had expended the proper amount of labour on his claim to get reasonable returns. This I know opens the door for a lot of trouble, and, may be, fraud; but,

on the other hand, a great many worthy men suffer from the want of some such regulation, and as very few would be in a position to take advantage of such a provision until after their second season, there would hardly be anything left for them to take. Enterprising industrious men who would work almost continuously might get some benefit—probably would—but no others; so such a regulation could not do very much harm, and might help some deserving people. As it is now men stake claims on nearly every new find, some having several claims in the Thron-Diuck (Klondyke) locality. They know, I believe, that they will not be able to hold them, but, as the localities are not yet clearly defined, they can hold on to them for a while, and finally, by collusion with others, acquire an interest in them.

The miners here are I understand getting up a petition to the Minister asking for aid in opening a way from the south and building along it shelter for winter travellers, with suitable supplies scattered along.

As it is now, a winter's trip out from here is, on account of the long haul and want of shelter, tedious and hazardous, and their representations are worthy of consideration.

CUDAHY, 11th January, 1897.

The reports from the Thron-Diuck (Klondyke) region are still very encouraging; so much so that all the other creeks around are practically abandoned, especially those on the head of Forty Mile in American territory, and nearly one hundred men have made their way up from Circle City, many of them hauling their sleds themselves. Those who cannot get claims are buying in on those already located. Men cannot be got to work for love or money, and development is consequently slow; one and a half dollars per hour is the wages paid the few men who have to work for hire, and work as many hours as they like. Some of the claims are so rich that every night a few pans of dirt suffices to pay the hired help when there is any; as high as \$204 has been reported to a single pan, but this is not generally credited. Claim owners are now very reticent about what they get, so you can hardly credit anything you hear; but one thing is certain, we have one of the richest mining areas ever found, with a fair prospect that we have not yet discovered its limits.

Miller and Glacier Creeks on the head of Sixty Mile River, which my survey of the 141st meridian determined to be in Canada, were thought to be very rich, but they are poor both in quality and quantity compared with Thron-Diuck (Klondyke).

Chicken Creek, on the head of Forty Mile, in Alaska, discovered a year ago and rated very high, is to-day practically abandoned.

* * * * *

Some quartz prospecting has been done in Thron-Diuck (Klondyke) region, and it is probable that some good veins will be found there. Coal is found on the upper part of Thron-Diuck (Klondyke), so that the facilities for working it, if found, are good and convenient.

* * * * *

CUDAHY, 22nd January, 1897.

A quartz lode, showing free gold in paying quantities, has been located on one of the creeks, but I cannot yet send particulars. I am confident, from

the nature of the gold found in the creeks, that many more of them—and rich, too—will be found.

* * * * *

CUDAHY, 23rd January, 1897.

I have just heard from a reliable source that the quartz mentioned above is rich, as tested, over one hundred dollars to the ton. The lode appears to run from 3 to 8 feet in thickness, and is about 19 miles from the Yukon River. I will likely be called on to survey it, and will be able to report fully.

Placer prospects continue more and more encouraging and extraordinary. It is beyond doubt that three pans on different claims on Eldorado turned out \$204, \$212, and \$216; but it must be borne in mind that there were only three such pans, though there are many running from \$10 to \$50.

* * * * *

EXTRACT FROM ASSISTANT-SURGEON A. E. WILLS' REPORT
FOR 1895.

It may be of interest to mention something concerning the climate, mode of living of the people generally, and diseases met with.

The climate is wet. The rainfall last summer was heavy. Although there is almost a continuous sun in summer time evaporation is very slow, owing to the thick moss, which will not conduct the heat; in consequence, the ground is always swampy. It is only after several years of draining that ground will become sufficiently dry to allow the frost to go out, and then only for a few feet. During the winter months the cold is intense, with usually considerable wind.

A heavy mist rising from open places in the river settles down in the valley in calm extreme weather. This dampness makes the cold to be felt much more, and is conducive to rheumatic pains, colds, &c.

Miners are a very mixed class of people. They represent many nationalities and come from all climates. Their lives are certainly not enviable. The regulation "miners' cabin" is 12 feet by 14 feet, with walls 6 feet and gables 8 feet in height. The roof is heavily earthed, and the cabin is generally very warm. Two, and sometimes three or four men will occupy a house of this size. The ventilation is usually bad. Those miners who do not work their claims during the winter confine themselves in these small huts most of the time.

Very often they become indolent and careless, only eating those things which are most easily cooked or prepared. During the busy time in summer, when they are "shovelling in," they work hard and for long hours, sparing little time for eating, and much less for cooking.

This manner of living is quite common amongst beginners, and soon leads to debility, and sometimes to scurvy. Old miners have learned from experience to value health more than gold, and they therefore spare no expense in procuring the best and most varied outfit of food that can be obtained.

In a cold climate such as this, where it is impossible to get fresh vegetables and fruits, it is most important that the best substitutes for these should be provided. Nature helps to supply these wants by growing cranberries and other wild fruits in abundance, but men in summer are usually too busy to avail themselves of these.

The diseases met with in this country are dyspepsia, anæmia, scurvy caused by improperly cooked food, sameness of diet, overwork, want of fresh vegetables, overheated and badly ventilated houses; rheumatism, pneumonia, bronchitis, enteritis, cystitis and other acute diseases, from exposure to wet and cold; debility and chronic diseases, due to excesses. Venereal diseases are not uncommon. One case of typhoid fever occurred in Forty Mile last fall, probably due to drinking water polluted with decayed vegetable matter.

In selecting men to relieve in this country I beg to submit a few remarks, some of which will be of assistance to the medical examiners in making their recommendations.

Men should be sober, strong and healthy. They should be practical men, able to adapt themselves quickly to their surroundings. Special care should be taken to see that their lungs are sound, that they are free from rheumatism and rheumatic tendency, and that their joints, especially knee joints, are strong and have never been weakened by injury, synovitis or other disease. It is also very important to consider their temperaments. Men should be of cheerful, hopeful dispositions and willing workers. Those of sullen, morose natures, although they may be good workers, are very apt, as soon as the novelty of the country wears off, to become dissatisfied, pessimistic and melancholy.

WILLIAM OGILVIE ON THE GOLD ZONE.

[*By Associated Press.*]

In speaking of the Klondyke Gold Fields, William Ogilvie, Dominion Surveyor for the North-West Territory, says:—

“Gold has been found in a certain zone in British Columbia, running through the Cariboo and Cassiar districts. Project the axis of this zone north westerly and we touch the Teslin Lake, Hootalinqua River, Stewart River, Indians’ Creek, Klondyke, Sixty Mile, Forty Mile, American Creek, Seventy Mile and Birch Creek. Now, it is highly improbable that, gold being found at all these points, the intervening spaces are barren, and we will do no more than say generally that we have a zone of upwards of five hundred miles in length, some of it in Alaska, more of it in the North-West Territory, and much of it in British Columbia, which will yet be the scene of numerous mining enterprises, both on the quartz and the placer.”

WHAT GENERAL DUFFIELD SAYS:—

In regard to the recent reports of rich finds on Stewart River, General Duffield, Superintendent of Coast and Geodetic Survey, says:—

“I have contended all along that Stewart River was one of the best in that country on which to prospect, for one reason in particular. This is that wherever there is the largest water-shed there will the greatest amount of gold be found. It is washed down by the water into the bed of the streams.

“A glance at the Stewart River, which is north-east of the Klondyke, in the North-west Territory, shows that the river is the outlet for an immense water-shed—much greater than that of the Klondyke. The Beaver River and the Stewart unite. There must be large quantities of gold in that section, as it has been washed down for ages and ages by the force of the currents.

“Another stream on which I am certain there are large amounts of gold to be obtained, for the same reason that applies in the Stewart, is the White River. It drains a wide water-shed, from its location and general appearance. It is about one hundred and twenty miles from the coast, almost on a direct line with Mount St. Elias, in the southern portion of Alaska. The only difficulty to be encountered, I think, would be in reaching its waters. It could be arrived at by either the Yukon River route or the Chilkoot Pass. A prospector there would have a new territory.

“The river might be reached by following the Copper River, which appears to run at no great distance from it. There are probably some high, rough mountains to cross from one to the other. The White River shed seems to be much higher than that of the Copper River.”

GOLD DISCOVERIES IN ALASKA.

ALLEGED RICH CLAIMS IN THE MINOOK RIVER VALLEY—UNDEVELOPED TERRITORY.

A San Francisco telegram says:—“James Dietrick, a miner of experience in California, South America, and South Africa, has just returned from Alaska, where he spent some time in the Minook River Valley. He says: ‘While there have been three hundred claims staked out on the streams at Minook, Hunter, Hoosier, Miller, and Chapman, there is little known about any but Little Minook. On the Little Minook the mile of claims which has been opened proves very rich. The pay streak is from eight feet to twenty feet wide and six feet to twenty feet deep. It is all gravel wash. That is an evidence to me that the quartz will be seam or pocket.

“‘With the Birch and Minook districts filled, the prospectors will have to get into the Russian and Drekel creeks and the Kouyukuk River district. The latter valley is one thousand miles long, and the rich territory is found some distance up the stream. This is now reached by tramping over the mountains from Fort Hamilton, a distance of one hundred and fifty miles across two mountain ranges. With three sledges and seven dogs two men can only take in one sledgeload of provisions, the other two being required to carry food for the dogs. This practically keeps all men out of the district.’”

NEW ROUTE TO THE KLONDYKE.

CANADA WILL TEST THE FEASIBILITY OF THE PEACE RIVER ROUTE.

The feasibility of reaching the Klondyke by way of Edmonton and the Peace River will have a practical trial under the auspices of the Minister of the Interior. It has been asserted for this route that it offers the advantage of a continuous stretch of country available for horses, and may, therefore, be utilized by pack trains right through to the gold fields.

To ascertain the nature of this proposed route the Interior Department has determined to despatch a small detachment of mounted police from

Edmonton as early as possible. They will move north by way of the Peace River to the Liard, and thence by way of the Dease to the Pelly, which joins the Yukon at Fort Selkirk, one hundred and seventy miles above Dawson City, and but one hundred miles above Stewart River, where, according to present indications, the bulk of the prospecting will be done next year.

In all probability the richness of the Klondyke will pale into insignificance before that of the Stewart. The Government is in possession of facts concerning the wonders of the Stewart, but strenuously withholds all information. The Minister of the Interior when questioned did not deny that his department was in possession of valuable information regarding the Stewart River placer diggings, but declined to discuss the subject. It is believed that the facts are being suppressed not only to prevent an increase of the gold excitement, but to enable the Government to perfect all necessary arrangements for the proper administration of the Yukon before the rush to the new diggings takes place.

RAILROAD TO THE KLONDYKE.

ENGINEERS NOW ON FIELD, AND ROUTE HAS BEEN SURVEYED.

[*By telegraph to the "Herald."*]

Seattle, Wash., August 28, 1897.—Duncan McKinnon, the leading merchant at Fort Wrangle, arrived in Seattle yesterday, having come down from Alaska on the steamship "City of Topeka." He is a firm believer in the eventual popularity of the Stickine River route to the interior. His belief is confirmed by the activity which the Canadian government and the Canadian individuals are taking in the opening of the trail.

The last Dominion Parliament appropriated \$1,500 for the preliminary opening of the trail, and the money was placed in the hands of Captain Colbraith with instructions to proceed with the work. Captain Colbraith reported the funds insufficient, and Premier Laurier advanced \$1,500 more, relying upon parliament to reimburse him. The trail was opened sufficiently for packing purposes, and if reports are to be believed it promises to be the shortest and best route to the gold districts of the upper Yukon.

Matters have now taken on a practical shape leading up to the construction of a narrow gauge railroad from below the mouth of Telegraph Creek up the slight elevation to the level table land leading to Lake Teslin. Mr. McKinnon states that engineers are now in the field, and that a route has been surveyed from the head of navigation on the Stickine River to the lake.

The Dunsmuirs, of Victoria and San Francisco, and English capitalists are said to be working with the Hudson Bay Company to establish an adequate steamer service from Fort Wrangle up to the Stickine River to the starting point of the railroad. Upon the completion of the railroad, material for the construction of steamers to ply on Lake Teslin will be loaded and sent through. If the plans of the projectors are carried out the work will be pushed on the road during the coming winter, and the three lines will be ready for business in the spring.

PART II.

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TRUTH AND FACTS;

BEING MY THREE-AND-A-HALF YEARS' EXPERIENCE

IN THE

YUKON COUNTRY.



The actual Costume I wore when travelling in the Yukon during the winter.

PART II.

PERSONAL NARRATIVE

OF

A. E. IRONMONGER SOLA,

THREE AND A HALF YEARS IN THE

KLONDYKE.

Since my return to Europe in October of 1897, I have been requested by numerous friends and acquaintances to give a brief description of my life in the United States and the Klondyke. Not having the time to devote to each individual I have finally decided, after a great deal of persuasion, to write a book, which will not only be of interest to my friends, but of use to many who are interested financially or otherwise in this new gold field. It is only necessary to give a brief synopsis of my life in America, up to the time I left for Alaska.

An old college friend of mine by the name of Harry Robarts, who was interested with his brothers in the shipping and stock raising business in California, asked me to visit him; so I left Liverpool in July, 1886, in the old S.S. "City of Chicago," bound for the United States. It was a very pleasant trip across the Atlantic, the sea being like a pond all the time; we arrived in Jersey City on the 10th day, where I met Mr. Burnett, a friend of mine, with whom I went to Toronto, Montreal and Quebec, then Niagara, where I took the train to San Francisco. I was met on my arrival by my old chum, Harry Robarts, and after spending a week in that fascinating city, we left for Eel River, California, on a small steamer, called the "Mary D. Hume."

My first work in California consisted of unloading wagon loads of grain, potatoes, &c., piling them in warehouses, for which I received a salary of twenty dollars a month.

After working one year at that business, I eventually agreed to take charge of a large stock ranch at Shelter Cove, Humboldt County, California, which we had leased from Mr. John Ray, an old pioneer of California.

During the time I had the ranch in charge, I spent two and a half years in the saddle, herding and driving cattle and really spending more money than I made.

In November, 1889, I became of age and decided to return to my home in England, having spent three years and a half in a rough and wild country, and being in fact poorer on my return than when I started.

After staying fourteen months in England, I made up my mind to return to the United States, and left England in February, 1891, sailing on the "Majestic," of the White Star Line.

During the voyage we experienced very rough weather, and the saloon passengers even went so far as to sign a petition to the captain requesting him to slow down the steamer for the benefit of the passengers. He, not being in the best humour—having spent at least two days and two nights on the "bridge"—told them very politely that he was not on a yachting trip, and ran her through at full speed, only losing one boat which was washed overboard. We arrived in New York only five hours beyond our schedule time, which gives an idea of the large driving power the Atlantic Liners have.

From New York I went to Louisiana, with the intention of going into the lumber business. I worked in a saw-mill for about three months, but finally decided that I did not know anything about the business, and, in fact, was not very anxious to learn.

Leaving Louisiana I went to Galveston, Texas, dealt in cotton and got a touch of malarial fever, and was advised to visit the Pacific Coast. I again arrived in San Francisco, and not knowing what to do, I obtained through the influence of an English Syndicate, a position with the Pacific Coast Steam Ship Company, and worked in their office at a salary of sixty dollars a month, which really was not sufficient to enable a man to pay his expenses.

They then sent me to sea as purser on their steamers running between San Francisco and the Puget Sound ports.

After being a year in that business, and at the end having no more money than when I started, I got transferred to the Alaska route, and acted as purser on the old steamer "Mexico," running between Seattle, Tacoma, Victoria, Departure Bay to the various ports in Alaska.

The next ship I was purser on was the "Alki," and the last trip I made was from San Francisco to Douglas Island, Alaska, with a cargo of "Giant" powder for the famous Treadwell Mine. After knocking about at sea for seven days, shifting cargo and expecting to be blown up every minute, we finally rounded Cape Flattery, and we were all very pleased to get into smooth water. We then cruised to Douglas Island, discharged our cargo and traded around various ports in Alaska and returned to San Francisco, when I immediately sent in my resignation to the Company, and left at once for Alaska.

I arrived at Juneau, Alaska, in February, 1894. Juneau, situated as it is at the head of tide-water and at the gateway to the gold country, will be the most important city of Alaska. Indeed, it is already the metropolis of the territory, although Sitka still remains the capital, and, owing to its age and its situation, will continue to be an important point.

Juneau, however, is destined to be the outfitting point for all miners on their way to the Yukon Goldfields. It has a population of nearly fifteen hundred, which is bound to rapidly increase. It is the headquarters of several steamboat lines, has a city hall, court-house, waterworks, electric lights, good hotels, and a large number of fine buildings. It is a picturesque city, situated at the foot of the mountains, which are snow-capped throughout the year,

and down which avalanches are constantly tearing. One or more avalanche rushes down the mountain side every day. Juneau was founded in the winter of 1880, and now supports three weekly newspapers. While here I met a young fellow from Chicago, who was very anxious to make a trip through the Yukon country. Knowing I could not be much worse off than I was at the present time, I agreed to go with him. We immediately made preparations, bought our outfit in Juneau, consisting of flour, beans, bacon, butter, various kinds of canned goods, dried fruits, oatmeal, guns, revolvers and ammunition, and a complete set of boat-building tools. We left Juneau for Dyea on the 28th of May, 1894. It was a bright sunshiny morning when we went on board the small steamer "Rustler," the decks were full of freight, and there were, besides ourselves, seven enthusiastic passengers, bound for the Yukon Goldfields.

From here it is as well, perhaps, to give extracts from my diary, which I kept from Juneau to Forty Mile. This will give the whole overland route day by day, and is the most perilous, the most subject to hardships, and consequently the most fascinating, fortune-hunting journey that could be imagined. At 12 o'clock on the night of May 26th, 1894, we arrived at Seward City, being a mining camp owned by the Nowell Gold Mining Company.

May 27th. Temperature 58°; strong wind from south-east. Left Seward City at 5 a.m., passed numerous glaciers, and dropped anchor off Native Mission, near Chilkat. We had to remain at anchor for some time, owing to a heavy wind and rain storm; this was by no means pleasant, and the steamer being so small, there was no room to move on the deck.

May 28th. Arrived at Dyea, having made the distance of one hundred miles from Juneau in about thirty-eight hours. Dyea is just at the head of the northernmost branch of Chilkoot Inlet, which is itself a branch of Lynn Canal. The extreme northern limit of navigation (Dyea) is certainly one of the most picturesque and prettiest spots in Alaska. We dropped anchor about a mile from shore, and a huge canoe, manned by painted Indians put out to meet us. With some difficulty we managed to get our outfit aboard, and with all sails set and in the face of a heavy gale, we started for the shore, and were not sorry to set foot on *terra firma* once more. We pitched our camp near the Indian village, close to a little river with a swift current.

May 29th. Thermometer 76; slight rain showers; warmer in afternoon.

May 30th. Thermometer 62; north-west wind; slight rain. The captain and crew of a small steamer named "Katie," that was at anchor close by, were running very desperate chances by selling whiskey to the Indians at a large profit—to supply whiskey to the Indians being against the laws of Alaska. The Indians brought the whiskey ashore in buckets and in all tins they could get together, and in a very short time they were all drunk. We stayed in camp all day and loaded all our arms, expecting trouble at any moment with the Indians, as they were all very quarrelsome, and fighting amongst themselves. That night we took watch and watch.

May 31st. Weather very cloudy. Wind south; thermometer 62°. Indians dangerous and quarrelsome. We had to help Mr. Wilson (the only white man at that time at Dyea) to take the rifles away from the Indians, and we did so without much difficulty.

June 1st. Weather bright; thermometer 64°. The village looks like a battle field. Indians strewn everywhere in hopeless intoxication.

During our absence from the camp, some half-starved Indian dog stole thirty pounds of bacon and ham from camp, which, of course, considerably lightened up our outfit.

June 2nd. Bright and sunshiny; thermometer 68°. Stayed near camp all day.

June 3rd. Cloudy, rained; thermometer 62°. Steamer "Rustler" again arrived from Juneau, with fourteen passengers for Yukon, and an extra supply of provisions for us.

June 4th. Warmer; thermometer, 70°.

June 5th. Thermometer 72°. Two men returned from Lakes, who had broken through the ice and lost all their outfit, and had to return to Juneau without money to buy more.

June 6th and 7th. Thermometer varied from 60° to 78°, and we had to lay in camp, being unable to procure Indians to pack our provisions over the summit, as they had not yet recovered from their dissipation of a week ago.

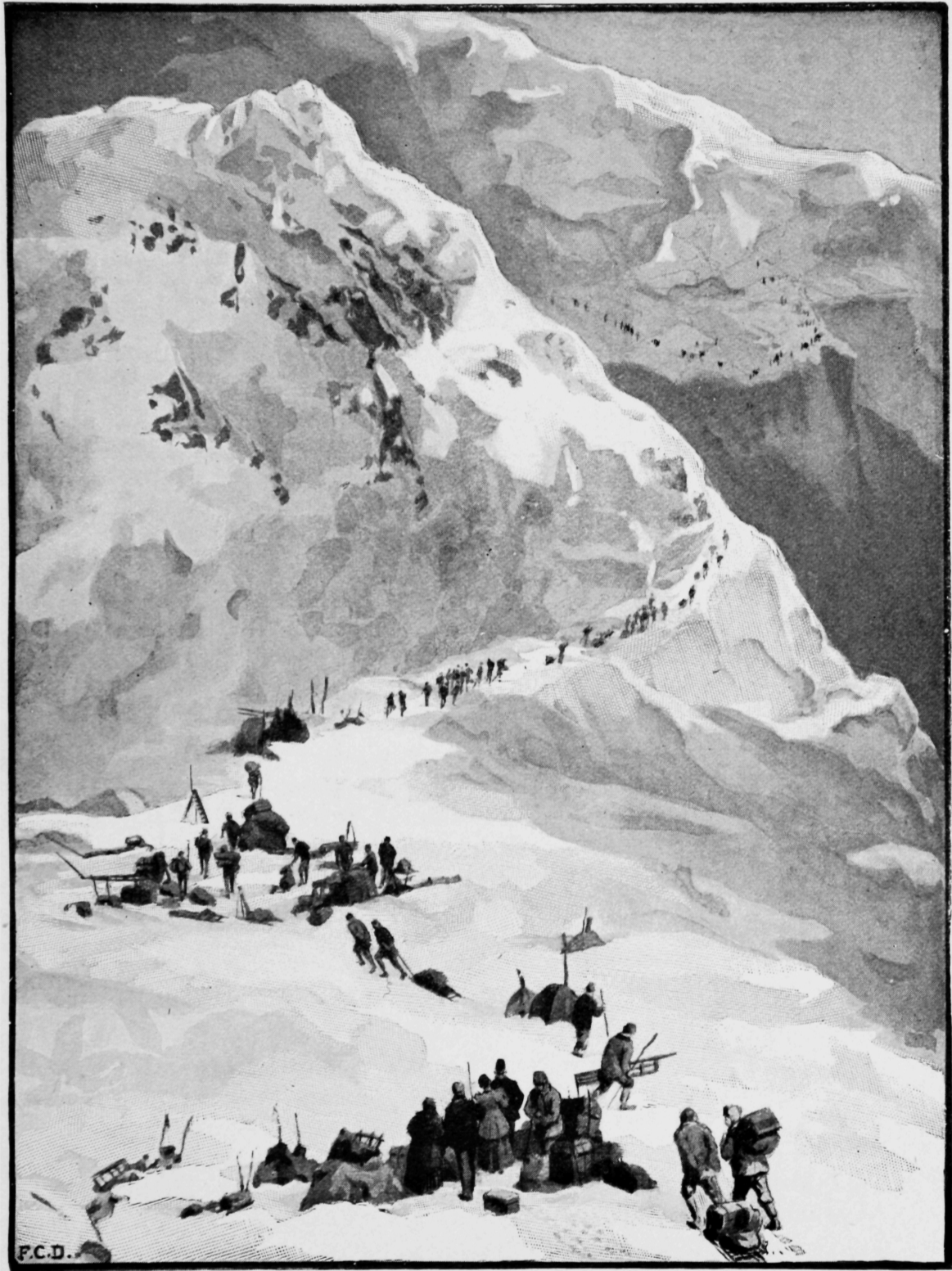
June 8th. In the morning my friend and myself managed to hire seven Indians to pack our outfit, consisting of about eight hundred pounds. We headed the procession and marched up the trail by the side of the Small River, then we had to load our provisions into the Indian canoes, and travel for six miles by water against a strong current. We then put our packs on our back and travelled on the land to the head of the Small River, or, in other words, to the foot of the Chilkoot Pass. The Indians packed from one hundred to one hundred and fifty pounds a piece, and travelled all day until 6.30 p.m., having made a distance of one hundred and eleven miles, counting Juneau as the starting point.

June 9th. The thermometer varied from 30° to 80°. We left the camp at 5.30 in the morning, and stopped to cook something to eat at 9.30. We arrived at the celebrated Sheep Camp at 11 a.m. and pushed on to the Stone House, where we arrived at 2 p.m. in the afternoon, but owing to the quantity of snow left on the mountains we were unable to travel, the snow being so soft and having no crust to walk on. It got colder in the evening, and at 5.15 p.m. we commenced climbing the summit, which is 3,500 feet, and in some places we broke through the snow which was up to our waists, and had to climb out on our hands and knees. The landscape is resplendent with glaciers, the ice sparkles like jewels in the Alaskan sun, the mountains rise in the distance on every side, and it is all impressive beyond the power of description.

We reached the summit at 9.30 p.m., and then the down grade commenced. After travelling all night we arrived at Lake Lindeman at 3.30 a.m. on the morning of the 10th.

The scenery was very grand and picturesque. Travellers have a very mistaken idea of the summit and descent—it certainly is not good in places, but, in my opinion, it is the best and easiest summit to cross, we having made the trip easily in twenty-two hours.

Arriving at Lake Lindeman, we found five or six camps all getting ready to build boats, or rafts, and sail down the lake. Those who make the journey in summer will find the ice out of the lakes, but if an early start is made they would be able to cross Lake Lindeman and the other lakes on foot or else by means of ice boats, temporarily constructed. The ice breaks up in the lake about May, and then it becomes necessary to stop and build boats. Lake Lindeman is about six miles long.



Chilkoot Pass, Winter trail.

June 11th. Thermometer 80° ; south-west wind. Early in the morning we went up a small creek and chopped logs or small trees, and floated them down to the lake, being in the water up to our waists nearly all day.

Early that afternoon we rolled up in our blankets and slept until the morning of the 12th.

June 12th. That day we built our raft and loaded eight hundred pounds, our whole outfit, and started at 4 p.m. with a favourable south-west wind; the result being that we shipped a great deal of water and got all our provisions wet. Thermometer about 58° . At 11 p.m. we arrived at the end of Lake Lindeman, and had to camp, owing to the thick ice in the inlet, which prevented us from going through.

June 13th. Thermometer 66° . Laid in camp and watched for the ice to go out. Took our gold-pans, picks and shovels and prospected the small creeks for gold but failed to find any, neither did we see any game.

June 14th. Thermometer 68° ; strong south-west wind. Left early in the morning and worked our way through the ice until 6.30 p.m., we then unloaded our raft and packed over the portage until 9.30 p.m., when we pitched our camp at the mouth of Lake Bennett. The portage is a distance of about one mile. During the time we packed from Lake Lindeman to Lake Bennett a number of Stick Indians would peep at us from behind the trees in the woods. They looked very wild and curious, but did not attempt to molest us in any way.

The rapids between Lake Lindeman and Lake Bennett are about one mile long, and not much over seventy-five feet wide. The water is very quick, and it is impossible to navigate either a boat or raft with safety.

June 15th. Thermometer 62° ; south-west wind. We started our raft from foot of Lake Lindeman through the rapids of Lake Bennett, intending to catch it at the head of Lake Bennett. In the centre of the rapids the raft stuck on the rocks, and we tried all day to get her off, but without success. In the attempt we lost all our rope, and had to abandon the raft.

June 16th. Thermometer 64° ; south-west wind. Raft still on rocks. We went up another river at the mouth of Lake Bennett, which came in at the head of the left-hand side and pitched our camp. We got logs, and tried to float them down to the head of the lake, but they stuck in the rocks, and we wasted the whole day.

June 17th. Thermometer 60° ; south-west wind. We decided to cross the Small River, and pitch our camp near a patch of timber about half a mile up the river, on a small knoll or hill. Finally we succeeded in crossing on three logs, and after having made at least ten trips managed to get our outfit across, which was all more or less wet. Early that night we turned in for a well-earned sleep.

June 18th. In the morning we cut down small suitable pines, built a saw-pit, and squared one tree for six inch lumber with a whip-saw.

A small description of whip-sawing would not, I think, be out of place, as a great many young people who intend going into the Klondyke have no idea at all of how a whip-saw should be used, or how lumber is made with a whip-saw.

We first found four upright trees, and cut them off about six feet from the ground and notched the tops out so that we could lay cross-pieces on them. On the top of the cross-pieces we laid and pinned two end pieces. From the

side of this pit we felled two more small trees, and rested them, one end on the ground and the other end on the saw pit. The saw log was then felled and with the aid of levers pried to the bottom of these slanting pieces, and, by the combined efforts of both of us, was rolled on top of the pit. We then took our square and marked the log off at the top end—the log being large enough to perhaps make five 6-inch boards. We then barked the log with our axes, and put our chalk line the whole length, making a distinct mark from one end of the log to the other. Then the sawing commenced, one man being on top of the log and the other underneath. The first part consisted in taking off the slabs. After the two side slabs were taken off, the log was turned over and the other two slabs taken off which leaves a square piece of timber on the pit. That timber is then marked and lined in $\frac{3}{4}$ -inch or 1-inch boards and sawed up.

Beginners at this kind of work will find it very difficult to saw two boards evenly, and, in my opinion, whip-sawing has been the means of splitting up more parties and friendly relations than anything else during the trip.

After building the saw-pit, we squared one log for six inch lumber, and partly sawed four boards three-quarters of an inch thick.

During the time we were sawing the lumber we saw numerous cariboo on the mountains, but the only game we managed to shoot was one small grouse, that being the first game we had captured since we started.

The spots near the camp were very beautiful, the foliage green and plentiful, making very good feed for the various kinds of game.

June 19th. Thermometer 70°; light wind; sunshiny. Mosquitoes very bad. Sawed five 24-feet by 6-inch by $\frac{3}{4}$ -inch pine boards, and squared a 22-foot pine log. After sawing the boards we had to pack them to the camp, through the swamp and brush, which proved a very tedious undertaking.

June 20th. Thermometer 80°; light wind. Sawed seven boards $\frac{3}{4}$ -inch by 6 inches by 22 feet. Shot grouse. Packed 6 boards to camp. Worked only eight hours that day. At night it snowed on the mountains.

June 21st. Thermometer 76°; light south-west wind. Felled a spruce tree and squared five boards 1 inch by 6 inches by 16 feet, for boat bottom.

During the day a scow passed down the river, which contained a man, named Henderson, and party.

June 22nd. Thermometer 60°; south-west wind. Rain during the night. During the day my finger commenced to swell very badly, I having poisoned it, but being the left hand I was still able to help pack the lumber from the pit. In the afternoon we built a rough bench, planed the edges of our timber and set the boat bottom up.

The water in the river falling very rapidly.

June 23rd. Thermometer 82°. Worked in the morning sawing braces, and in the afternoon worked on boat till 11 p.m. Mosquitoes very bad, marked my hands, face and neck all over.

June 24th. Worked all day on boat from 9 a.m. till 12 p.m., with thermometer at 90° and mosquitoes by the thousand.

June 25th. At 3 a.m. we got up and worked on boat and launched her at 6.15 a.m. Thermometer 54°; south-west wind.

Boat after being completed was 21 feet long, 4 feet 2 inches beam, and 25 inches high on sides, and after we put her in the water we were surprised to find that she leaked, we must have scraped the pitch off the bottom when

hauling her down from the camp to the river. We left her lying in the water until 8 o'clock, then baled her out, loaded in our provisions and started down the river for Lake Bennett.

Arriving at Lake Bennett we hoisted a blanket, and I looked after the sail while my friend and travelling companion sat in the stern and steered the boat. We ran down the lake at a speed of about six miles an hour, and hugged the shore as much as possible, but in rounding rocky points we filled the boat half full of water, and finally decided to run in and dry out as much as we could of our outfit.

After landing on the shore, we started a camp-fire and cooked some bacon and frying-pan bread, and had, what we thought, an excellent meal.

Lake Bennett for the first ten miles is rather narrow, with high mountains on either side, which, I should say contain a great deal of minerals, consisting of gold, silver and coal. Some of the mountains reach a height of eight thousand feet.

At 2.30 p.m. we resumed our journey, and only ran for $2\frac{1}{2}$ miles, the weather being worse than in the morning. During that day we ran a distance of $12\frac{1}{2}$ miles from the head of the lake.

At 5 p.m. we encountered a very heavy wind from the south-west, which made it very hard to pitch camp, but left us with no mosquitoes.

June 26th. Left camp at 9 p.m. Cloudy. Thermometer 56° ; south-west wind, moderate.

At 1 p.m. we beached our boat, and joined an Indian camp. We traded for furs and mocassins, and ate round one camp fire.

At 2 p.m. we again put out on the lake, and reached the foot of the lake at 3 p.m. Passed over shallow flats, and caught up with the scow containing Henderson and party.

Lake Bennett is connected with Lake Tagish by a very crooked and shallow channel known as Cariboo Crossing, the water being very narrow and not over one hundred and fifty yards wide. Tagish Lake is an irregular body of water with two arms, known as Windy Arm and Taku Arm. Taku Arm is really a larger body of water than that particular portion known as Tagish Lake, but Tagish Lake acquires its importance from being directly in line of travel between Lake Lindeman and Lake Bennett on the south and Lake Marsh on the north.

At 3.45 p.m. we got into wide water, and when rounding Windy Arm at 6.30 p.m. a gale overtook us and we tried to keep on our course, the boat shipped heavy seas, and we had to run before the wind. We were driven into a cove, and when we landed the boat was full of water. We beached the boat and hauled her on to the dry land, and in pulling in a troll line that we had out during the trip, we were surprised and delighted to find a 15-lb. salmon on the hook.

We landed a distance of eight miles from the foot of Lake Bennett, opposite some small islands and a river.

We pitched our camp at 7.30 p.m., built a large fire and put all our packages and clothes around it to dry.

June 27th. Thermometer 54° . Rain and fog, wind gone down.

In the morning we went up a small creek and prospected for gold, but only found black sand in the bottom of the pan.

At noon, we broke camp again, loaded boat and started at 1 p.m. The lake was like a sheet of glass. The fog lifted, and the sun came out. The scenery on either side was very grand. On the north side table-lands and mountains in the distance, and good feed; on the south higher mountains, but no pasture of any kind, rugged peaks; lake about three miles wide for short distance.

In the afternoon we had rain and thunderstorm, and headed for a boat in-shore at 7.30 p.m., but found her deserted. She had evidently drifted on the beach about two miles from the inlet of Taku Lake. The boat was about 12 feet long, 2 feet 6 inches beam, and made of hewed slabs. We found no name or anything on the boat, so we left her.

At 8.15 p.m. we got into the outlet of the Taku Lake, and ran with about a three miles' current.

At 11 p.m. that night we passed the old Tagish House, an old Lake House built by the Indians many years ago, and where yearly festivals and councils of war are held by the natives; it is surrounded by their burial grounds on either side of the river. We saw a large Indian camp and pulled into shore and traded different things for various kinds of furs, and I really think that they got a little the best of the deal.

At 1.30 in the morning we pulled out from the camp and drifted into Mud Lake, and camped on the wet ground at about 3 o'clock in the morning.

June 28th. Thermometer 70°. After leaving camp that morning we shot a martin at the head of the lake, also a great many ducks and geese. We did not leave the camp until noon, and owing to the lake being dead calm and mosquitoes in clouds, we had to take to the oars and row. That day we only made about six miles.

We pitched camp at 5.30 on a point of land, and at 6 o'clock a heavy squall and rain storm came on. The surf from the lake came high up on the beach which made us move our camp at least fifty feet further back.

Up to the present time the trip has consisted of heat, cold, rain, fog, heavy wind and mosquitoes all in one day, to say nothing of hard work.

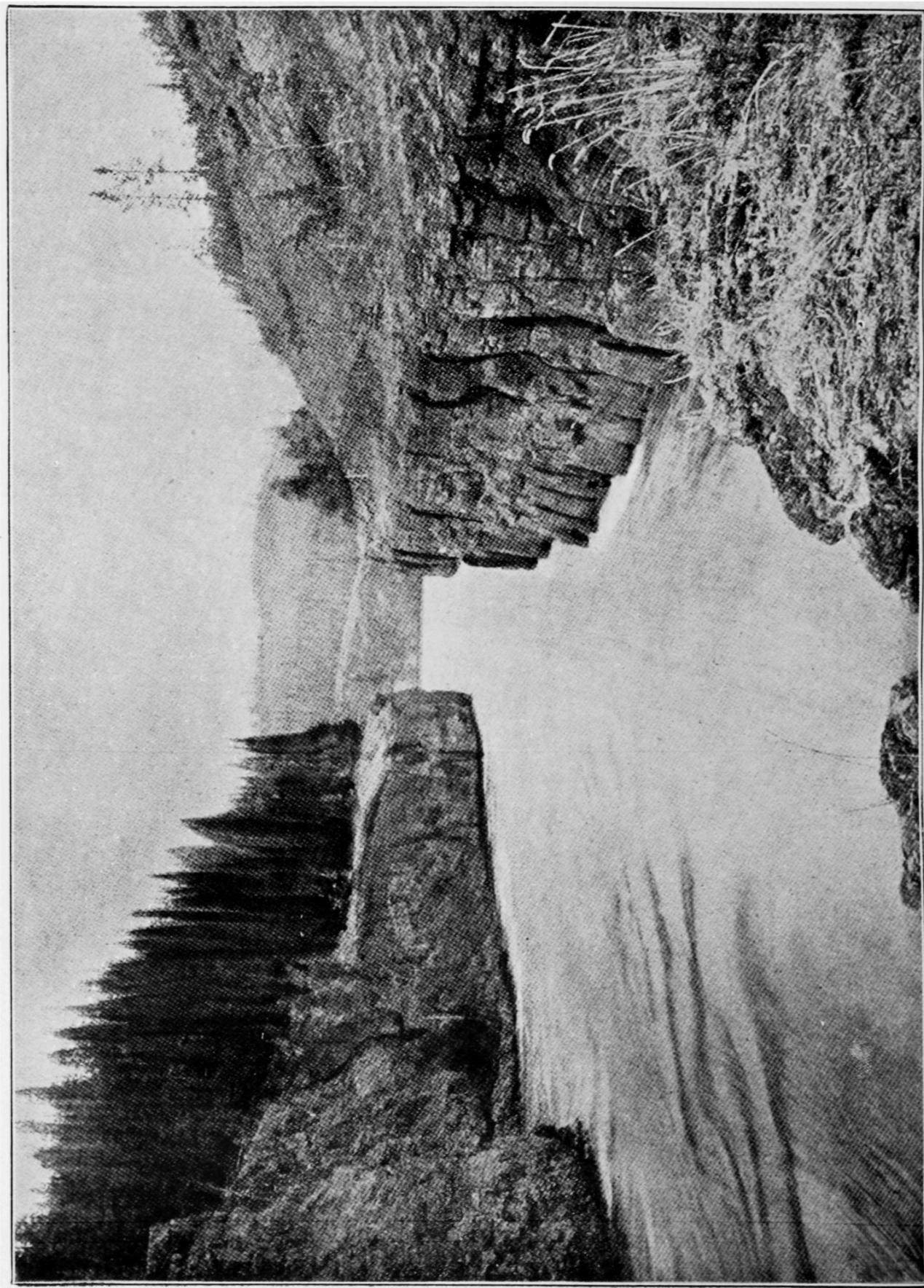
June 29th. Broke camp 8.45 a.m., the lake being dead calm again. Thermometer 89°. Mountains are now further from the shore, with country on the sides of the lake being much flatter and less snow.

We arrived at the outlet of the lake at 3.30 p.m. Passed small island on the right about one and a half miles from the outlet. Trolled and caught another salmon.

The outlet is a small stream about one hundred yards wide, level land on either side with a current running two and a half miles an hour.

Drifting down the outlet we passed one small Indian camp at 7 p.m., and went into one of their tents, owing to a heavy rain storm having overtaken us. As we got further down the outlet the banks on either side became perpendicular, and the water dark and deep.

That night we saw a cariboo on the side of a hill, and shot at least ten times without getting any meat. The cariboo went inland and we climbed ashore and followed it, and after tramping through the woods for at least two hours, we returned to the boat, and at twelve o'clock midnight we pitched our tent, and had to eat the usual fare, consisting of beans and bacon with frying-pan bread.



The Mills Canyon, on the Trip from Dyea to Dawson.

June 30th. Up to now we had made a distance of 215 miles, counting Juneau as the starting point.

At 8 o'clock that morning we left the camp and headed for the Miles Cañon. We drifted with the current at a speed of about two miles an hour, and arrived at the mouth of the cañon at 2 p.m.

Most people are very much afraid of the cañon, and they go to the enormous trouble of skidding their boat over the portage, which is a long and tedious operation.

We took out the most valuable of our cargo and examined the cañon before going through. We then took our boots and over-shirts off, and started through the rapids. The water was very rough and the channel narrow. It looks very dangerous, but really before we knew it we were through, and in an eddy at the other end. I think we travelled that mile in less than five minutes.

The cañon is a wonderfully beautiful bit of scenery. It is cut through a horizontal basalt bed, and the walls range in height from fifty to one hundred and twenty feet, being worn in all sorts of fantastic shapes. The average width of the cañon is about one hundred feet, and as the average width of the river above is about seven hundred feet, the force with which the great volume of water cuts through the steep ledges of rocks may be imagined.

A few remarks about the cañon, for the guidance of intending prospectors, would not be out of place.

Arriving in sight of the cañon, it is necessary to pull into an eddy on the right-hand side of the river. After shooting through the cañon pull hard to the right just at the foot, you can then land without difficulty, and load up your boat and proceed through the rocky channel to the head of the White Horse Rapids. This is not a dangerous thing to do, providing the men in the boat do not get in any way excited, and are competent to handle a boat properly.

July 1st. We had made a distance of 226 miles from Juneau. Thermometer varying from 60° to 95°. We resumed our journey at 9 a.m. Packed everything securely in boat, covered them over with tarpaulin and shot the rocky rapids between the cañon and the White Horse, a distance of about one and three-quarter miles.

We again unloaded our boat and packed everything over the trail to the foot of the Rapids; and owing to our having lost our rope, we also had to pack our boat, which was a very long and tedious operation.

On the rocks of the White Horse Rapids, we saw at least three boats stuck on the rocks and perfectly useless.

We met one man at the Rapids who had started into the Yukon alone, and had lost his boat and everything he possessed in it. He told us he had then been over two days without anything to eat. We, of course, fed him, and took him with us about two miles down the river, where we encountered another party who had more room in their boats than we had, and they very kindly took him with them down to Yukon.

July 2nd. Thermometer 65° to 85°. That morning we finished packing over the trail, and again loaded boat and resumed our journey at 2.30 p.m.

Below the White Horse Rapids, the river is very crooked, the scenery grand and beautiful, with ducks and geese in flocks.

Running down with a swift current, we went over some rocks and splintered the bottom of our boat. We pulled hard for the shore, and within two hours we had it patched up and ready to launch again.

At 7.30 p.m. we again started, and camped for the night at 10.30, both dead tired, having made the distance of 243 miles.

July 3rd. Thermometer 70°; light south-west wind. Broke camp at 11 a.m., and ran with a two to four mile current. At 12.30 p.m., we reached the head of Lake Labarge, that being the last of the chain of lakes.

Two miles from the head of the lake we spied a large Indian camp on the left-hand side.

We pulled for shore, and three canoes manned by Indians put out to meet us. We landed and commenced trading with the Indians. They appeared to me to be very obstinate, and inclined to be quarrelsome. They had managed to procure numerous bottles of whiskey from a man who was going into the country, and was only one day ahead of us.

We pitched our camp and the Indians sat all round us, each one with his rifle, and talked in their own language, which neither of us understood.

July 4th. Thermometer 65°. We managed to leave camp without getting into any trouble with the Indians at 11.25 a.m., and two miles further down the lake we came upon a white man's camp; the party were quarrelling among themselves, and building another boat for some of their members who had refused to travel any further with the others. That, of course, delayed matters three or four days.

We camped that night on the side of the lake, only having made a distance of two miles, or 258½ miles from Juneau.

July 5th. We again loaded the boat and headed across Lake Labarge, with thermometer at 65° and a light wind.

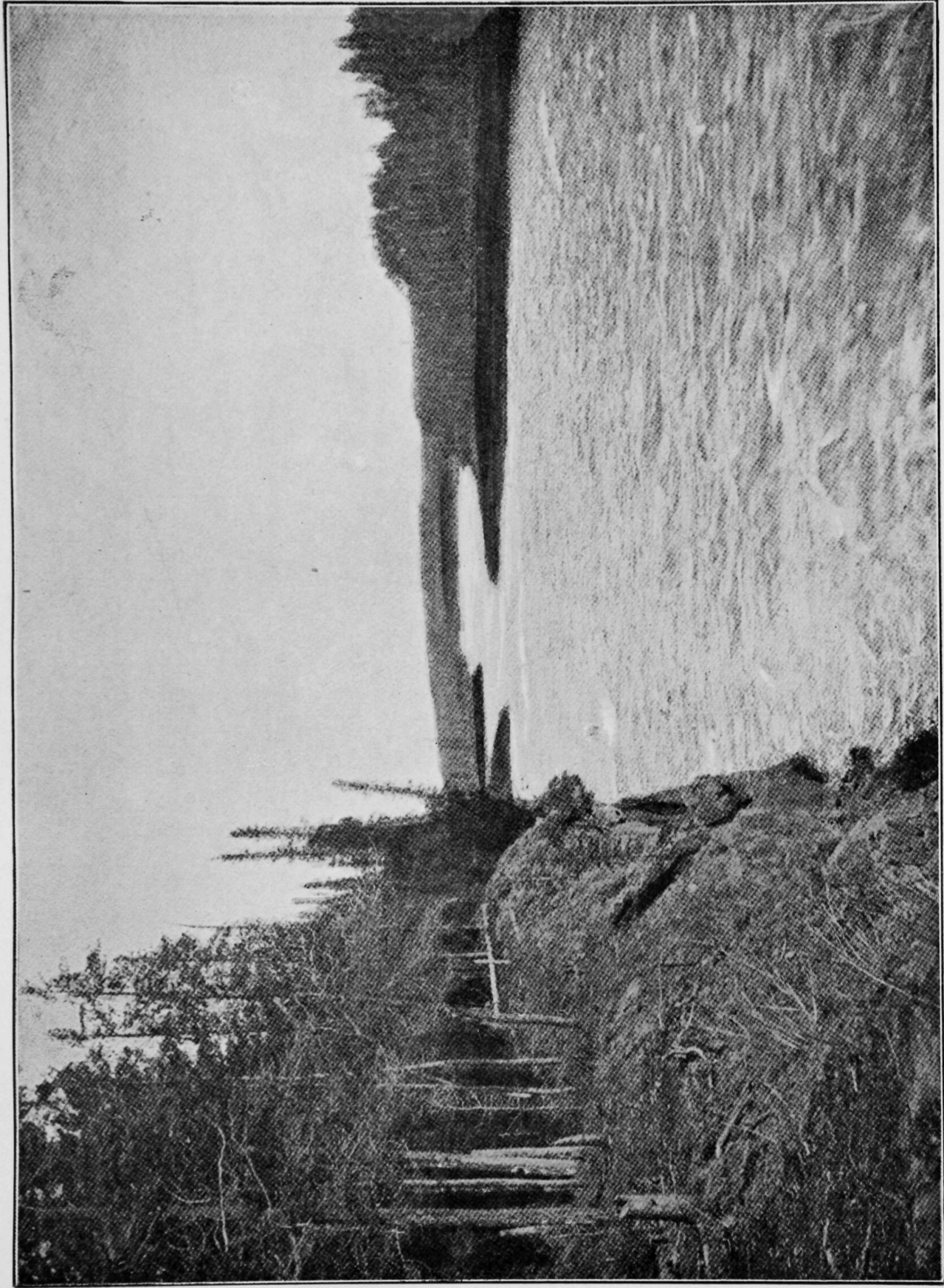
We landed four miles from the head of the lake, pitched camp, took our rifles and went back into the mountains and hunted for moose and cariboo, but without success.

July 6th. Thermometer 55°; south-west wind. Broke camp and set sail at 8.45 a.m. and ran with a fair breeze until mid-day, then ran in shore to a small Indian camp. The Indians were on their way to Dyea with furs to trade for provisions. We managed to trade for some martin, fox and otter skins, and at 3.45 p.m. we again set sail and put into Cove at 5 p.m. for supper.

Started at 6 p.m. and arrived at foot of Lake Labarge at 10 p.m. The best channel at the outlet of the lake is on the right hand side, in the middle, the water being very shallow, which only just covers the sand bars.

July 7th. Thermometer 70°; south-west wind. Left camp at 11 a.m. and drifted down the river with a two to three-mile current at the start. The current gradually increased and there is between three and four miles of fast and white water in places between the foot of the lake and the mouth of the Hootalinqua River. Very rocky, river evidently very high at the fall of the year. A great deal of overflowed land on either side. Mountains and land well timbered.

Passed the Hootalinqua River at 7 p.m. Met a party of miners going up river for the purpose of mining on the Hootalinqua.



White Horse Rapids.
On the Trip from Dyea to Dawson.

Camped at 10 p.m. on left-hand side of river. Signs of old camps and mining holes. Made a distance of 326 miles from Juneau.

July 8th. Thermometer 74°. We landed at a mining camp at 2.30 p.m. Five men were waiting for the water to get lower, to enable them to mine the bar diggings. They told us that they only made during the time they worked an average of about \$8 a day, which did not by any means pay them. We were told by a miner, named Walsh, that a man was found dead at the mouth of the Little Salmon River, named Macdonald; he was supposed to have died from the cold, as no provisions or bedding of any quantity were found in his camp. You would find it easier to believe the most wonderful yarns as to the wealth of the country, than some of the hardships I have known men to undergo.

Resumed journey at 3.15 p.m., camped at 5.30, and again went back into the mountain to hunt cariboo and moose, without success.

Up to the present time, the country, in my opinion, has been greatly over-estimated, the amount of gold taken out being very small. The Hootalinqua River's best yield for a season's work mined by two men, was a small baking powder can full of dust, value \$800.

July 9th. Thermometer 65°. Heavy rain during the night and morning. Left camp at 1.15 p.m., stopped at Indian camp at mouth of Big Salmon River, and traded with the Indians for meat, &c. Heavy rain and thunder storm came on, so we pitched our tent, and rested until 7.30 p.m., and then resumed journey. On the right hand side of the river we saw a silver-grey fox, so at once landed, took our rifles, climbed the high mountain, with the intention of shooting the fox. The fox, however, ran into a hole, and we had to return without the pleasure of his company. We camped for the night at 10 p.m.

During the night numerous Indians came down to the camp, and wanted guns, watches, socks and various coloured handkerchiefs, and cartridges; so we traded what we had with them.

July 10th. We left camp at 9 a.m. Thermometer 70°; light breeze. We passed numbers of diggings all along the river bank, old mines evidently long ago worked out and deserted. Mosquitoes and other kinds of insects very numerous. The river, after passing the Hootalinqua is very dirty; we camped at midnight, having made three hundred and eighty miles from Juneau.

July 11th. Thermometer 85°. We left camp at 8.45, and at 1.15 arrived at George Cormack's. This is a trading post consisting of nothing but a square log building about 18 by 24; the place was deserted, a notice on the door stated that Cormack had gone after provisions and would be back during the summer. It is to this man (George Cormack) that the honour belongs of discovering the richest placer mines in the world; much of his time has been spent with the Stick Indians at Tagish House, his wife being a native of the Stick tribe.

At 10 p.m. that night we arrived at the Five Finger Rapids, and at 10.15 we shot the rapids without unloading a pound of stock from our boat. We ran through perfectly straight in the right-hand channel, the result being that we shipped a great deal of water. The falls are about three hundred yards long. One mile below the falls we landed on an island and took everything ashore, hauled the boat out of the water, and pitched our camp.

July 12th. We caulked and pitched our boat, and left camp at 1.15 p.m., arrived at the Rink Rapids at 2 p.m., which is a distance of about four miles from the Five Fingers. We hugged the right-hand bank and found a good channel we ran through without any difficulty, and without taking any water in the boat.

The scenery along the river gets a great deal prettier after passing the Five Fingers, numerous small islands are scattered in the centre of the river, the river being from two hundred to five hundred yards wide. Thermometer at noon reached 100°.

We travelled all night and arrived at Pelly River Post, known as Fort Selkirk at 3.15 a.m. The current for the last ten or twelve miles running from four to five miles an hour.

The camp at Pelly River consisted of store, dwelling, mission, church, school-house and an Indian village, and in the whole camp we only found one white man, named Davies, and he seemed to be very much afraid of the Indians. The distance to this point from Juneau is, approximately about 482 miles.

Old Fort Selkirk was originally a trading post and fort. Hardly any ruins of the old original fort are now visible, but the Alaska Commercial Company of San Francisco have built new buildings, and put Mr. Harper, an old pioneer of the Yukon, in charge; they do most of their trading with the natives, Pelly River being a very rich fur producing country.

July 14th. We remained at Pelly River Post; provisions were very scarce, in fact, nothing to be had with the exception of flour.

The following prices were asked for:—

Flour	..	..	..	..	\$12 a cwt.
Sugar	..	..	..	..	35 cents per lb.
Coffee	..	..	..	..	75 " "
Tea	..	..	..	..	\$1 " "
Bacon	..	..	..	..	40 cents "
Milk	..	..	..	..	50 " "
Salt Pork	..	..	..	..	50 " "
Beans	..	..	..	..	20 " "
Dried Apples	..	..	..	..	35 " "

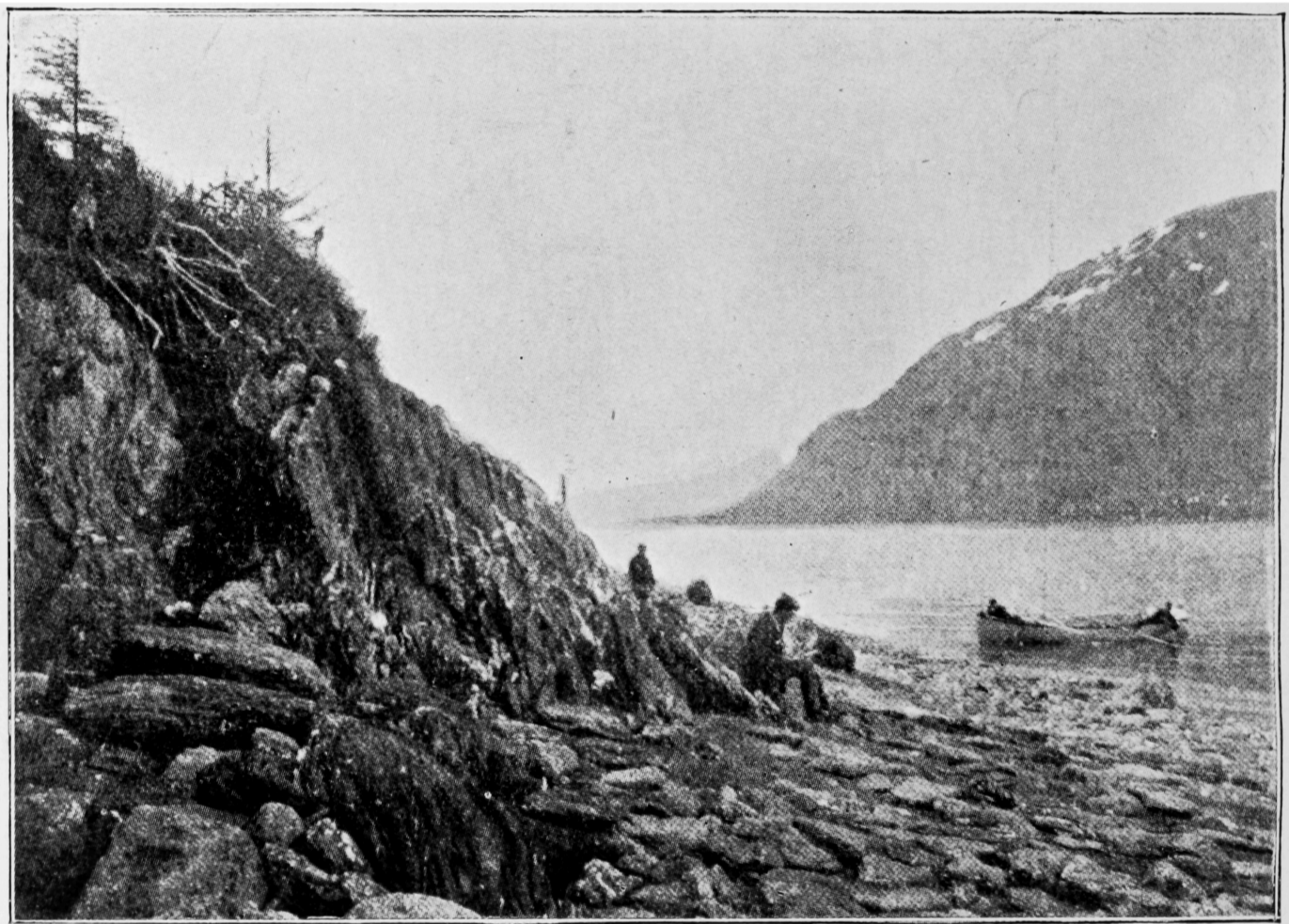
and they paid for skins or furs in trading:—

Martin	..	..	..	..	\$1.50
Beaver	..	..	..	..	\$3
Silver-Grey Fox	..	..	..	..	\$25 to \$95 each.
Cross Fox	..	..	..	..	\$8
Red Fox	..	..	..	..	\$1.50
Mink	..	..	..	..	50 cents.
Lynx	..	..	..	..	\$2
Land Otto	..	..	..	..	\$6
Bear	..	..	..	..	\$5 to \$20
Black Fox	..	..	..	..	\$50 to \$75

The Indians at Pelly River appeared to me to be very much like Chinamen.

During the last winter the thermometer at Pelly River registered 79° below zero for ten days at a time.

July 15th. Thermometer 80°; light rain. To show how disheartening mining often is, while we were at the post, two men arrived from up the Pelly



A Party of Pioneers landing opposite Dawson City, going to locate Mines.

River, and they had given up all idea of mining, and told us that where they came from, 30 miles up the river, only two or three dollars a day could be made. They were quite out of provisions and intended to winter at Fort Selkirk.

July 16th. Thermometer 80°; rained all day. Having got tired of carrying our rifles we traded them for some martin skins.

July 17th. Thermometer 70°. Resumed journey at 1 p.m. At 6 p.m. we camped in a heavy rain storm; a large cloud burst over us and soaked us right to the skin. We dried ourselves and resumed our journey at 10.45 p.m. and camped again at midnight.

July 18th. Thermometer 60°; heavy fog. Left camp at 6.50 a.m. and ran with about a two-and-a-half-mile current. Encountered numerous rain showers. Rain all day; at 6.15 p.m. passed the White River, which is described as the most wonderful of all the great systems, and enters the Yukon from the west. The volume of water is vast; it is muddy in colour and the current flows at the rate of eight or ten miles an hour. It discharges itself into the Yukon with such force that the roar can be heard for a long distance and it muddies the larger river until the waters of the two can hardly be distinguished. The White River comes from a glacier region and is supposed to flow over volcanic deposits.

We again camped for the night at 6.45, having made a distance of 558 miles by our own calculations from Juneau.

July 19th. Thermometer 50°; heavy fog. Left camp as early as 6 a.m. and ran down river with a three-mile current. Passed the old celebrated Stewart River at 8 a.m. The only dwelling near the mouth was one old cabin situated on the right-hand bank, and an old abandoned trading post.

Stewart River, up to the present time, has yielded more gold than any other river in the country. Some men make as much as two or three thousand dollars in from two to three weeks time actual work.

The only diggings worked on that river were the Bar Diggings, which has nothing but fine surface gold.

A brief description of placer mining and hydraulics will, I think, be interesting to everybody unacquainted with these methods of mining.

There are four stages in the development of newly-discovered goldfields such as those which have been brought to light in the Yukon Basin. First, come the men with crude outfits and few resources, who with pan and pick gather the gold that lies near the surface, washing out the grosser earths and leaving the precious metal by itself. This is placer mining in its simple form. After the gold lying on the surface and most readily at hand has been exhausted, a little more complicated process is called into play. This is conducted by groups or associations of miners who use "long Toms" and rockers. Most of the gold on the Stewart was found not less than from fifty to one hundred miles up the river; the river being swift and shallow, not more than ten miles a day could be made. The men arriving on one of these bars, set up their rocker, then shovel the sand and gravel into a small box, and with one hand ladle up the water from the river, and with the other hand keep on rocking this gravel until all the gold has worked through the bottom of the rocking box, which is made with a piece of perforated iron, the gold and fine sand washing through on to a blanket underneath. The remaining gravel in the box is then thrown on one side, and a fresh supply put in. After rocking

for three or four hours, the men will take the blanket from the rocker and put it into a pan full of water—the gold, of course, dropping from the blanket and remaining in the pan.

Hydraulic mining is the third stage. In hydraulics water is brought from a long distance and applied to the pay dirt at great pressure in order to separate the gold from the dross. Last of all comes quartz mining, or tearing the gold by main force out of its beds in the rocks beneath and separating it by means of stamps and pestles.

The history of placer mining is full of romance. It is as old as the world itself.

Gold dust and nuggets came in exchange to the Greeks from the barbarians of the north centuries before the birth of Christ. The first placer mining of which there is any record was carried on by digging the sand or gravel, mixing it thoroughly with water, and then pouring it over floating platforms covered with skins, in which the gold settled, while the lighter sand flowed off with the water. In ancient times all gold was obtained by washing. The wealth of the Indies consisted in golden sand which their rivers washed down from the gold-bearing mountains. So it was with Russia, Africa, Australia and California.

All the earlier mining, of which the records are so many and so fascinating, was done by placers in the old primitive manner.

At 2 p.m. we arrived at Sixty Mile Trading Post. The post at that time was composed of a large storehouse, seven or eight log cabins and a sawmill. Five men were working in the mill, and turned out between three and four thousand feet of lumber a day; lumber at that time sold for \$80 a thousand.

No supplies of any kind were to be had at the post.

The prices of goods at Sixty Mile were a shade cheaper than at Fort Selkirk, owing to it being closer to the mouth of the river.

The men working in the sawmill at that time received from six to ten dollars a day.

During our stay at the post a skin canoe, manned by eight Indians, arrived at 7 p.m. They came well supplied with furs, and when they found they could get no provisions at the post, they seemed greatly disappointed, and immediately started down the river to the next post, which was, at that time, one hundred miles distant.

July 20th. Thermometer 64°; light wind; weather clearer.

Another canoe load of Indians arrived that morning, but only a few furs changed hands.

The next arrival at Sixty Mile was a large scow, which contained a small dredging outfit. The people had brought this dredging machine over the summit and down the lakes, at a great deal of trouble and expense, and after trying it in numerous places they found it was no good, although in my opinion, a dredging machine anchored near one of the gold bearing bars (provided a proper dump and set of sluice boxes were made to hold the gravel) would prove a much quicker and more satisfactory way of working the bar diggings, than by the old primitive method of rocking out by hand.

Two Indians of the Pelly River tribe were staying at the post. They were good Indians, well-dressed, and belonged to the Mission at Fort Selkirk. They get a good education, and the result is they beat their poorer and more

unfortunate and uneducated brothers out of their furs. One instance I will quote; one of these educated Indians paid an uneducated Indian only \$6 for a black fox skin, after telling him that all the skin was worth. He then turned round and sold the same skin to a post trader for \$85.

Sixty Mile Creek comes in on the left-hand side of the river going down. It is about a hundred yards wide, with a swift current, with numerous riffles and rocky passages. The trading post and mill are on an island opposite the mouth of the Sixty Mile Creek on the right-hand side of the left-hand channel going down the Yukon.

We left camp at 6 p.m., and ran down the river with a three to four-mile current.

Passed Indian Creek which comes in on the right-hand side. At that time very little was known about that creek, but now it is one of the important creeks in the new Klondyke. We met three prospectors returning, and they reported having found but very little gold.

That night at 11.15 p.m. we pitched our camp on a sand island, having made the distance of six hundred and seventy-five miles from Juneau.

July 21st. Thermometer 70°; light breeze. Left camp at 8.30 a.m., and at 9.15 pulled inshore to the log camp where we found two men cutting logs for the North American Trading and Transportation Company's mill at Fort Cudahy. They told us that at that time there were about ten men scattered up the Stewart River for a distance of seventy miles, not making more than a few dollars a day at mining.

A party of four men had lately passed heading for the Stewart River, with the intention of going one hundred and seventy miles up. They expected to find rich placer or gulch diggings.

We did not stay long at the camp, but pushed on, and at 1.30 we passed the mouth of the now celebrated Klondyke. Little did I think at this time that it would be to this creek I should owe my fortune after years of suffering and hardships; we, as others had done, passed by without notice the creek that was to be one of the most famous in the history of gold mining.

At that time two white men were located at the mouth of the Klondyke fishing for salmon. I helped them haul in their nets, and we found numerous salmon varying in weight from fifteen to fifty-eight pounds.

The fishermen reported to us that two men had been drowned in the river a short distance above, one named Austin Wolfe and the other named Olsen.

July 22nd. Thermometer 85°. Left camp at 7.30 a.m., in a heavy rain storm. Passed old Fort Reliance at 8.45 a.m. No remains of the fort are to be seen, only a few log huts. Signs of copper veins on both banks.

Fort Reliance is situated sixty miles below Sixty Mile Creek and forty miles above Forty Mile Creek, the two creeks taking their names from the distance they are respectively from Fort Reliance.

At 2 p.m. a cloud burst over us, and a hurricane turned our boat and blew her broadside on to the beach. We managed to land and bale the water out. We encountered storm after storm for six hours, but would not pitch our camp owing to the short distance we had to go to reach our destination.

At 7.15 p.m. we landed at Bishop Bumpus' Church, and had the pleasure of meeting a young lady by the name of Miss Millett, who was devoting her time and energy teaching the Indians to read and write, and also guiding

them to a knowledge of the Christian religion. To see in a wild country like this, a young and pretty woman giving up her life to teaching Indians, seemed to me nothing short of a martyr's life; surely such sacrifice as this will receive from God its highest reward.

During my stay of three-and-a-half years in the country, I have noticed with a great deal of pleasure, the amount of good the Episcopalian Church has done. Their church and missions are not only open to the Indians, but the most dissipated and reckless miner in the country is always welcome. I am glad to say that the missions of the different denominations, especially that of the Church of England and the diocese of Bishop Bumpus has done a very great amount of good.

After staying a few minutes at the mission, we again jumped in our boats, and at 8 p.m. we landed at the old celebrated Mining Camp called Forty Mile, which was, at that time, the principal mining camp of the Yukon.

The moment we landed I met, with gladness, some familiar faces amongst the crowd, men whom I had known in Juneau in days gone by. They helped us pack our provisions, bedding, etc., and take them up to their log cabins, having cooked us a nice supper, and offering us the full use of the cabin, we turned in and took the rest of satisfaction, having got to our journey's end.

We made the trip from Juneau to Forty Mile, a distance of about seven hundred and fifty miles, in less than two months, and had we not spent a great deal of our time taking pictures and views of the country, we could have made the trip in much less time.

The trip is not so hard as many make out, providing a man has a certain amount of frontier experience, can handle rough tools, and understand boating in bad waters.

A mining camp is always a spot of intense human interest. It is the breaking of the frontier—the first contact of civilisation with the wilderness. Forty Mile Post is a characteristic gold town.

It consists of the Company's stores, a barber's shop, two bakeries, two restaurants, billiard parlours, distilleries, saloons, opera house and about eighty log cabins.

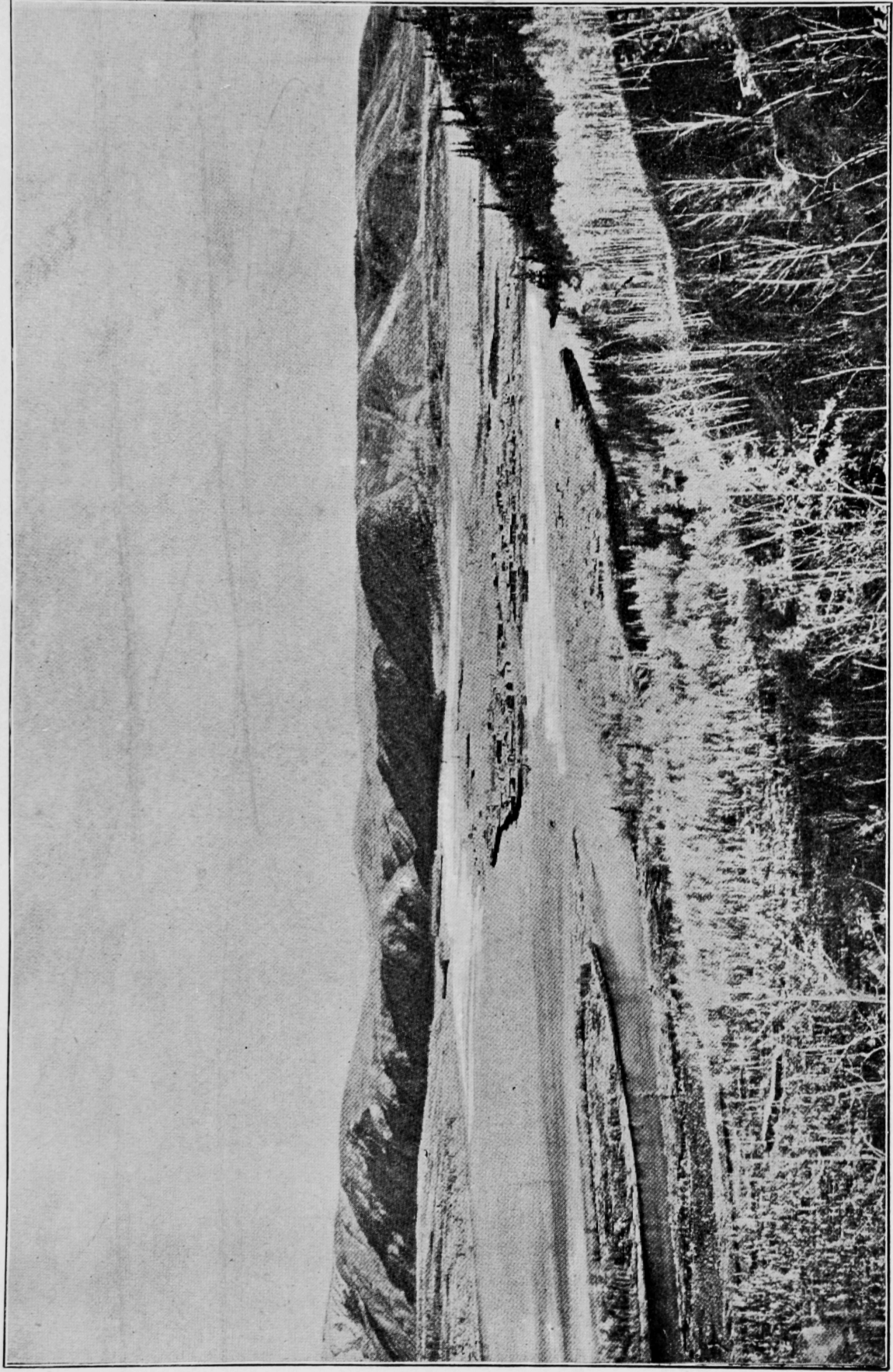
The only amusements indulged in at that time were gambling, drinking and dancing with the squaws. The principal sport with mining men is found in gambling. Round the table they gather after night-fall and play until the late hours in the morning. They play high too; sometimes it costs as much as fifty dollars to draw a card. A game with two thousand dollars as stakes is an ordinary event. If a man is fussy and quarrelsome he is told to get out of the game, and that is the end of it; in a few rare instances it ends in bloodshed. The camp, of course, contained some bad men but the most damage they did was with their mouth.

The fact that there has never been a lynching affray there is testimony of self-government where the consent of the governed has been secured.

One can hang a sack of gold dust inside of his cabin and it is perfectly safe.

The most prevalent trouble is scurvy, which results from scarcity of vegetables and fresh meats.

During the first two days of our stay at Forty Mile we did little but lounge, smoke our pipes, and take things easily generally. My thoughts were constantly with the old folks in England and with the sweetheart so far away.



Old Town of Forty Mile.

When I thought how long it might be before I saw her again I could not keep the sadness from my heart; shut out from the civilised world with hardly any means of communication made it harder still.

We asked numerous questions regarding the mines and of course were kept very busy telling all the news from the outside world, some of the miners not having seen any civilisation for nine or ten years. Probably in no other mining camp outside the Klondyke is so good order maintained, such respect for the life, property and the rights of others.

There were about fifty men in the camp anxiously awaiting news from Birch Creek—this was a newly discovered creek situated two hundred and forty miles below Forty Mile, where some men had wintered during the winter of 1893 and 1894, and the people were waiting for them to return to Forty Mile and get what news they could of the lower country.

The main creeks surrounding Forty Mile Post at that time were: Miller Creek, Glacier Creek, Davis Creek, Poker Creek, Franklin Creek and sundry other small creeks, all situated between forty and seventy miles from the post. The report from Miller Creek was that some claims were paying as much as seven hundred ounces for one week's work, the work being done by about eight men.

Some excitement also prevailed on Glacier Creek, and a rush was made to it by the miners from the surrounding creeks. They staked out claims for a distance of seven miles, and reports came in to the effect that \$7 to the pan had been taken out of a prospect hole.

The supplies in Forty Mile were giving out, and a steamboat was expected in every day.

Just a little previous to this a man had died at Forty Mile, and his effects, consisting mostly of liquor that he had brought in from Fort Simpson, were sold at auction and brought the following figures:—

Rye whisky	...	...	...	\$15.50	a gallon.
Bourbon	...	...	...	\$16.50	„
Brandy	...	...	...	\$20	„
Rum	...	...	...	\$20	„

His other effects, consisting of provisions, clothing, &c., brought very large figures.

The day after the sale a report came from Stewart River that an old pioneer was drowned ninety-five miles up the river.

One miner returned from Davis Creek with sacks of gold dust containing about \$1,400.00, and reported that the diggings on Davis Creek were good.

At eight o'clock on the morning of the 29th July, the expected steamer was sighted, when the greatest excitement prevailed. She was the Alaska Commercial Company's steamer "Arctic." Every man got his rifle and fired off numerous rounds of ammunition, and every Indian dog in the camp commenced to howl.

As the steamer drew near, the decks were seen to be crowded. These steamers are all stern-wheel vessels, about one hundred and twenty feet long and thirty-five beam, and run between St. Michael and Fort Selkirk, a distance of about 1,850 miles. After landing the passengers from the "Arctic," nearly everyone at the post got drunk, for the arrival of the steamer is one of the great events of life in the Yukon.

It took about three days to discharge the cargo from the "Arctic," and everybody was willing to lend a hand.

The boat brought up news that rich diggings had been discovered in the Birch Creek district, and the result was that as soon as the men could get their outfits from the store they jumped in their small boats and stampeded for the new mines. After discharging, the steamer left for the up-river posts, namely, Sixty Mile and Pelly River.

After staying some days at the post and making the acquaintance of all the miners, we jumped into our boat and poled up Forty Mile Creek, a distance of thirty miles; then, taking our packs on our backs, we travelled a distance of another thirty miles up and down the mountains, through swamps, and finally arrived at Miller Creek, then known to be the richest creek in the country.

Miller Creek is a small creek not over six miles long. Some of the claims were paying fairly well, while others were not paying at all.

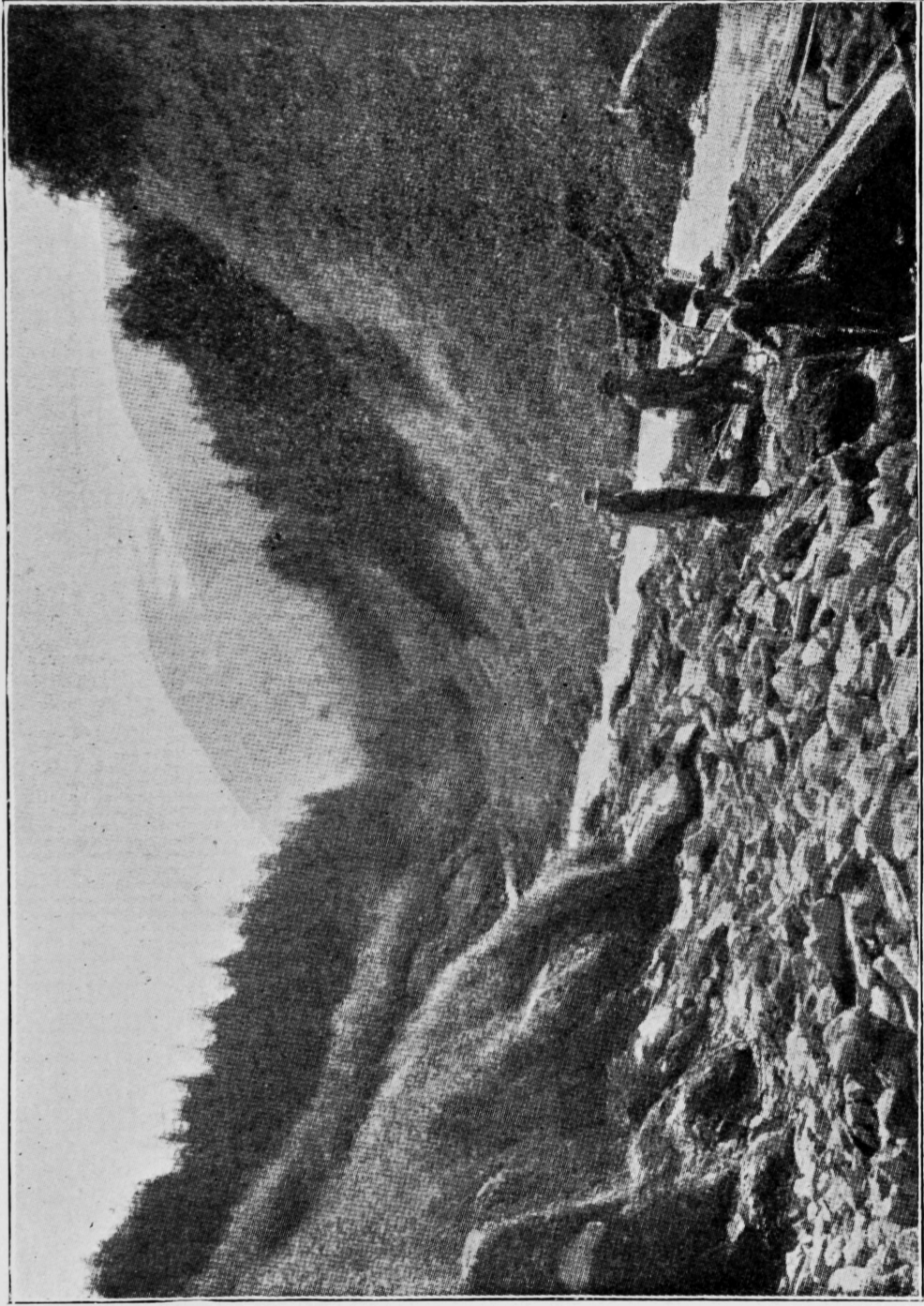
Arriving at Miller Creek at 10 o'clock at night, and walking down the creek, we passed a tent which evidently contained a noisy and drunken crowd. One man came out and told us to come in and take a drink. Of course, we accepted. We were asked every kind of question, and, I suppose for our benefit, one man offered to bet he could shoot another man's leg off. The fellows told him anybody could do that, and he, being the best shot in the camp, said, "Well, by God, see me shoot his ear off!" He did shoot, and took off a patch of hair. The man he shot at was a man very much disliked in the camp, and he evidently thought it best to get away, so he ran out of the tent, and another man, who evidently had a spite against him, picked up a shot gun, and fired a charge of buckshot at him. The man kept running, and they say he didn't stop until he reached Moose Creek, a distance of thirty miles. We had to stay and drink, and before morning one man had his head broken with a pick handle, and numerous shots were fired without doing much damage. They are all good fellows—just a little wild at times. I am pleased to be able to state that the man who got his head broken was the seller of the whiskey. A few months later we forbid the sale of whiskey on the creek.

We stayed about three days on the creek and visited Glacier and Bedrock Creeks, but found nothing to justify our staying there, so returned to Forty Mile. My friend, up to now, seemed to have had enough of the ups and downs of a miner's life, so decided to leave the country and return to his home in Chicago. After bidding him good-bye on the deck of the steamer I returned to land, not a little sad at parting from my friend, who had also been my travelling companion since leaving Juneau. I had to now seriously think out what was best to do.

A few days later a man returned from Miller Creek, and wishing to join the stampede to Birch Creek, wanted to sell his property—claim No. 13, situate in the centre of Miller Creek.

I bought the claim for the small sum of \$500, and shortly afterwards, in November, having procured an outfit from the trading post, I loaded my supplies on a sleigh, hired four Indian dogs, and started over the snow and ice for the diggings.

After travelling a distance of thirty-five miles, I fell heavily on the ice and broke my left collar bone. Fortunately, at that time one of the dog teamsters or freighters, came down the creek with empty sleighs and his dogs



Placer Mining near head of Miller Creek.

on the run. He took me on his sleigh, and we travelled all that night to the post. Arriving at the post we found that no doctor was there, and three of the boys bound up my shoulder, which laid me up for six weeks.

Starting again for the diggings in December, I finally arrived, made my cabin fit to live in; the first work I had to do was to climb the mountain side on snow shoes and cut down dry timber, haul it down to the creek and commence building fires for the purpose of thawing out the frozen ground, and prospecting for gold.*

I drove down three holes a depth of from twelve to fourteen feet, and found nothing.

I then worked on the other side of the creek, and found about five cents' worth to the pan; every day the gold seemed to get coarser and more plentiful, which filled me with hope.

I then hired men to help me work the shafts, and had to pay them \$10 a day, and we worked until the water ran in the spring, when we started sluicing.

After sluicing the dirt that we had taken out during the winter, I cleaned up the gold and found to my dismay, had not enough to pay the men their wages.

Not knowing what to do, and not being able to work this ground in the summer time, I went across the mountains to Glacier Creek, and whip-sawed lumber for some of the mine owners at 10 cents a foot.

After sawing thirty-six hundred feet, I returned to my old claim on Miller Creek, paid the men their wages, and started working in the side hill, in the hope this would show better results, but only made about \$4 a day.

That fall I decided to leave the claim and sold it for \$250, just half what I paid for it besides having spent one year working hard, run in debt to the stores for provisions and had nothing to show for it. I had to admit my first mining venture was a failure indeed.

That winter, not knowing where to mine, I borrowed the sum of \$700 and bought a dog team and during the winter of 1895-96 I travelled a distance of over twenty-nine hundred miles, freighting supplies to the different creeks for the sum of ten cents per pound, and in the spring of 1896 I was not more than even with the country.

During my eleven years' experience--and most of that time has been spent on the frontier—I never experienced harder or more unpleasant work than driving a dog team through the snow with the thermometer varying from 30° to 70° below zero.

Dog-teaming is unknown to most people so will give a little explanation of what it is and the hardships that have to be put up with.

On getting up at 5 o'clock in the morning breakfast has to be cooked by oneself, then go out in the dark and whistling in the dogs, harnessing them. Out of a team of seven dogs there are always one or more that have serious objections about coming to the collar, the result is, he runs under the bunk or table and in pulling him out by the neck everything in the cabin is upset. After getting the string of seven dogs hitched up, the door is opened and you tell the leader to go ahead, and after getting outside hitch on the sleighs, go over to the trading post, wake up one of the clerks and load about a thousand

* This is fully explained on page 78.

pounds of supplies that you are going to take to the creeks on the sleighs. By that time it is about eight o'clock in the morning and still dark, from the post you go down to the river and the trip is started.

Eighteen miles from the trading post is a creek called Brown Creek, and at the mouth of that creek there is a log cabin, which cabin we always try to reach the first night.

Sometimes it is as late as six or seven o'clock in the evening when we arrive, having pulled the sleighs all day, and having had nothing to eat, with the exception of a piece of dry salmon, not caring to waste the time to stop in the middle of the day and build a camp fire by which to cook food.

Arriving at one of these stopping places, the first thing to do is to unharness your dogs, then take everything off the sleighs, and pile them on a cache, built about six feet from the ground. If the goods are left on the sleighs overnight, the dogs, and sometimes wolves, will try their hardest to tear them to pieces, and will in fact eat up anything they can get at.

After caching the freight, the bedding, mess box, that is what you carry your own food in, and dog food has to be packed up to the cabin. You then take your axe and go out in the deep snow, and cut down some dry trees, take them to the cabin and build a fire. You then look through your mess box and see what you have to eat.

During the trip over the rough ice the sleighs very often tip over, and I have found from experience, that a can of syrup or honey, no matter how tightly sealed, is sure to break open and run over everything in the mess box, which gives the other articles a very unsavoury and sticky appearance.

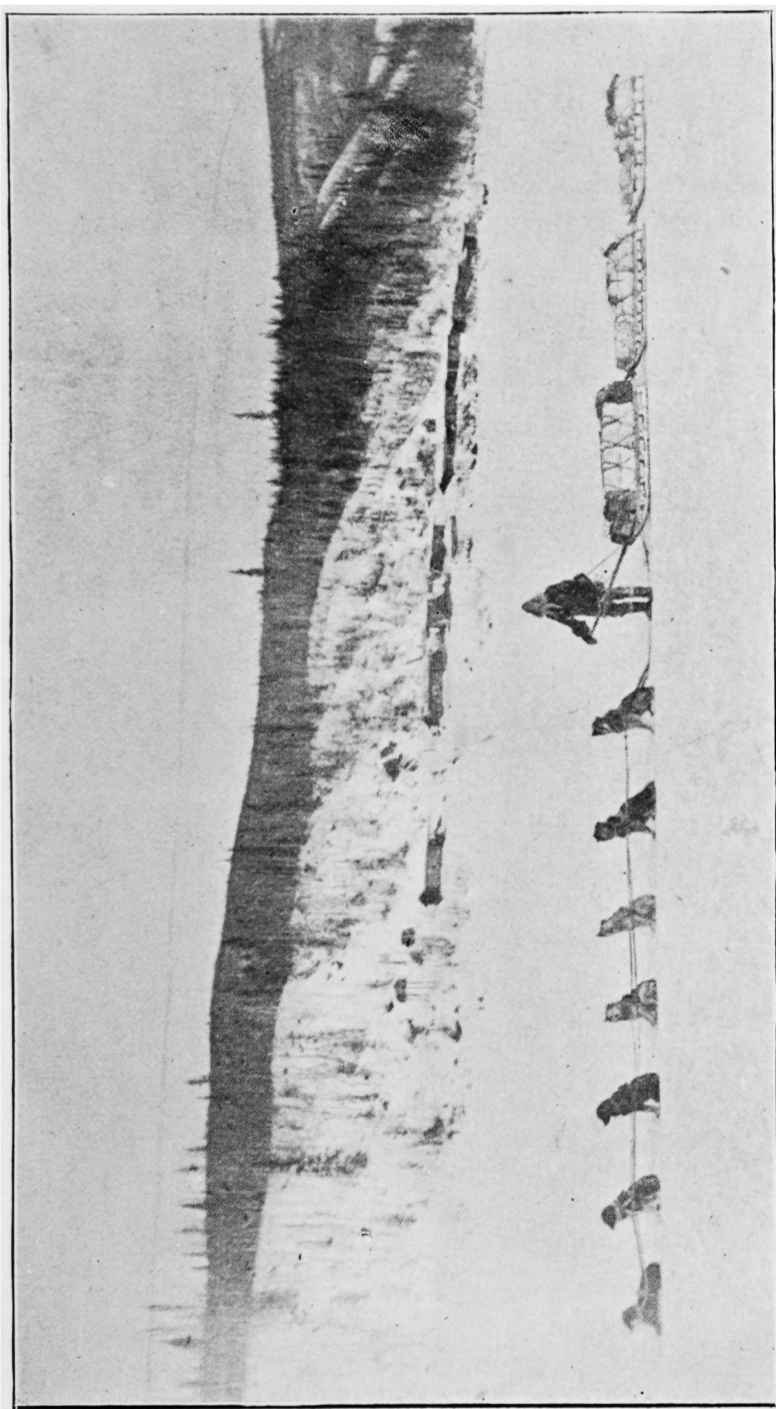
Our meals generally consisted of fried bacon, beans, and frying-pan bread or slapjacks.

Frequenters of the London restaurants are not perhaps acquainted with the miner's frying-pan bread.

We take a pan of any kind, more often a pan that the dogs eat out of, and put in three or four handfuls of flour, some baking powder and a pinch of salt, and mix the whole together with water. We then take our frying-pan and grease it with a piece of bacon. A handful of this dough is then put into the pan and the pan put on the fire. After cooking the bottom of it, we take the frying pan off the fire and stand it up in front of the fire, so that the heat reaches the side uppermost in the pan. Sometimes the bread raises and is quite light, but more often it is very heavy.

After cooking and eating our own supper we take down to the river our axe and a large bucket, chop the ice and fill the bucket, pack it up to the cabin, and put it on the fire to melt. We then take the dried salmon and put it in the water and let it boil for about ten minutes, then we put in enough flour to make it like a mush. The bucket is then taken out and put in the snow to cool, and while that bucket is cooling in the snow you have to stand over it with a big club to keep the dogs from upsetting it. After the food has cooled, we dish it out in seven different pans and feed the dogs. By that time it is generally eleven o'clock at night.

We then go into the cabin and roll up in our fur rugs without taking any clothes off and sleep until five or six o'clock in the morning. Then the harnessing and catching the dogs commences. After catching the dogs and



Forty Mile River.
The dog team I drove 2,900 miles in eight months.

hitching them to the sleighs, the provisions are again loaded on, the bedding, mess box, &c., packed down and put on the hind sleigh, and we start for the next stopping place—a distance of over twenty miles.

In the event of a snowstorm during the day, which very often occurs, we are unable to make this stopping place; the dogs give out, and the only thing to do is to build a large fire and camp out for the night. On such an occasion one does not go to the trouble of building a cache and unloading the sleighs, but generally sits up round a camp fire all night.

That occupation had a great deal of sameness about it for eight months, and at times being caught out with the thermometer at 60° below zero, I have laid down near the sleighs never expecting to see morning light again, for to sleep at such times as these out in the open is almost sudden death to the strongest of men.

In my opinion, it is not generally realised what the human frame can stand, provided a man is in good health and has the will to face all things.

In the spring of 1896 when the water commenced to run in the rivers, I had to give up dog teaming as they are only used in winter so did not know what to do, however, I purchased some dogs intending to run two dog teams the next winter.

In July of that year a man by the name of Cormack came down to the Forty Mile Post and told me that he had struck gold on a creek running into the Klondyke, which he had named the "Bonanza Creek." The Klondyke River enters the Yukon from the east at a bend about three hundred miles east of Circle City and fifty miles north of Sixty Mile Creek. The great copper belt crosses the Yukon just at this point, and the Indians have had a fishing camp there for years, the Klondyke being a noted stream for salmon. Its waters are very clear and shallow, as befits its source high up in the snow-capped ranges.

"Klondyke" means "reindeer." It is about as near the Indian word as the miscellaneous population of prospectors, who have been digging there for gold were able to come. I, like a good many others, did not believe him, but some men having nothing to do at that time, decided to go and find out for themselves.

After a lapse of about a week, a particular friend of mine, who had been up to the Klondyke and returned, advised me to go. I got together two other men, provisioned our boat and poled up the Yukon, a distance of fifty-two miles.

Arriving at the mouth of the Klondyke, we took our packs on our backs and went over the mountains, a distance of about fifteen miles to the now celebrated Bonanza Creek. We all located claims and returned to the mouth of the Klondyke intending to go to Forty Mile and record them.

That same night a man came down from further up the Klondyke by the name of Andy Hunker. He had discovered another large creek and called it "Hunker" Creek. The next morning we again started over the mountains and located claims on a creek called "Last Chance."

The reason we were allowed to locate two claims at that time, was owing to the creeks being in different districts.

During that stampede at least six hundred of the pioneers from all over the country located claims on the Bonanza Creek, Eldorado Creek, Adam's Creek, Chief Creek, Bear Creek, Hunker Creek, Last Chance Creek, Gold Bottom Creek, and a few others.

The men, after making the trip and locating their claims, and not expecting any quantity of gold to be in them, returned to Forty Mile Post, and a great number sold their claims for \$100 apiece. The following is only one instance out of a number of others: A young Swede by the name of Gus sold his claim to a saloon-keeper by the name of Tim for \$35. Tim, of course, only bought it on speculation, nobody knowing what was under the ground. He held on to that claim for five months, and finally accepted \$31,000 for it. Two weeks after the same claim sold for \$75,000, and to-day could not be bought for less than \$250,000. Many of the reports received of the large finds of gold from the gold regions are not in any way exaggerated, but the claims all along the Klondyke and its various tributaries are already taken up, and more than one thousand claims are staked out and in operation, and the new prospector must work for others or go on prospecting trips farther into the region and take his chance of locating new claims.

I consider the chance good if he is well supplied with provisions and enjoys a good constitution, and can suffer the hardships which must be endured in any circumstances in this new and comparatively unexplored region.

A young man who went to the Klondyke recently writes that he is taking out \$1,800 a day from his claim.

On November 20th, Thomas Flack, William Sloan and a man by the name of Wilkinson sunk a hole eighteen feet deep in Eldorado Creek, and struck a four-foot pay streak that went \$5 to the pan, or \$2.50 to the shovelful. This was not for a short time, but for weeks and weeks. They shovelled out ton after ton of dirt literally filled with gold and did not know it.

Professor Lippy, formerly secretary to the Y.M.C.A. at Seattle, returned from the Klondyke with \$67,000 in gold dust, and numbers of people from California with sums ranging from \$5,000 to \$50,000.

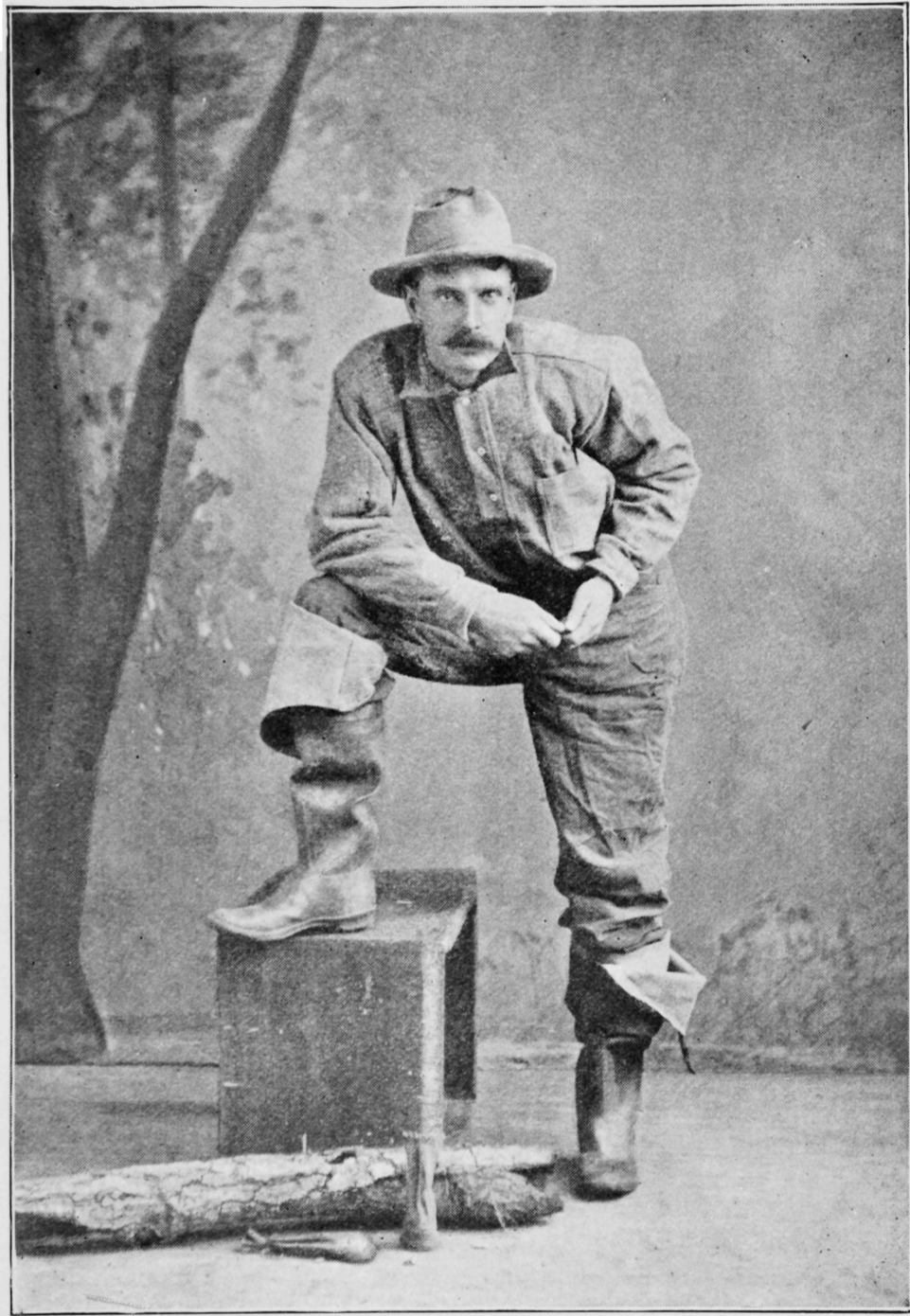
William Stanley, his son, F. Phiscator and C. Worden, all of whom left Seattle for the mines less than a year ago, have returned. From their claims they took out gold worth \$80,000 in ninety days, and believe they have only just begun work. They intend to return in March. This work was done on claims 25 and 26, each of 500 feet.

The prospecting on the various creeks did not commence until after Christmas, the men having to build their log cabins on their separate claims, taking up their supplies a distance of from sixty to seventy miles, making as many as four or five trips, and it was not until the latter end of January, in the year 1897, that any claims commenced putting out pay dirt. Pans as high as \$300 dollars each were found.

The greatest excitement prevailed all over the country. Claims were bought, and sold for one-tenth of their value, and it was not until in May of the present year that the different claim owners commenced to sluice their dumps and clean up the riffles in the boxes, so that the true value of the different claims was known.

Men by careful prospecting figured their dumps at less than half their real value, the ground in every instance cleaning up much better than was expected.

During the latter part of the winter of 1896, we cleaned up from the different creeks, with nothing but our own primitive method of working, at



The way I appeared in San Francisco.

least \$5,000,000, and provided sufficient provisions are in the country this coming winter nothing should prevent at least twenty to thirty millions being taken out without the aid of any kind of machinery.

George Cormack, the man I have before referred to as a small trader and coal miner, was in the Klondyke country with two Indians hunting and trapping for fur. One morning in going down to the creek, I suppose to wash his frying pan out, he found a few colours of gold. He then dug his pan down and after washing out the sand and gravel he found himself the possessor of about twenty-five cents' worth of fine gold. He spent half of that day prospecting with his frying pan up and down the creek, and finally cut his stakes and located a mining claim. The two Indians who accompanied him also located the two adjoining claims.

In August of 1896 a man had sense and faith enough in the country to locate a town site on the bank of the Yukon, just below the Klondyke River. He immediately commenced to work and cut down the brush, laid the place out in lots and called it Dawson City.

The same fall he erected a store-house and brought the Sixty Mile Saw Mill and set it up at Dawson. One or two more small cabins sprang up. Many people have an idea that Dawson City is completely isolated and can communicate with the outside world only once in twelve months. That is a mistake, Circle City a few hundred miles away, has a mail once each month, and there the Dawson City men have their mail addressed. It is true the cost is pretty high, \$1 a letter and \$2 for a paper; yet by that expenditure of money they are able to keep in direct communication with their friends on the outside.

The camp is at present without any public institutions, but by next season they will have a church, a music hall, a school house and a hospital. This last institution will be under the direct control of the Sisters of Mercy who have already been stationed for a time at Circle City and Forty Mile.

Before leaving for Forty Mile I had sense enough to purchase sundry town lots from the locator of the town, and lots that I had paid \$50 for I sold in a few months' time for \$2,000, keeping myself four lots, 25 by 100 feet, which I lately sold together with my mining property to the British North American Trading and Exploration Company of New York.

During the winter of 1896 I still freighted with my dog teams until the month of January, 1897, I then sold my teams and started for the Klondyke River, to commence prospecting on my claims.

Before washing out the dumps in the spring, I thought it best to take in a partner, so got a young fellow, named Earl Crutcher to join me; we started sluicing with results most satisfactory to both of us. There are millions in it. Here the private adventurer can do everything—find the gold, work it, and bring it away. The value of the placer gold in the Klondyke cannot be estimated, but experts speak of £14,000,000 as being practically in sight. The Klondyke had been known for several years to drain a gold country, and the first five miles of it had been indifferently prospected; but the gold hunters were generally run out by bears.

Scientists believe the gold in Klondyke is from the same mother lode as the gold from the Sierras, and they even go so far as to assert that the gold mines of the Ural Mountains in Siberia go back to the same origin. In other words the whole country of two continents, from the Ural Mountains to the Rockies is impregnated with a mineral which is apparently exhaustless in extent, and which will suffice to keep the world supplied with gold for ages to come.

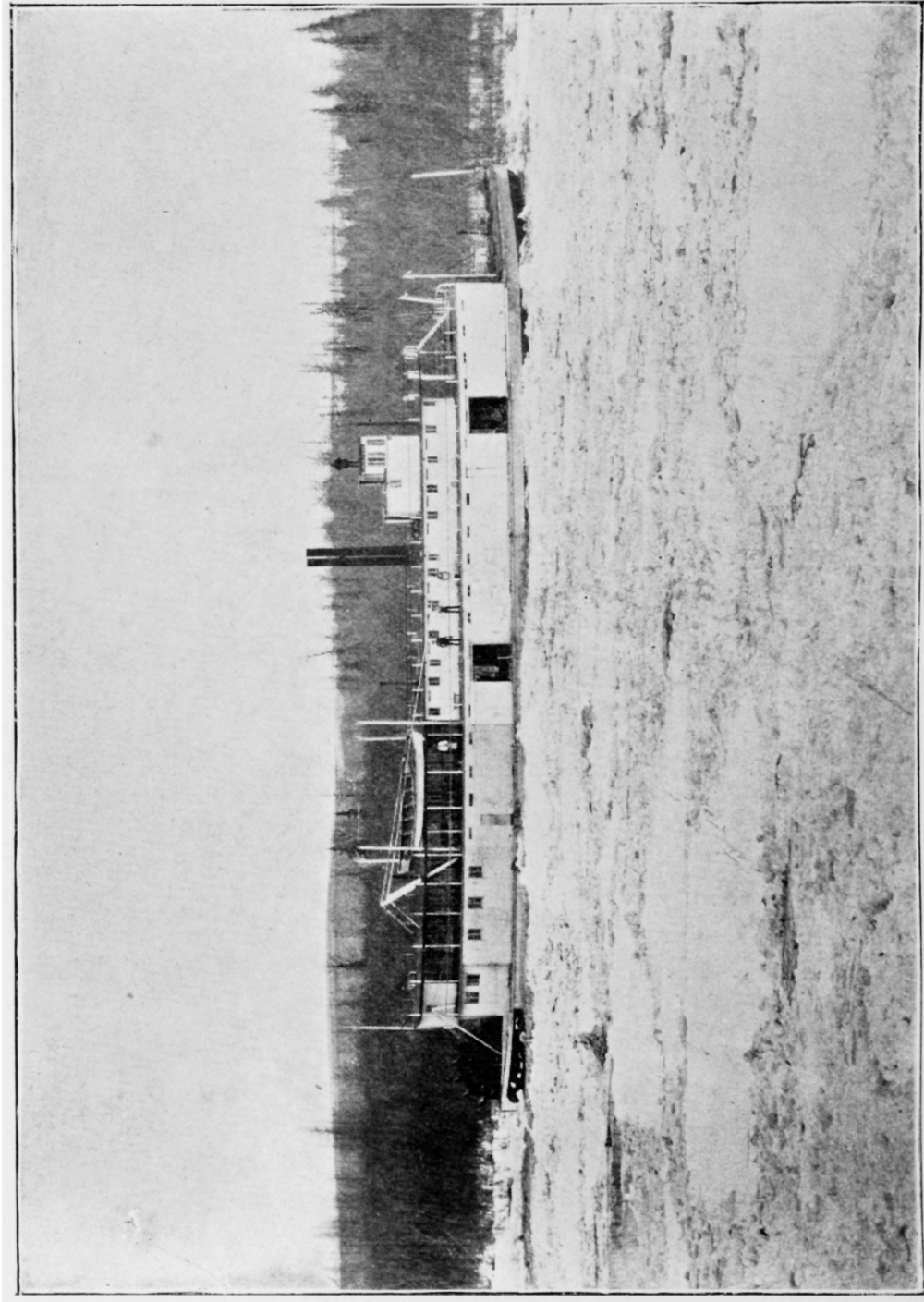
After nearly three and a half long years of all kinds of sufferings and hardships, having done almost everything a man can do, and for most of the time really not having enough to eat, I at last found myself in a position to visit my dear old home in England. My partner agreed to stay in the country and work the several claims to the best of his ability.

On the 18th of June, 1897, I left Dawson City on the North American Trading and Transportation Company's steamer "P. B. Weare." This is a little steamer which makes the trip up and down the Yukon three or four times every summer. On this boat the miners loaded their gold, and left their fortune banks behind.

Many of the men would not talk, but with grips, bags, strong boxes, belts, tin tomato cans, and other odd receptacles filled with the glittering metal, sat on guard in their 4 by 6 state rooms. In seven days after a run of about 1,700 miles we arrived at St. Michael.

St. Michael is situated on an island ninety miles north of the mouth of the Yukon River. It is the most important station of the coast for all the Yukon region, and, in fact, the only one so far as freight and supplies are concerned. As the "Weare" steamed near, friends who had not met in months or years greeted one another on deck. A more exciting scene was never seen. I stayed at St. Michael a few days and then took the Alaska Commercial Company's steamer, "Excelsior," for San Francisco. We experienced a fair trip, but a long and tedious one, and all on board were glad indeed, when on Wednesday, July 14th, 1897, we arrived in the harbour of San Francisco. From this day may be said to date the Klondyke gold craze, which already rivals in extent the three other great gold crazes of the century: California, in 1849; Australia, 1851, and South Africa in 1890. The descriptions of the vast amounts of gold still remaining in the regions from which the miners had come, were so tempered with cautions and warnings against a mad rush for the new fields that tales which otherwise might have been deemed improbable gained credence through this very conservatism. But, whatever might be thought of the tales there was no disputing the tangible fact of the yellow metal which was laid down in Selby's Smelting Works at San Francisco. No wonder the strange news spread like wildfire. *The Gold Fever of 1897 had begun to burn.* After leaving some of my gold at Selby's I went to the California Hotel with the intention of being quiet and getting away from reporters. On reaching the Hotel, however, Mr. Wren, one of the clerks, evidently did not like my appearance and made some demur as to my staying there. This was not very surprising as my costume consisted of gum boots, greasy over-alls, a heavy flannel shirt, torn coat and very dirty hat. He failed to recognise me, and was afraid there was no room for me. An old friend of mine happening to be there knew me, and after Wren was informed who I was, I was allowed the best the house contained. During my seven days' stay in San Francisco, I met numbers of old friends who were most anxious to hear of the new gold fields. From San Francisco I went to Houston, Texas. Houston, more fascinating than any other city in the world—at least to me. From Texas I went to New York, where I sold my properties, and after a stay of two months, left for Old England, partly in the interests of the Company, and more particularly to see my own people, after having been seven years absent.

Having now come to an end of my personal experiences of the Klondyke Yukon Country, I will deal with some subjects that are of the greatest importance to all who have any interests in the country, or who think of going to the new Goldfields.



Steamer "P. B. Weare" in Winter Quarters, In a slough of the Yukon near Circle City.

APPENDIX.

THE AMOUNT OF WORK REQUIRED TO BE DONE TO OPEN UP A PLACER CLAIM FOR SUMMER DIGGINGS.

For example we will take a newly located claim on any creek, and supposing the depth of bed-rock is fifteen feet and the creek has a grade of two feet to the hundred, to prospect this claim it will be necessary to commence digging a drain seven hundred and fifty feet below the part of the ground to be prospected. After running this drain a distance of say five hundred feet, and crossing the whole width of the centre of the claim, you have reached a depth of ten feet, and more than likely found no gold. After running another two hundred and fifty feet, the fifteen foot depth is reached, and you are enabled to take up the dirt at the bottom of the drain, owing to the seepage water having a chance to run out the length of the drain.

Anybody can readily understand that it is impossible to sink a shaft straight down in the summer time, as it would keep filled up with water.

After completing this drain and finding a satisfactory prospect to work, then commences the running of a waste ditch, or in other words, turning the creek bed out of its original course.

That is done by digging a ditch the full length of the claim on one side, and then damming the creek at the head of the claim, and this water has to be turned into its original bed at the foot of the claim, which is necessarily the head of somebody else's claim.

After running the drain and waste ditch, lumber has to be sawed and drain boxes made and laid the full length of the drain.

The sluice boxes are then made and the water taken from the dam at the head of the claim.

After laying the boxes, the cut at the head of the drain is commenced to be widened out and the dirt shovelled into the sluice boxes.

With one string of sluice boxes, we generally worked a cut 14 feet wide, which allows of two men shovelling into the boxes, and one man at the tail race to shovel the tailings on either side.

After working about two box lengths, or a distance of 24 feet, 14 feet wide, and about 10 feet deep, the boxes have to be re-set, the drain extended that 24 feet, and the dam put in at a distance of about 18 feet from the original head of the drain.

Before setting the sluice boxes, it is often necessary to dam the creek in different places, turning the full force of the water on to the different banks, which banks have to be dug down, and allowed to wash away.

That is what we call "ground sluicing," which generally takes at least a month's hard work.

After ground sluicing off as much as we can of the surface, we generally go to work and shovel two or three feet of the uppermost dirt and throw it on either side of the cut which brings the depth to about 10 or 11 feet to bed-rock.

The boxes are set on uprights and braced from either side, and after working ten hours in the cut and shovelling a height of ten feet, a man is naturally glad to go to his cabin, eat supper, and take a well earned rest.

The cost of opening up one of these claims is not less than \$3,500, but, owing to the success of last winter's work, I have every reason to believe that these claims will be worked in the future both summer and winter.

HOW THE GOLD IS EXTRACTED DURING THE WINTER.

The reason the mines have not been worked in the summer time is owing to the discovery being of such recent date, and the lack of money in the country in the year 1896.

The methods employed by the miners of the Yukon district in getting at the precious metal are entirely different from those of any other mining district.

No one seems to know just who it was conceived the idea of burning out prospect holes, but whoever it was has undoubtedly earned the gratitude of a great many people, for without this process it would be practically impossible to operate except during the three and a half months of summer; this season of the year is very short in the Yukon district, and if it were possible to mine only during that time the expense of the work would be much larger than under the present methods, and the net "clean ups" correspondingly smaller.

When gold was first discovered in the valley of the Yukon, the great drawback in successfully operating the placer was found to exist in the auriferous gravel being frozen into a solid, compact adamantine mass, on which the blows of the pick were of no avail, as the heaviest stroke made no more impression than it would have done on a block of granite. Dynamite was experimented with, but a heavy shot resulted in blowing out only a pot hole, and was of no effect whatever on the surrounding gravel.

In some few places in the Yukon district, notably on Mastadom Creek, which creek is a tributary of Birch Creek, the lower gravel never freezes; but this condition of affairs is very rarely met with, and has never yet been explained by the expert miners who have examined the matter.

However, since the method spoke of above was originated, the work has been comparatively easy. Under the old way of doing business, when a creek was located in the summer and the water was running, it was found necessary to drain the holes in the way I have already described.

In running this drain, it necessarily has to be run on the claims below, and the owner of the claim which was being drained might not be friendly, and while it is impossible to keep the drain off the lower claim, still, the owner of that claim might succeed in diverting its course, and make things rather unpleasant for the man who was doing the work.

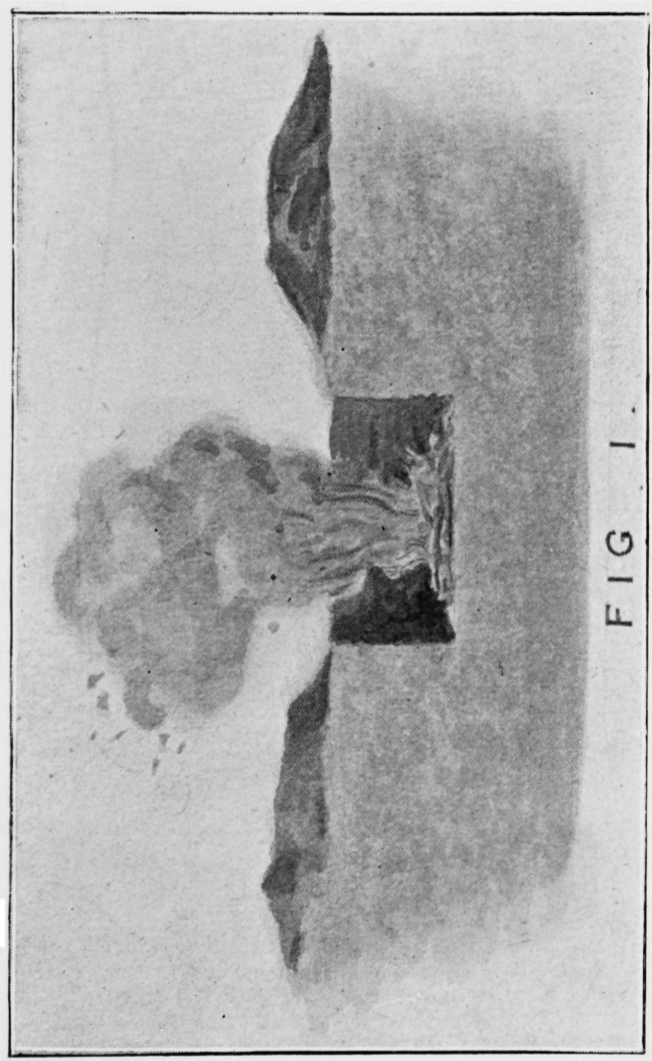


FIG. 1.

In winter the prospector merely clears off the surface of a likely looking spot on his claim, and on the place cleared, builds a big wood fire, say four by eight feet in dimension (*See* diagram No. 1). These fires are made at night, and after burning for twelve hours, the operator will find it possible to shovel out perhaps a foot of dirt.

An active man can keep and clean out two fires in twenty-four hours, one at night and one in the morning, and in this way a twenty-foot hole can be burned in from eight to ten days.

After the hole gets so deep as to make shovelling impossible a windlass is erected and a bucket used to remove the dirt. This, of course, requires the services of two men, one to man the windlass and the other to push the operations in the hole. (*See* diagram No. 2.)

After a pay-streak has been located "drifting is commenced, and the two men can easily keep a twenty feet "face" going, and at the same time remove from one hundred to one hundred and twenty-five buckets of dirt per day. Each bucket contains about five pans of dirt, and in many cases the pans average as high as \$2.

When a pay-streak is located, it is the usual custom to put as many men as possible to work on the different shafts.

The quality of the dirt is determined in a very simple manner : at various stages of the work a pan of dirt is taken to the cabin and panned out in warm water, and its value thus estimated.

Drifting usually lasts until about the middle of April, when each hole has its pile of dirt at its mouth. (*See* diagram No. 3).

Early in May the sluice boxes, which are each twelve feet long, with bottoms cut thirteen inches by eleven inches, and sides eleven inches by ten inches, planed and nailed tightly, are placed in position. The riffles, which are strips of wood placed along the entire length of the boxes, are then put in. It is between these that the gold collects, as the water flows through the boxes carrying the dirt with it.

The water usually begins running about the first week in May, and a few days after sufficient water is procurable to make a sluice head. The boxes are then set and the water taken at a distance sufficient to give the riffle boxes a grade of five inches to every twelve feet.

Then the "cleaning-up" process is begun. After shovelling in for twelve hours, if the dump is known to be rich, the water is turned off and the riffles taken out. The gold and sand which they have collected are next separated, this being done by running a small head of water through the boxes while the gold and gravel are worked up together with a wooden paddle. The gold being the heavier, naturally remains in the sluice while the sand is carried away. The gold is then taken to the cabins and dried, after which it undergoes the "blowing" process, during which it is separated from the small quantity of black sand mixed with it. This work is made necessary by the fact that it is impossible to thoroughly clean the dust in the boxes.

The time occupied by this work, of course, depends on the size of the dump and the number of men employed. In one instance a single miner shovelled in for an hour and cleaned up one hundred and twenty ounces, or \$2,040. The fact that the precious metal was taken out at the rate of two ounces, or \$34 per minute will perhaps serve to show better just how fast a fortune was being made. The man arrived late, and not being able to locate, accepted a

“lay,” or, in other words, agreed to give the owner of the claim his labour and half of the proceeds for the season’s work. He happened to be very fortunate, and found gold in large quantities after sinking his hole. As a result of less than one month’s work he cleaned up \$60,000, thus netting the claim owner \$30,000. This was but one of many similar instances, but it must not be taken as indicating that everyone would be as lucky under similar circumstances.

After being cleaned the gold is put in mooseskin bags, and from that time on the miner and his treasure are inseparable. When one dies the other is also lost to view.

The standard value of gold in the Yukon district at present is \$17 per ounce when used as currency. Some of the metal that was assayed in San Francisco this spring, however, was only valued at from \$16.35 to \$16.80.

Apropos, it might be well to state that during the three and a half years I spent in the Klondyke I never knew of an ounce of gold being stolen.

A FEW REMARKS REGARDING THE CLIMATE IN THE YUKON.

The frost commences in the Yukon as early as the middle of October. At that time the days are generally warm, and at about four o’clock in the afternoon a small crust of ice will commence forming on the small pools.

The Yukon River generally closes up in the beginning of November, and does not open in the spring until about the 20th May.

During the winter months the thermometer registers from 20° to 70° below zero. It is not really safe for people to travel when the thermometer is below 40°.

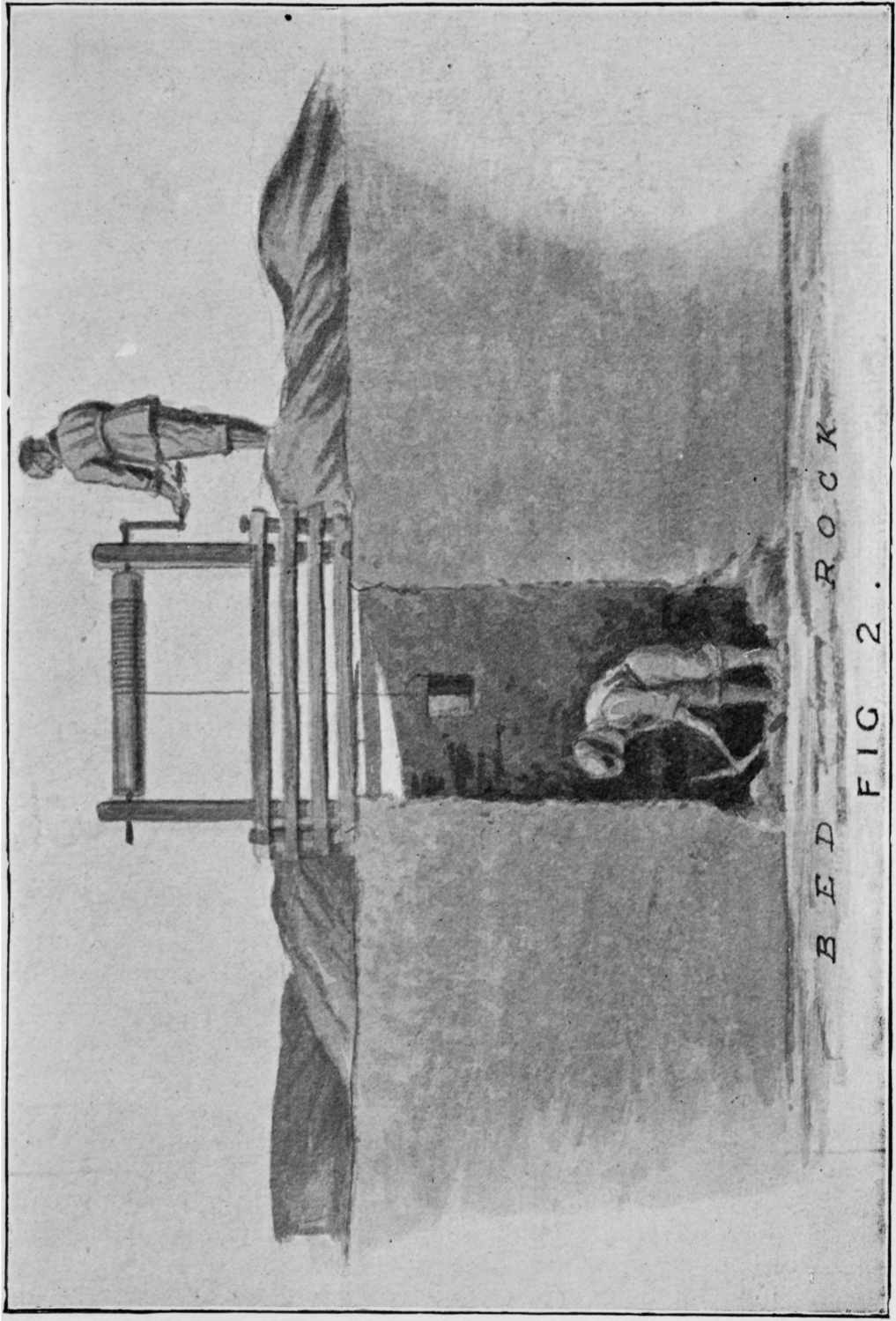
The days during the months of December and January have about four to four and a half hours of daylight. The sun is hidden from view for four weeks, and does not attain any heat until late in March. The snow generally falls to a depth of about two to three feet on the level. In the mountains it is often twenty feet deep.

I have found great difference in the weather in each succeeding winter, some winters being very much colder than others. The winter of 1895-96 being one of the coldest winters ever experienced by the old pioneers who had resided in the Yukon for the last twenty-three years.

After the ice breaks in the spring, the weather for about a month is everything that could be desired, the thermometer varying from 60° to 85° during the hottest part of the day.

Towards the middle of June the heavy rains generally commence, and it occasionally rains for five or six days without stopping.

The mosquito is an almost intolerable pest. In the Yukon region he is so small, that the finest netting cannot keep him out, but his voracity is seemingly boundless. During the summer this pest gives the population no rest, the deepest cañon and the loftiest mountain top, the open ground or the thickest forest, being equally infested. The only relief, if it can be called relief, is when the winds blow the insects to less windy altitudes; but it is not an every day occurrence for the wind to blow. Lieutenant Schwatka, in his account of



B E D R O C K

F I G 2 .

his trip to Alaska, says that bears under stress of hunger—sometimes come down to the river in mosquito season, and are attacked by swarms of insects which sting them about the eyes, so that they go blind and die of starvation.

There has been a misapprehension of the country, and from a sort of accepted conclusion, that the climate on the coast and that in the interior is similar. In the interior the climate is influenced largely by the altitude of each particular district; and in consequence of the general lowering of the country beyond the 60th parallel, the climatic conditions necessarily are much more favourable than they are, for example, in the Canear district, which is only just north of British Columbia; the thermometer at mid-summer generally registers between 60° and 90°, although it occasionally falls very low during the rain and wind storms.

CLOTHING MOST ADAPTED FOR THE CLIMATE DURING WINTER AND SUMMER.

In the matter of clothing of course, it must be left to the individual taste and means of the purchaser.

It has been my experience that people going into the Yukon invariably take with them a large amount of useless wearing apparel.

Summer clothing usually consists of a suit of heavy under-wear, over-alls, flannel shirt, and gum boots, keeping always in readiness a heavy blanket shirt, which is more or less water-proof, to put on during the rainy and windy weather.

The winter clothing is best procured from the trading posts in that country, which should consist of the heaviest under-wear, lined over-alls, which are perfectly wind-proof, about three pairs of woollen socks, and a pair of fur-lined cariboo socks covered with an Indian moccasin, a heavy flannel shirt, fur parkey, mooseskin mittens, lined with heavy woollen blanket, a cap with fur flaps which cover the ears and ties tightly under the chin.

This costume is generally procurable from the trading post, or Indians in Yukon, but my advice would be to all parties intending going to the Yukon to take a liberal supply of these necessary articles with them.

A FEW WORDS OF ADVICE TO THE "WOULD-BE KLONDYKER."

As we all know, the Klondyke district is, without doubt, the richest placer mining district ever discovered in the world, but if people will only sit down, think, and argue their chances of success in this new "Eldorado," they will undoubtedly come to the opinion that their chances are about one in a hundred.

It is an easy matter for anybody to sit before his own fireside at home and mine a claim in the Yukon (in imagination), but the actual prospecting is a different thing altogether. Before beginning even to hunt for gold the aspiring miner must prepare himself for the long and tedious trip to the fields,

and this is a task that will tax the endurance and nerve of the most hardy. It means packing provisions over pathless mountains, towing a heavy boat against a five to an eight-mile current, over battered boulders, digging in the bottomless frost, sleeping where night overtakes, fighting gnats and mosquitoes by the millions, shooting seething cañons and rapids, and enduring for seven long months a relentless cold which never rises above zero and frequently falls to 80° below. Any man who is physically able to endure all this who will go to the gold fields for a few years, can, by strict attention to business, make a good strike, with the possibilities of a fortune. We will take as an instance a young, inexperienced man leaving England with just enough money to pay his travelling expenses and provide himself with a year's outfit suitable for the Yukon country.

He leaves London for Liverpool; takes the steamer from Liverpool to New York; from New York he goes to, say, Seattle, in Washington territory, or Victoria, and from there he takes the steamer to, in my opinion the best route, Dyea. He is landed at Dyea with all his goods and chattels. He pitches his tent, and wonders how he is going to take his outfit over the summit to the lakes. Before starting he has not thought of all the obstacles which are thrown in his way, and as it is absolutely necessary for not less than two men to travel together, one man, in his own opinion, always knows better than the other one what to do, and the result is in a great many cases that before the journey is really started these men divide their outfits and their friendship is broken. That must necessarily cause great delay, because instead of having a complete outfit, they each practically have nothing which will enable them to make the trip alone. One generally takes the tent, the other the stove; the boat building tools are divided, and all other clothing and provisions are also divided, which really makes it impossible for the men to go ahead without the assistance of others.

Providing everything goes smoothly, and both men agree what to do, we will say that they arrive at Dyea in the middle of March, when the snow is on the ground. Before leaving Victoria or Seattle, it is necessary for them to procure sleighs, and, if possible, two or three powerful dogs.

They then load their sleighs and commence the ascent up the Dyea River to the foot of the Chilkoot Pass. Arriving at the foot of the Pass it is necessary to make caches on which to load the provisions. The camp is pitched at the foot of the Pass, as much as possible of the load is hauled and cached so that the dogs cannot reach it, and then they return to the camp.

Of course, it all depends on the size and quantity of the men's outfit, the number of trips they have to make, and after making numerous caches on the way to the summit, and reaching the top the whole outfit can again be loaded on and sleighed down the other side, a distance of not much over nine miles to the head of the lakes, then sleigh down the lakes until you come to a big patch of timber suitable for boat building purposes.

Your camp is then pitched, your lumber sawed, and your boat built.

After having everything in readiness you may have to remain in camp for some little time until the ice breaks up in the lakes.

A great mistake is often made by enthusiastic gold seekers in following the ice jamb too closely. Numbers of men have lost their lives from being caught in the ice and the boat being upset.

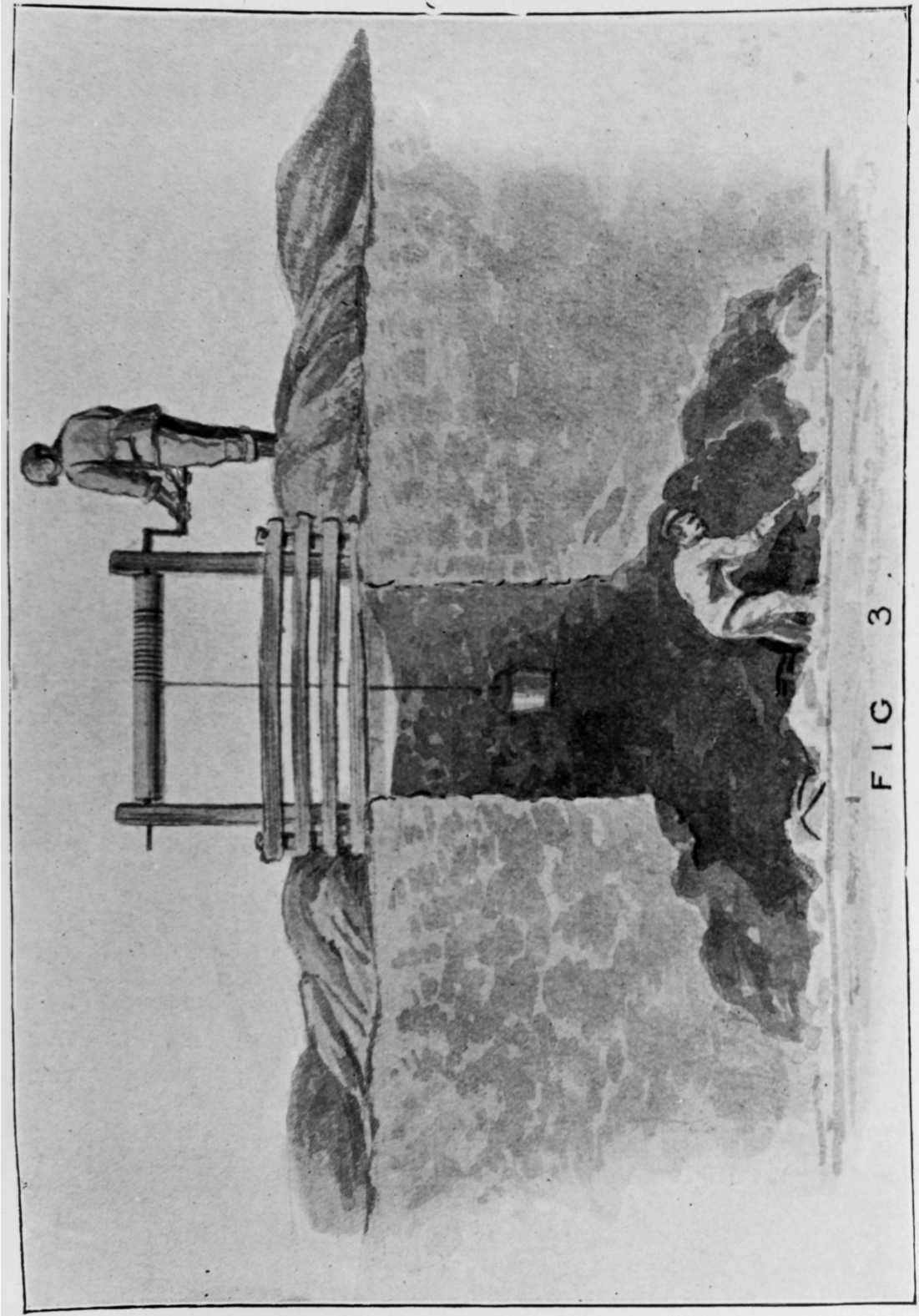


FIG 3.

I should advise that the ice have at least twenty-four hours' start. Then jump in your boat, and by exercising care and judgment, especially when nearing the different rapids, the trip can be made very easily and pleasantly.

This young Londoner arrives at Dawson City, where every temptation of a mining camp is open to him—all kinds of gambling devices, men willing at any time to pick a quarrel, women of all kinds and descriptions.

He, of course, spends a few days in Dawson City before making up his mind to go out in the mountains and look for gold.

To prospect for gold he will have to pole his boat up swift rivers, take a pack on his back and go up the most likely-looking creeks that he thinks will contain gold. After he finds a small amount of surface gold in the creek, he stakes out a claim and returns to Dawson City to record that claim, perhaps being distant a hundred miles from the town. He then returns to his claim and erects a log cabin before the snow falls.

After the snow is on the ground, and the river frozen up, he loads his supplies, stove, tools, etc., on his sleigh, and breaking a trail through the deep snow on snow shoes, and after making sundry trips, he eventually is located on his own piece of property.

By that time I should say it would be about the month of January.

He then has to chop his wood from the side hills, haul it down to the creek, and chop it up.

He then commences to sink prospect holes to bed rock. Each hole taking him no less time than from eight to ten days, and in the event of the ground being very deep, he will have to erect a windlass, fill his bucket in the bottom of the hole, then crawl up the ladder to the top and haul up bucket. This is very hard and unsatisfactory work for one man to attempt, and until the owner of the claim knows what the ground contains, he does not feel justified, neither is he able to, hire a man and pay him from \$10 to \$15 a day.

After sinking say ten of these holes, right across the width of the creek, and finding no gold that will pay him to work, he naturally retires to his cabin, and looks at his worthless piece of ground, takes stock of his provisions and finds that they are nearly gone, and begins to wonder what he is going to do.

He has no provisions left sufficient to enable him to strike off for the mountains again. A whole year of his time has been apparently wasted, and the only one thing for him to do is to return to the trading post, and try and get work of some kind, and scrape together enough money to enable him to buy another year's outfit.

The rush of people to the new diggings has been very great, and knowing as I do, the number of claims that will be worked this winter, there will not be employment for one-half of the people that are rushing in.

The history, as far as I know, of all mining camps in the world, especially the placer mining camps, has been that where one has made a fortune, hundreds of others have gone through every hardship, and nearly starved to death. It does not stand to reason that because one man has been into that far northern country and made his fortune, that a hundred other people can go in and do the same.

For the last twenty-three years men have been mining and prospecting on the tributaries of the Yukon, and no rich diggings were discovered until the year 1896. It is not my intention to try and keep people from going into the country, the more people the country contains the natural result will be that

labour will be much cheaper, and where we are now working a force of men and paying them from \$10 to \$15 a day, it would benefit us very largely to be able to get men to do the same work for \$5 a day.

As everybody knows, Alaska and the Yukon comprise an area of about six hundred thousand square miles, and I firmly believe that there are just as good diggings to be found somewhere in that country as have already been discovered providing the seekers have the necessary money and equipments to prospect for a number of years.

Experienced men have found that the provisions a man ought to lay by before starting on the overland journey from Juneau, at which place they can be best purchased. The articles required for one man for two months are somewhat as follows:—

40 lbs. flour	Matches
5 lbs. baking powder	Mustard
24 lbs. bacon	Cooking utensils and dishes
18 lbs. beans	Frying pan
30 lbs. dry fruit	Water kettle
12 lbs. dissicated vegetables	Tent
8 lbs. butter	Yukon stove
20 lbs. sugar	Two pair good blankets
12 cans of milk	One rubber blanket
5 lbs. tea	Bean pot
5 lbs. coffee	Two plates
2 lbs. salt	Drinking cup
12 lbs. ham	Tea pot
10 lbs. cheese	Knife and fork
20 lbs. corn meal	Large cooking pan
Pepper	Small cooking pan

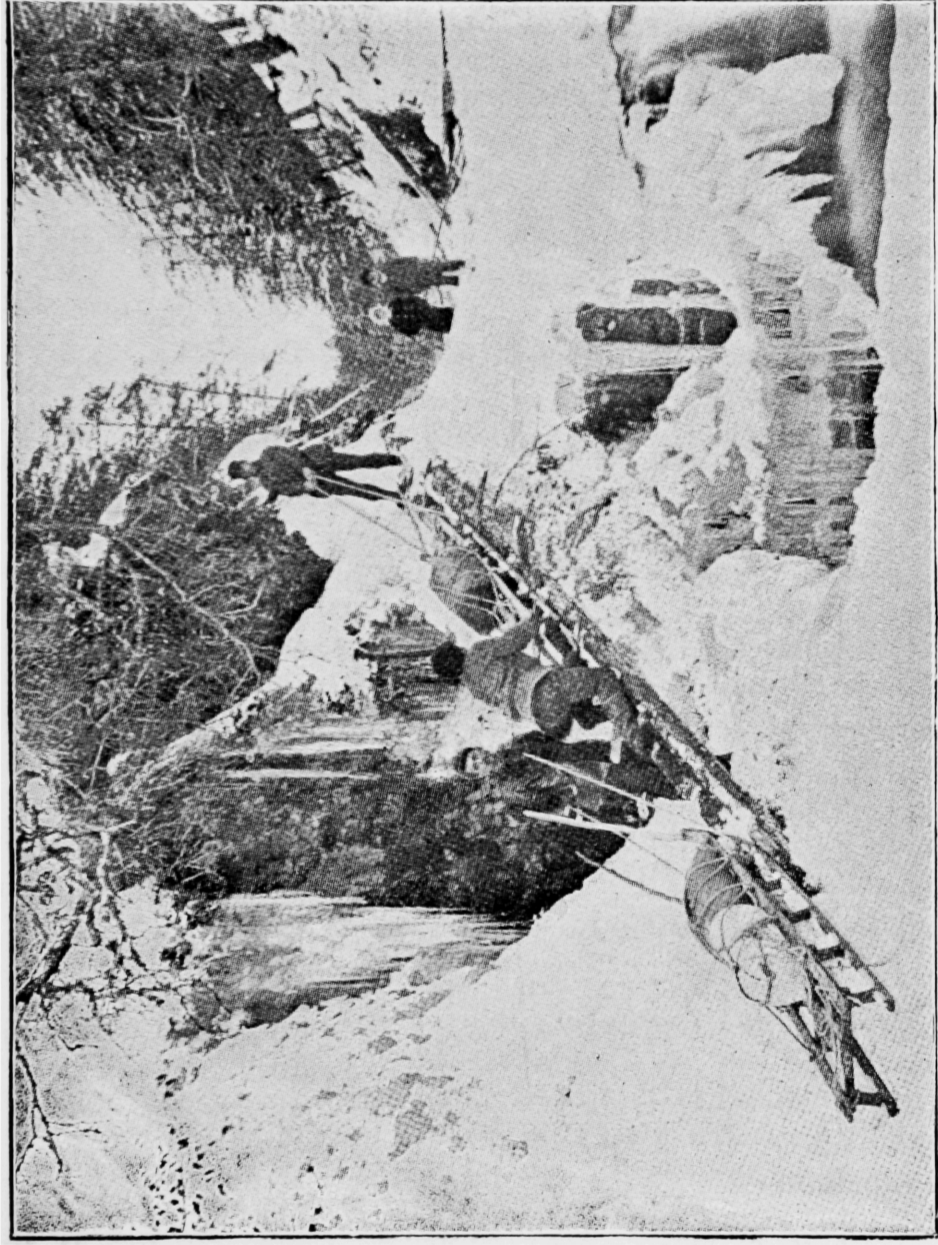
These are simply for sustenance. In addition, the traveller will find it necessary to build his own boat with which to thread the chain of lakes and rivers leading to the gold basin. He will need the following tools:—

Jack plane	5 lbs. of five-eighths rope
Whip saw	Pick
Two hand saws (cross-cut & rip)	Shovel
Draw knife	Gold pan
Axe	10 lbs. 6d. wire nails
Hammer	10 lbs. 8d. „
Hatchet	10 lbs. 12d. „
Pocket rule	Square
3 lbs. oakum	Pencils
5 lbs. pitch	Chalk line

He will also find that he must have some protection against the deadly assaults of gnats and mosquitoes, which fill the air throughout Alaska; that he will have to be provided for mountain climbing and for protection against snow blindness, which is one of the most demoralising afflictions that can befall the traveller over the snow-covered passes, so he will need—

Mosquito netting	Snow glasses
One pair crag-proof hip boots	Medicines

These are the provisions necessary for a miner for a single month, and whether he will need more for his journey depends somewhat upon the manner in which he travels.



Prospectors Travelling in Winter.

Before making a start the wise traveller will consider the cost of living in the diggings and provide himself accordingly. Following are a few of the average prices of provisions and articles of common use:—

Cost of shirts	\$5.00
Boots per pair	10.00
Rubber boots per pair	25.00
Flour, 50 lbs.	6.00
Beef, per lb., fresh	1.00
Bacon, per lb	0.45
Coffee, „	1.00
Sugar, „	0.50
Eggs, per dozen	2.00
Condensed milk, can	0.50
Picks, each	10.00
Shovels, each	4.00
Lumber, per 1,000 feet	150.00
Underwear, per suit	5.00 to 7.50

The following information concerning the expenses of travel according to his means and inclination:—

Fare from New York to Seattle viâ Northern Pacific ...	\$31.50
Fee for Pullman sleeper	20.50
Fee for tourist sleeper, run only west of St. Paul's... ..	5.00
Meals served in dining car for entire trip	16.00
Meals are served at stations along the route <i>à la carte</i> .	
Distance from New York to Seattle, 3,290 miles.	
Days required to make journey, about six.	
Fare for steamer from Seattle to Juneau, including cabin and meals, cabin, \$52; steerage, \$25.	
Days Seattle to Juneau, about five.	
Number of miles Seattle to Juneau, 725.	
Cost of living in Juneau, about \$3.	
Distance up Lynn Canal to Dyea steamboat 100 miles.	
Number of days New York to Dyea, 12.	
Number of days required for journey New York to Klondyke, 60 to 75.	
Total distance Juneau to mines at Klondyke, about 700 miles.	

One word of advice to the young people who only have sufficient money to take them into that country—I should advise them to take the few hundred pounds that the trip would cost them and invest it in a sound legitimate Yukon Corporation. They will then reap the benefit without suffering the numerous hardships they would have to endure had they gone to work in the mines themselves.

ESTIMATE OF THE AMOUNT OF GOLD THAT WILL BE TAKEN OUT OF A FEW CREEKS IN THE KLONDYKE DISTRICT.

Numerous have been the reports which have reached us about the amount of gold taken out of these creeks during the winter of 1896/97, and numerous have been the reports as to the future output these creeks will yield.

As near as I can say, between four and five million dollars was taken out last winter, and I feel perfectly justified in stating that not less than one hundred and twenty-five millions will be taken out during the next five years.

Other discoveries will also be made, all the old creeks will be worked, and the yearly output from the Yukon mining district will be up in the hundreds of millions.

The output for the coming year, I should not estimate at over twenty millions of dollars, owing to the scarcity of provisions in the country at the present time.

A FEW WORDS REGARDING THE INDIANS.

The Indians are scattered from the head to the mouth of the river consisting of numerous different tribes, and those mostly speaking different dialects, a great many of the Indians being unable to understand each other. They are a quiet and peaceable people, making their living by hunting, trapping, and fishing. Their endurance is wonderful; I have known some of them to run ahead of a dog team as far as fifty miles a day.

I shall not describe the different tribes of Indians, but provided they are left alone and not molested in any way, a man's life and his belongings are perfectly safe.

The Indians located at the different posts have a small amount of knowledge regarding the Christian religion, and in numerous instances I have associated with Indians who are able to both read and write.

A FEW REMARKS FOR THE BENEFIT OF CORPORATIONS INTENDING TO OPERATE IN THE YUKON COUNTRY.

I will first touch upon the steamboats necessary for the river travel. The only bad places in the Yukon River between Pelly River and the mouth are the Yukon Flats. The river separates into numerous channels and in midsummer and towards the fall the water becomes very shallow. The draught of a loaded steamboat should not be over three and a half feet. The most suitable boats are flat-bottomed, length say one hundred and fifty feet, with about a thirty-five to forty feet beam. The machinery in this boat should be of the very best with a great deal of power, as it would be found necessary to occasionally take a tow against the current. The boats should be stern-wheel boats, modelled in some Pacific Coast Port and taken to St. Michael, and there put together, as it is altogether an impossibility to navigate one of those flat-bottomed river steamers on the ocean with any degree of safety.

The current of the Yukon River at ordinary stage of water, does not exceed three miles an hour.

Fort Cudahy, N.W.T. Sept 7 1896

Mr A. C. Sommers

Bought of
North American Transportation and Trading Company,

Yukon River.

109 ¹ / ₂ Bacon 28 ¹ / ₂	100 ¹ / ₂ Paper 25 ⁰⁰		63 15
7 ¹ / ₂ Lead 7 ⁰⁰	500 ¹ / ₂ Sugar 20 ⁰⁰		37
500 ¹ / ₂ Case 26 ⁰⁰	20 ¹ / ₂ Honey 3 ⁰⁰		29
20 ¹ / ₂ Milk 3 ⁰⁰	1 ¹ / ₂ Tomatoes 10 ⁰⁰		13
1 ¹ / ₂ Sugar 14 ¹⁰	1 ¹ / ₂ Apples 14 ⁰⁰		28
40 ¹ / ₂ Beans 11 ¹ / ₂	15 ¹ / ₂ Apples 9 ⁰⁰		20 16
5 ¹ / ₂ Sp. Tea 7 ⁰⁰	6 ¹ / ₂ Sugar 9 ⁰⁰		16 50
1 ¹ / ₂ Coffee 10 ⁰⁰	1 ¹ / ₂ Tea 11 ⁰⁰		22
1 ¹ / ₂ Macaroni 20 ⁰⁰	500 ¹ / ₂ Flour 24 ⁰⁰		27
			<u>2558 1</u>
By Dust			<u>75</u>
			<u>1808 1</u>

A. Walker

The supplies most suitable for the country are the very best that can be obtained in any market. It has been my experience that goods of an inferior quality do not fulfil the requirements of the miners. A list of the most saleable articles is here given :—

Flour.	Coffee.
Beans (all kinds).	Condensed Milk.
Bacon.	Dried fruit of all kinds.
Hams.	Assorted calico for Indian trade.
Cheese.	Blankets.
Butter.	Canned Vegetables.
All kinds of canned goods.	Tobacco, smoking.
Mining tools of all descriptions.	" chewing.
Underclothing.	Gum boots.
Shirts.	Arctic foot wear.
Sugar.	&c., &c.
Tea.	

QUARTZ.

The quartz the country contains has not been developed yet, for the reason that no machinery of any kind is in the country. Numerous quartz ledges, some assaying as high as \$80 to the ton, in some instances not free milling gold, has been discovered and located. The owners of these different ledges have done the necessary amount of work to enable them to hold on to their property, and in the near future to sell to an enterprising company at a handsome figure.

In regard to the titles and leases of the placer mines—as every one knows who is at all acquainted with any of the placer camp rules and regulations, no man can locate a claim, go to the Canadian Government, record his claim and get a title for it for nothing. The locating and recording does not make him the owner of the ground, he has to do a certain amount of work every year on that ground, either by his own individual work or by a man hired and put there as his representative to enable him to hold the ground.

CURRENCY.

In regard to currency, the only money used in the Yukon is gold dust, which has a standard value of \$17 per ounce. Each miner has in his possession a pair of gold-weighing scales, and every time any payment is made the gold is weighed on the scales, and taken at the rate of \$17 per ounce.

All goods are sold by the stores for cash only, and to show the readers what a handsome profit is derived from the sale of these goods I give a reproduction of one of my bills.

THE OLD METHOD OF STAKING OR LOCATING PLACER CLAIMS.

The first man to discover gold on a creek that has never been located before, is allowed a discovery claim, and a claim for himself. The discovery claim is his own, given to him because he is the discoverer of the creek.

The old way of staking these claims was by blazing a standing tree and writing the name and date, and stating that you claimed so many feet, either up or down the creek, for mining purposes. Next step off one hundred feet, either up or down the creek, whichever way you decide to go, and put in the other stake.* The next comer takes the adjoining claim, either above or below discovery, and so the creek is located from the top to the bottom. The moment a man's stakes are set and written on, nobody can possibly interfere with them, except the Government Surveyor.

GAME, AGRICULTURE, &c.

Game is not abundant. The Indians, instead of getting the game by the river banks, as they used to, have to travel far back into the mountains to get sufficient meat for their camp.

The different kinds of game in the country are moose, cariboo, mountain sheep, black and brown bear, wolves, fox, martin, lynx, and numerous other small fur-bearing animals. Fishing is good in the Yukon River and its tributaries. Salmon is very plentiful, grayling, lake trout and other small fish, are easily caught in the streams.

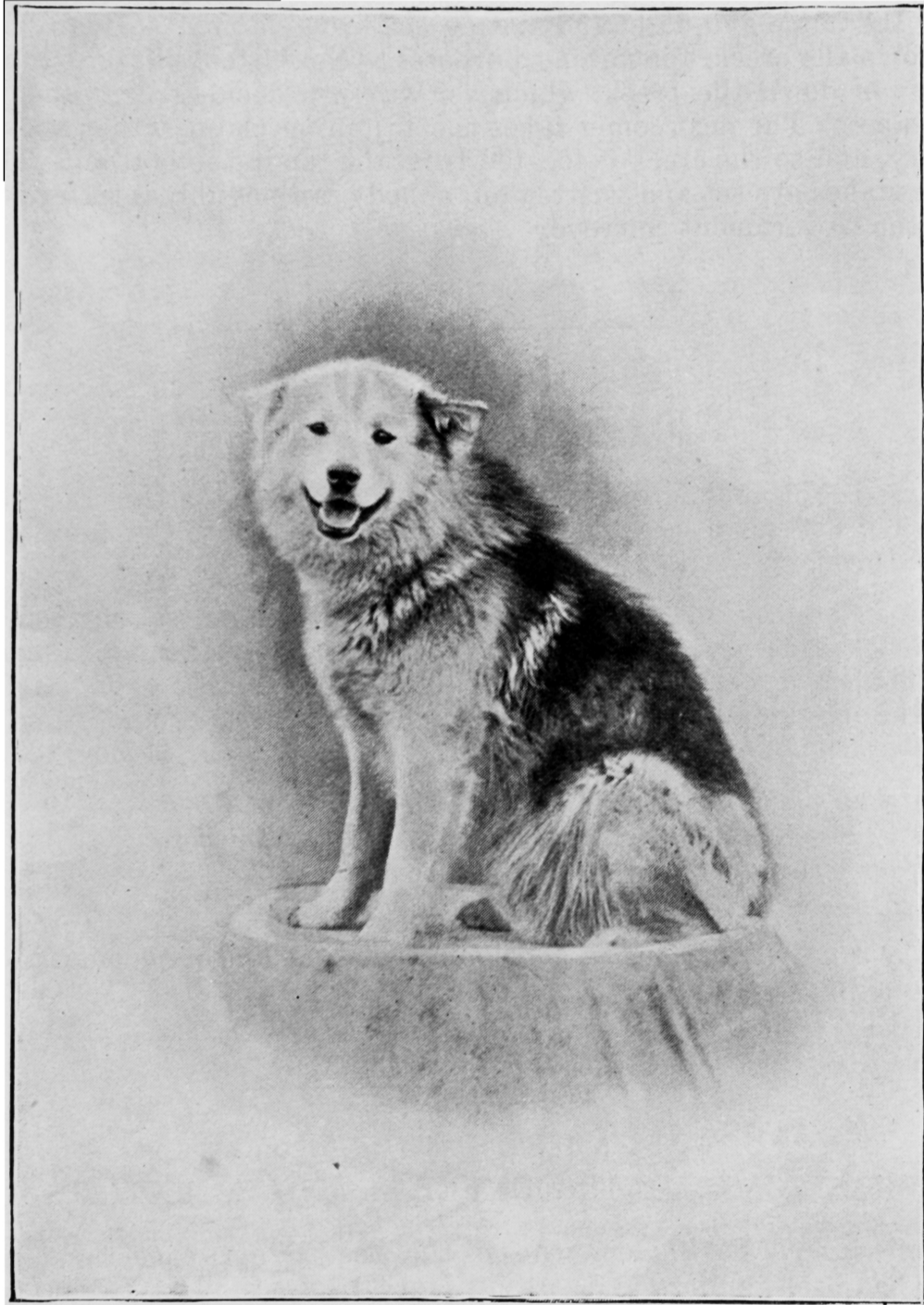
The whole Yukon country is more or less well wooded; fine trees from eight to twenty-eight inches at the butt are very numerous.

It has been tried with success to raise different kinds of vegetables during the short summer months, *i.e.*, potatoes, turnips, radishes, lettuce, &c. They grow very rapidly, and had any one sufficient time and implements to cultivate the ground, quite a large crop could be raised.

WHAT SOME MINING EXPERTS AND SCIENTISTS SAY.

Professor N. S. Shaler, who is the best living American authority on geology has been telling his classes at Harvard for the last twenty years that the coming great discoveries of gold on this continent would be in Alaska and the North-West. He explained that in the great extension of the Rocky Mountain system to the North doubtless lay the mother vein, which sooner or later would come to light. Professor Shaler's prophecy, based on scientific deductions, has come true, and other scientists agree with him that the Alaskan country contains limitless possibilities for the discovery of gold.

* The new Mining Laws say that four stakes shall be driven, 3 inches square and 4 feet high.



The favourite of the Camp—"McGinty."

Dr. W. H. Dael, of the Smithsonian Institution at Washington, who has for years been regarded as the highest authority on the Alaskan country, and who is a geologist of note, says he has no doubt of the truth of the stories told of the richness of the Yukon soil. "The gold-bearing belt of North-Western America," he says, "contains all the gold fields extending into British Columbia and what is known as the North-West Territories and Alaska.

"The Yukon really runs along in that belt for five hundred or six hundred miles. The bed of the main river is in the valley. The yellow metal is not found in paying quantities in the main river, but in the small streams which cut through the mountains on either side."

George Frederick Wright, professor of geology at Oberlin College, thinks that the "mother lode" may be looked for successfully in Alaska. In his opinion it exists somewhere up the streams on which the placer mines are found. The source of the Klondyke gold, he says, is from the south, and the gold was doubtless transported by glacier action. The Klondyke region is on the north side of the St. Elias Alps, and the glaciers flowed both north and south from these summits.

"Placer mines," says Professor Wright, "originate in the disintegration of gold-bearing quartz veins, or mass like that at Juneau. Under sub-aerial agencies these become dissolved. Then the glaciers transport the material as far as they go, when the floods of water carry it on still further. Gold, being heavier than the other materials associated with it, lodges in the crevices or in the rough places at the bottom of the streams. So to speak, nature has stamped and 'panned' the gravel first and prepared the way for man to finish the work. The amount of gold found in the placer mines is evidence not so much, perhaps, of a very rich vein as of the disintegration of a very large vein.

"What the prospectors have found points to more. The unexplored region is immense. The mountains to the south are young, having been elevated very much since the climax of the glacial period. With these discoveries and the success in introducing reindeer, Alaska bids fair to support a population eventually of several millions."

William Van Slooten, an eminent mining engineer and metallurgist, sees in the reports from the Klondyke indications of a more extraordinary deposit of gold than that of California. He says:—

"No such specifically large amounts of gold were taken out by individuals during any similar period of California gold hunting. Two months of work in the water has realized more than any six months heretofore known in the history of gold mining.

"We had long been aware that there was gold in the Yukon basin, but the total output for the last ten years before the Klondyke developments amounted to not more than a million dollars' worth at the utmost. Now, within two months, five millions have been taken out of the Klondyke regions. It took the first eight months of work in California to pan out that amount under infinitely more favourable conditions of climate and weather. That is a straw worth noting."

The latest and therefore the most important official investigation of the gold fields is that conducted under the auspices of the United States Geological Survey in 1896 by J. Edward Spurr, accompanied by two geologic assistants. The expedition was sent out in accordance with an appropriation by Congress of \$5,000 for the investigation of the coal and gold resources of Alaska. A like appropriation for the year before resulted in the expedition headed by Dr. George F. Becker, which investigated the gold fields of Southern Alaska. Mr. Spurr's party crossed the Chilkoot Pass about the middle of June, and passed down the Yukon in a small, roughly-built boat to the crossing of Forty Mile Creek. A summary of his report was submitted to Congress by the director of the Geological Survey through the Secretary of the Interior, February 2nd, 1897. Mr. Spurr's party and Dr. Becker's both took numerous photographs along the routes they traversed. It appears from Mr. Spurr's report that the gold belt is likely to be found running in a direction a little west of north-west.

Running in a direction a little west of north-west through the territory examined is a broad, continuous belt of highly altered rocks. To the east this belt is known to be continuous for one hundred miles or more in British territory. The rocks constituting this belt are mostly crystalline schists associated with marbles and sheared quartzites, indicating a sedimentary origin for a large part of the series. In the upper part a few plant remains were found, which suggest that this portion is probably of Devonian age. These altered sedimentary rocks have been shattered by volcanic action, and they are pierced by many dikes of eruptive rock. Besides the minor volcanic disturbances, there have been others on a large scale, which have resulted in the formation of continuous ridges or mountain ranges. In this process of mountain building the sedimentary rocks have been subjected to such pressure and to such alteration from attendant forces that they have been squeezed into the condition of schist, and often partly or wholly crystallized, so that their original character has in some cases entirely disappeared. In summarizing, it may be said that the rocks of the gold belt of Alaska consist largely of sedimentary beds older than the carboniferous period; that these beds have undergone extensive alteration, and have been elevated into mountain ranges and cut through by a variety of igneous rocks.

Throughout these altered rocks there are found veins of quartz often carrying pyrite and gold. It appears that these quartz veins were formed during the disturbance attending the uplift and alteration of the beds. Many of the veins have been cut, sheared and torn into fragments by the force that has transformed the sedimentary rocks into crystalline schist; but there are others, containing gold, silver and copper, that have not been very much disturbed or broken. These more continuous ore-bearing zones have not the character of ordinary quartz veins, although they contain much silica. Instead of the usual white quartz veins, the ore occurs in a sheared and altered zone of rock and gradually runs out on both sides. So far as yet known, these continuous zones of ore are of relatively low grade. Concerning the veins of white quartz first mentioned, it is certain that most of them which contain gold carry it only in small quantity, and yet some few are known to be very rich in places, and it is extremely probable that there are many in which the whole of the ore is of comparatively high grade.

No quartz or vein mining of any kind has yet been attempted in the Yukon district, mainly on account of the difficulty with which supplies, machinery and labour can be obtained; yet it is certain that there is a vast quantity of

gold in these rocks, much of which could be profitably extracted under favourable conditions. The general character of the rocks and of the ore deposits is extremely like that of the gold-bearing formations along the southern coast of Alaska, in which the Treadwell and other mines are situated, and it is probable that the richness of the Yukon rocks is approximately equal to that of the coast belt. It may be added that the resources of the coast belt have been only partially explored.

Besides the gold found in the rocks of the Yukon district there is reason to expect paying quantities of other minerals. Deposits of silver bearing lead have been found in a number of localities, and copper is also a constituent of many of the ores.

Since the formation of the veins and other deposits of the rocks of the gold belt an enormous length of time has elapsed. During that time the forces of erosion have stripped off the overlying rocks and exposed the metalliferous veins at the surface for long periods, and the rocks of the gold belt, with the veins which they include, have crumbled and been carried away by the streams, to be deposited in widely different places as gravels, or sands, or muds. As gold is the heaviest of all materials found in rock, it is concentrated in detritus which has been worked over by stream action; and the richness of the placers depends upon the available gold supply, the amount of available detritus, and the character of the streams which carry this detritus away. In Alaska the streams have been carrying away the gold from the metalliferous belt for a very long period, so that particles of the precious metal are found in nearly all parts of the Territory. It is only in the immediate vicinity of the gold-bearing belt, however, that the particles of gold are large and plentiful enough to repay working, under present conditions. Where a stream heads in the gold belt, the richest diggings are likely to be near its extreme upper part.

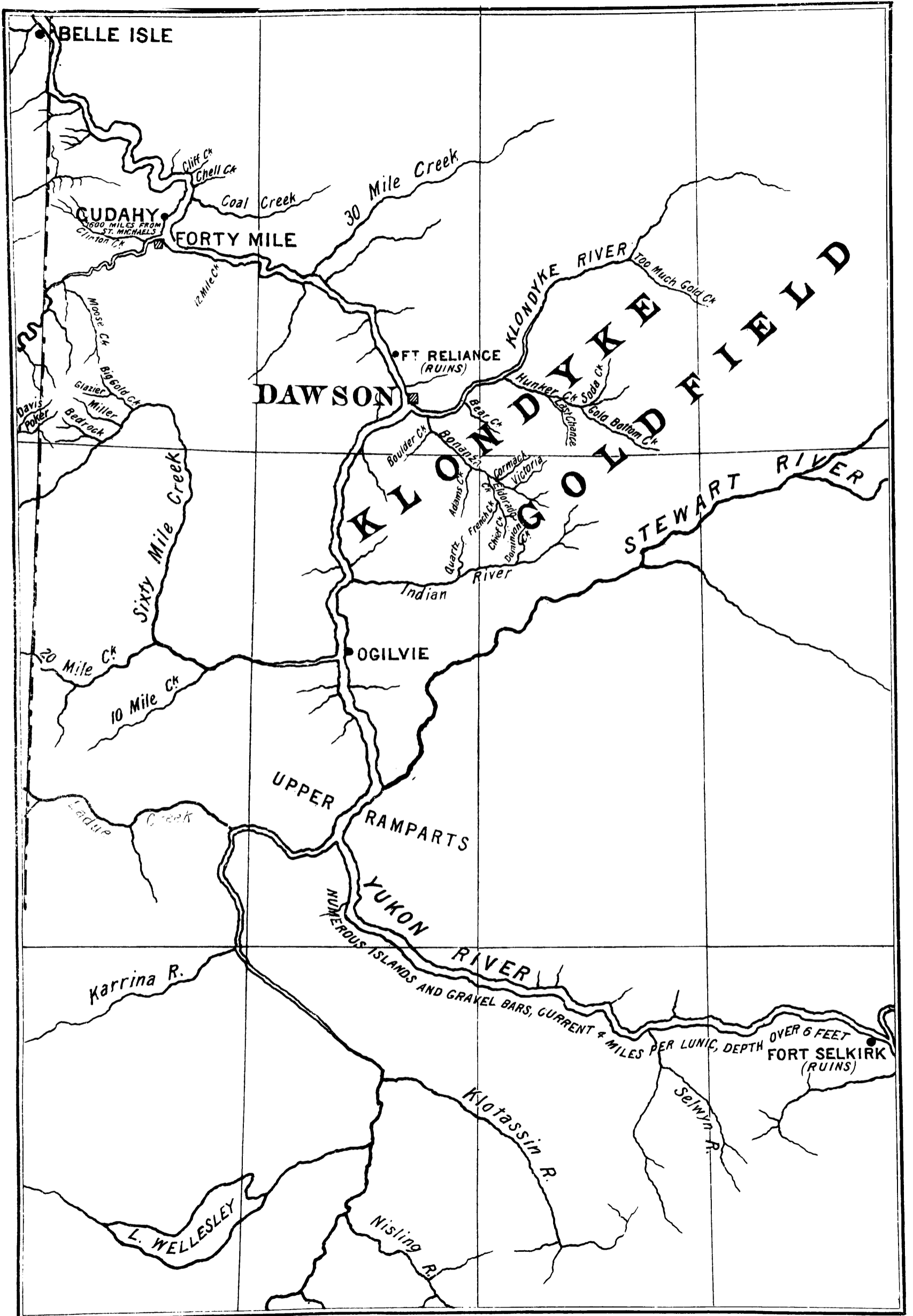
In this upper part the current is so swift that the lighter material and the finer gold are carried away, leaving in many places a rich deposit of coarse gold overlain by coarse gravel, the pebbles being so large as to hinder rapid transportation by water. It is under such conditions that the diggings which are now being worked are found, with some unimportant exceptions. The rich gulches of the Forty Mile district and of the Birch Creek district, as well as other fields of less importance, all head in the gold-bearing formation.

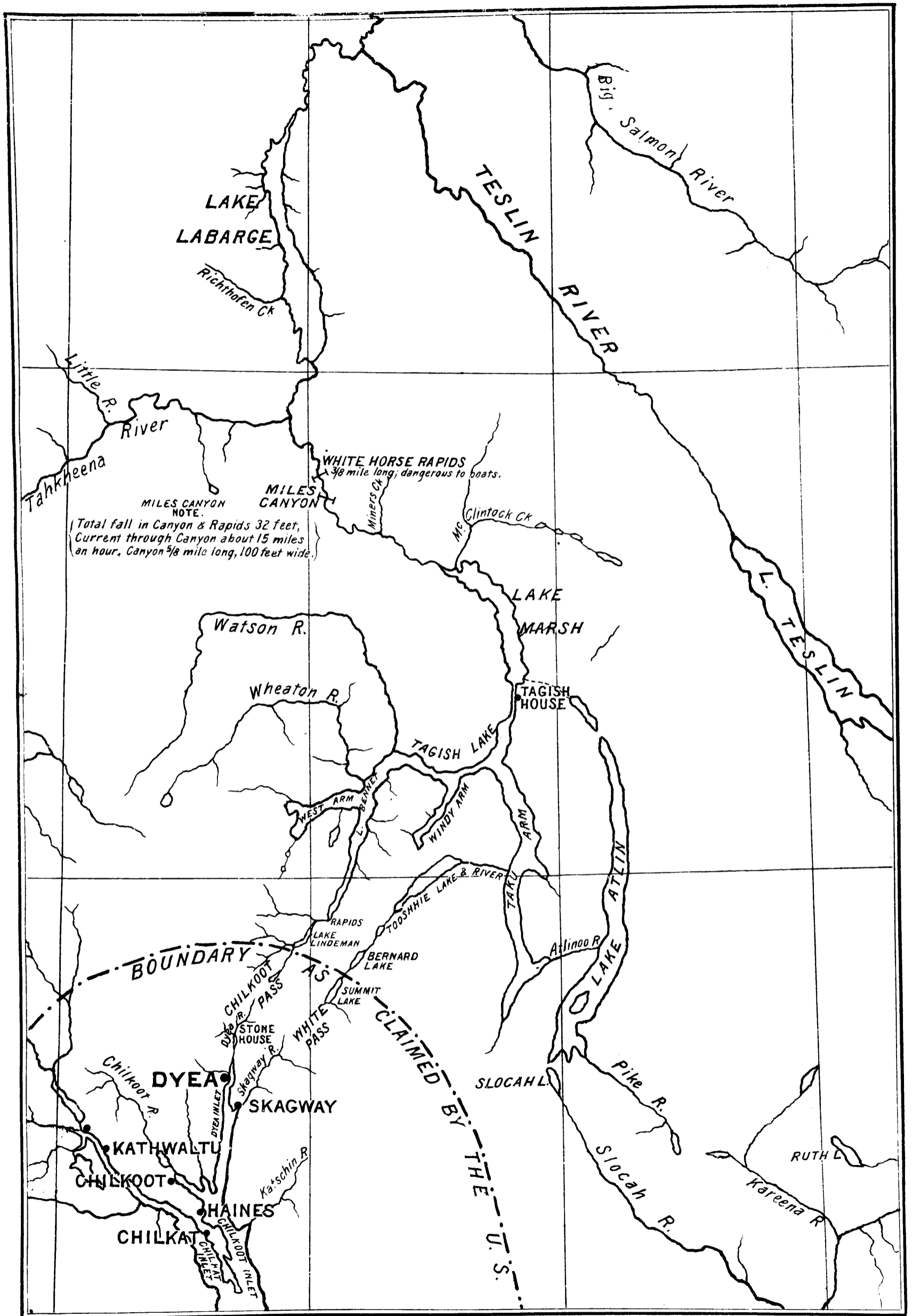
A short distance below the heads of these gulches the stream valley broadens and the gravels contain finer gold more widely distributed. Along certain parts of the stream this finer gold is concentrated by favourable currents and is often profitably washed, this kind of deposit coming under the head of "bar diggings." The gold in these more extensive gravels is often present in sufficient quantity to encourage the hope of successful extraction at some future time, when the work can be done more cheaply and with suitable machinery. The extent of these gravels which are of possible value is very great. As the field of observation is extended farther and farther from the gold-bearing belt, the gold occurs in finer and finer condition, until it is found only in extremely small flakes, so light that they can be carried long distances by the current.

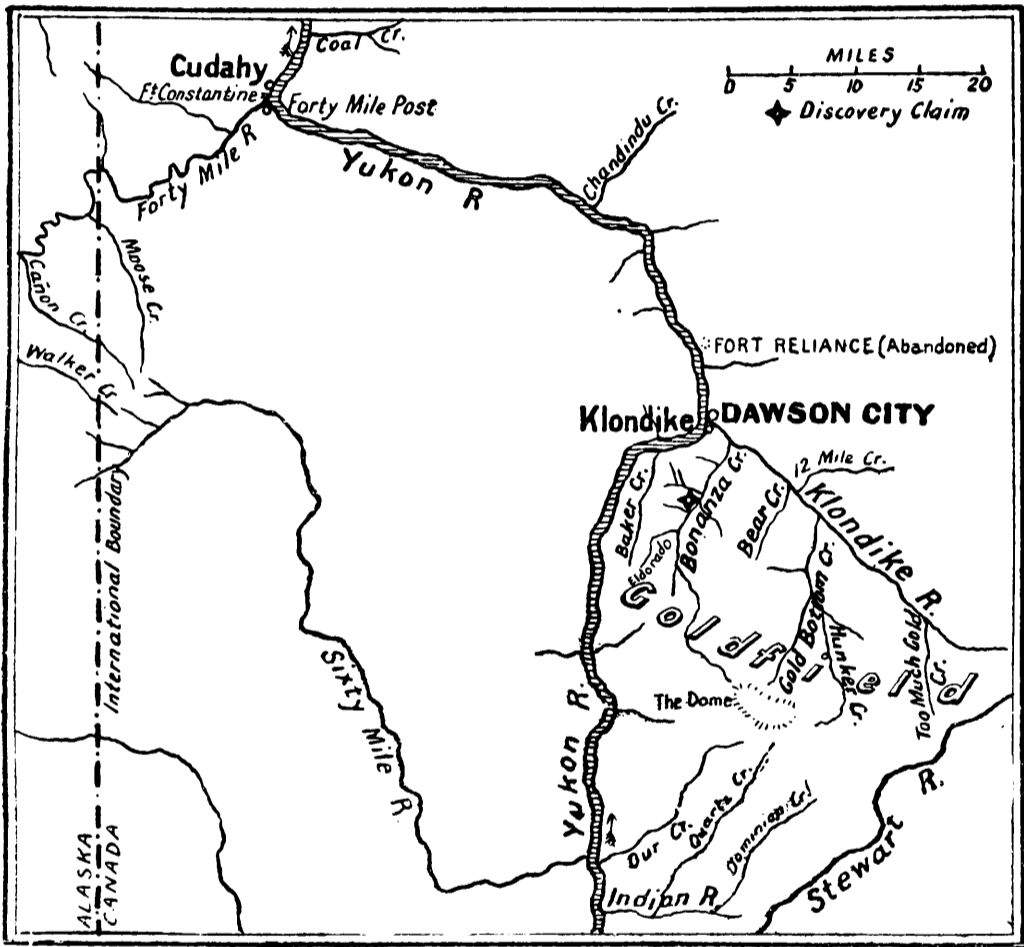
It may be stated, therefore, as a general rule, that the profitable gravels are found in the vicinity of the gold-bearing rock.

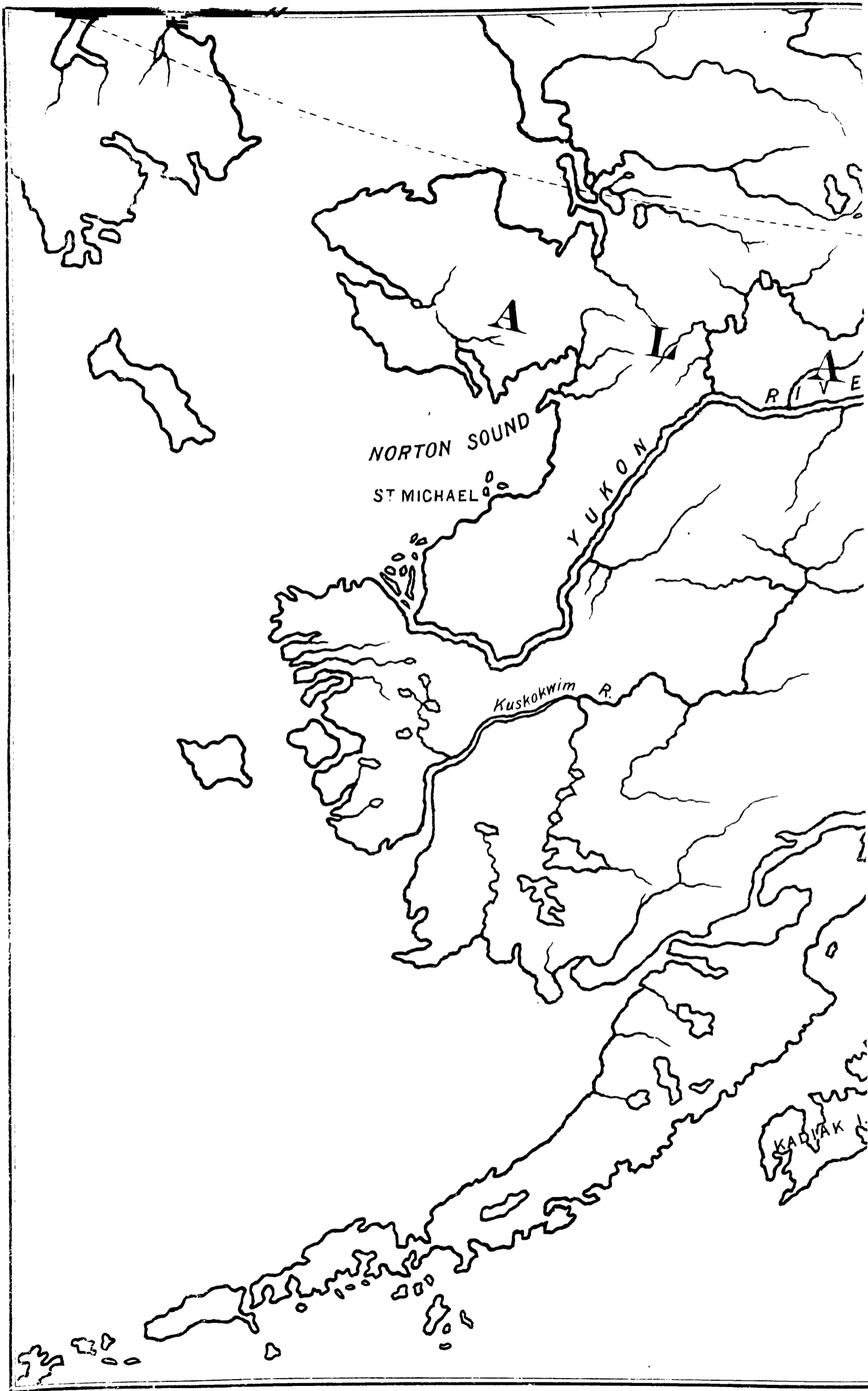
The gold-bearing belt forms a range of low mountains, and on the flanks of these mountains, to the north-east and to the south-west, lie various younger rocks which range in age from carboniferous to very recent tertiary, and are made up mostly of conglomerates, sandstones and shales, with some volcanic material. These rocks were formed subsequent to the ore deposition, and therefore do not contain metalliferous veins. They have been partly derived, however, from detritus worn from the gold-bearing belt during the long period that it has been exposed to erosion, and some of them contain gold derived from the more ancient rocks and concentrated in the same way as is the gold in the present river gravels. In one or two places it is certain that these conglomerates are really fossil placers, and this source of supply may eventually turn out to be very important.

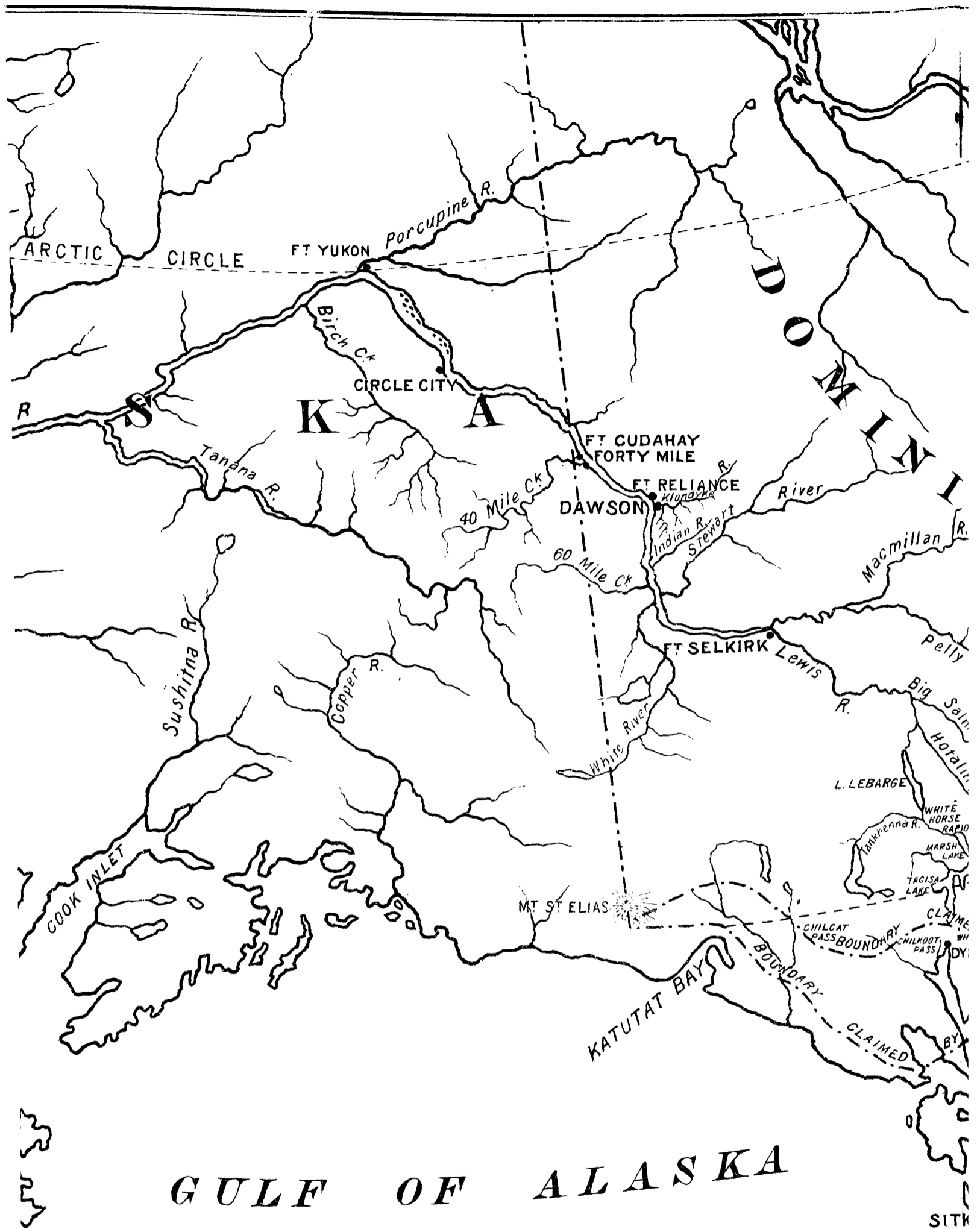
In the younger rocks which overlie the gold-bearing series there are beds of black, hard, glossy, very pure lignitic coal. An area of these coal-bearing strata lies very close to the gold-bearing district, in the northern part of the region examined, and as the beds of coal are often of considerable thickness and the coal in some of them leaves very little ash and contains volatile constituents in considerable amount, it is probable that the coal deposits will become an important factor in the development of the country.





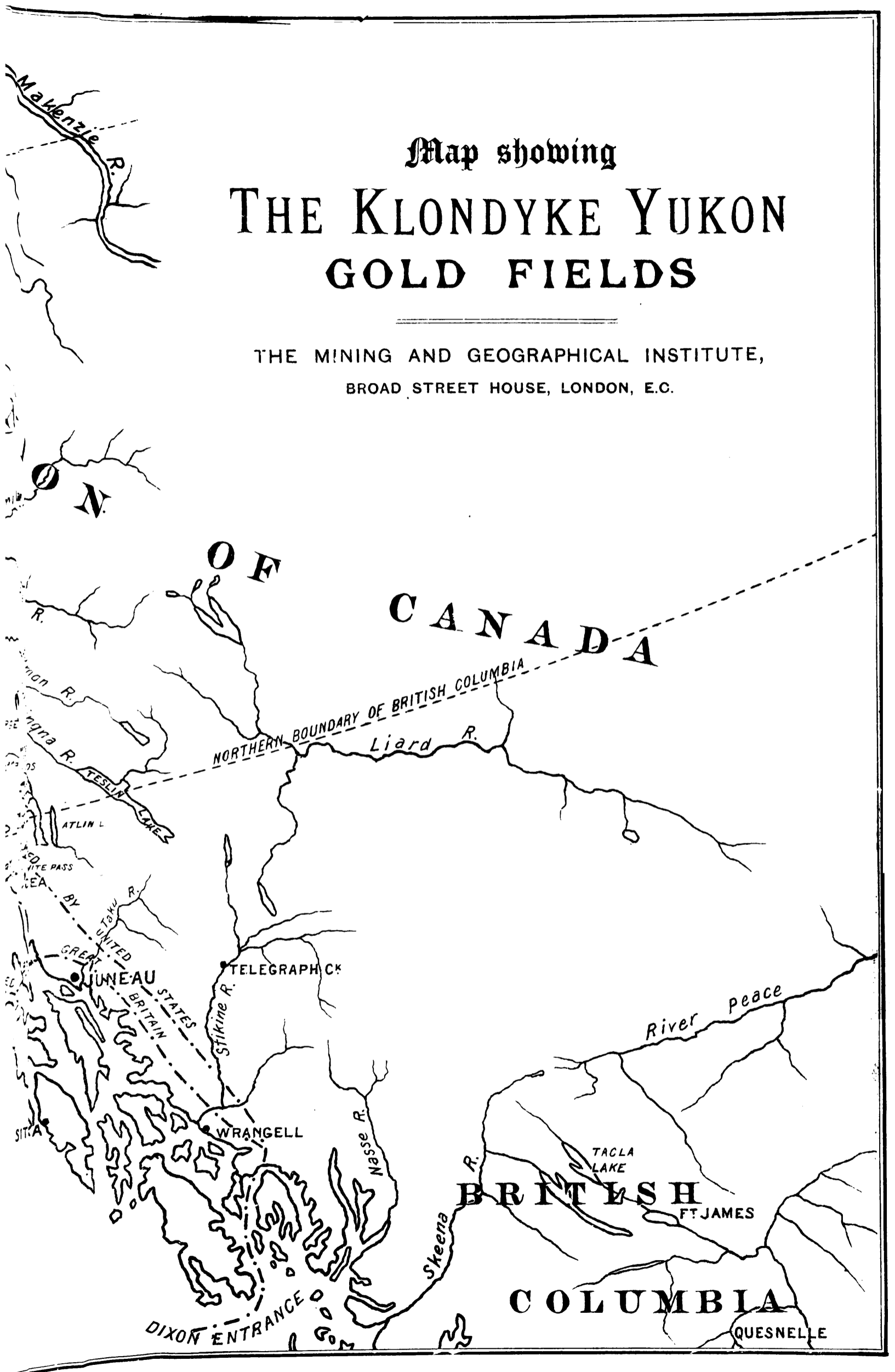






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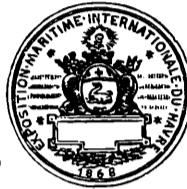
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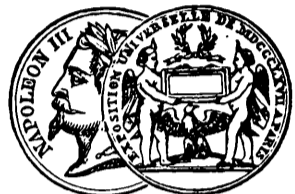
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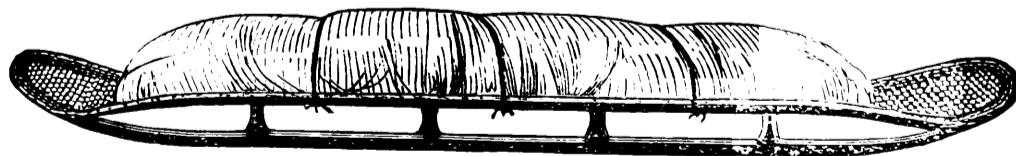
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