THE GEOLOGY AND HISTORY OF MINING AT GOLDSTREAM

Performed for The Geological Association of Canada,
Pacific Section
Victoria, British Columbia
by
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Submitted to Doug VanDine

INTRODUCTION AND ACKNOWLEDGEMENTS

Victoria's growth surge during the mid-1800's can be attributed to its location on the route to the wealthy gold fields of mainland British Columbia (see Appendix A). However, the geology and mineral wealth of Vancouver Island also played an important role in the city's development, as it was the search for minerals which opened up large sections of the Island for settlement, and resulted in Victoria becoming a cultural as well as supply centre.

Goldstream is one of five main areas around Victoria where mining activity occurred. The others, Iron Mine Bay at Sooke, Leechtown, Butchart Gardens, and Mount Douglas Park, will be focussed on in separate reports.

The purpose of this project is to enhance public awareness of the geology of Victoria, and the historical importance of mining to its growth. As well, the reader will gain a better understanding and appreciation of the significance of geology and mining.

Information was gathered by many means and from various locations. Newspaper accounts of the activity at Goldstream have been used extensively throughout the main body of this report. They can be found on microfilm at the British Columbia Provincial Archives (19th Century only) and the British Columbia Legislative Library and Public Library (after 1899). As well, a number of documents and reports were consulted from the Provincial Archives' holdings, including a land registry for the Goldstream region at the turn of the century, and a book of adventures written by a miner and explorer of the 1850's, William Downie. The vertical file at the Archives was also helpful, mostly as a starting point.

The introductory section on geology owes itself to the "layman's" descriptions given by Dr. Nick Massey. His guidance through the depths of geological terminology allowed the writer to present a (hopefully) clear and simple description of the geology to be found at Goldstream. Books and reports on this subject were found at the Ministry's library.

Superficial research on the effects of the mainland gold rushes on the growth and development of Victoria was completed at the Greater Victoria Public Library, and a short section on this topic included as an appendix.

The appendix on mining methods is based on a book by Garnet Basque, entitled The History of the Canadian West: Methods of Placer Mining (November 1983, Mr. Paperback). It was found at the Public Library as well. Pamphlets and reports supplied by Dr. Nick Massey at tha Ministry of Energy, Mines and Petroleum Resources were also helpful in this area.

Appendix C, 'Biographies of Important Characters,' was completed through research at the Provincial Archives and the Public Library. The Archives' vertical file (found on microfilm) was the main source.

Some information was found at the City of Victoria Archives, the Freeman King Nature House in Goldstream Park, and the Malahat Division of the Parks Branch.

The writer gratefully acknowledges the invaluable help and support given by Dr. Nick Massey and Mr. Doug VanDine; the patient time given by Brian Young and the staff at the Provincial Archives Reference Desk; the assistance given by Carol at the Freeman King Nature House, everyone at the Malahat Division of the Parks Branch, the staff of the Ministry of Energy, Mines and Petroleum Resources Library and Records, and everyone else who helped to put me on the right track.

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The Geology of Goldstream

Brief Description of Boundaries

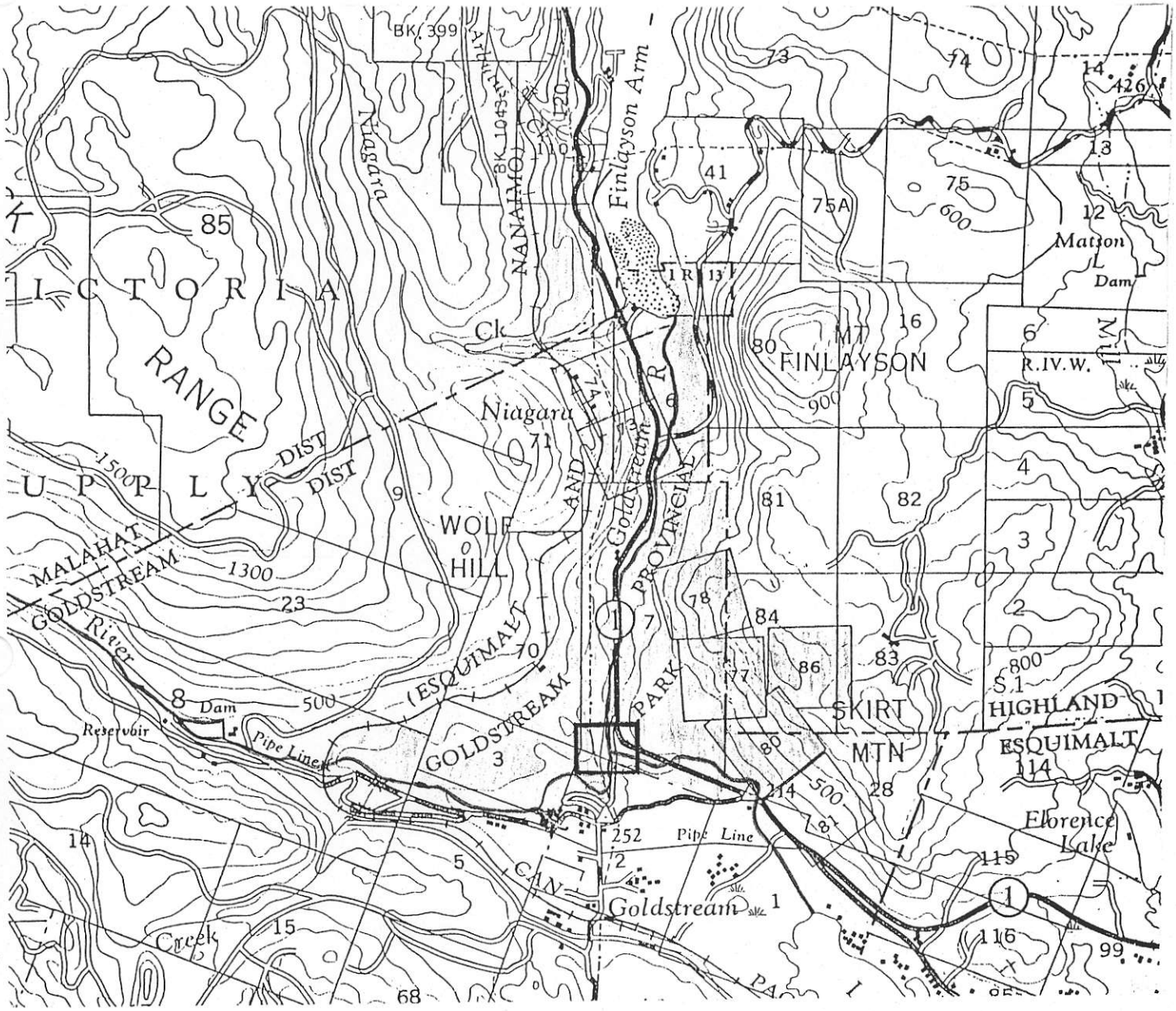
The Goldstream District covers a considerable area northwest of Victoria, but the locality focussed on in this report lies in the southeast corner of the district. It includes Finlayson Arm and the lower end of the Goldstream River Valley. Mount Finlayson, Mount Skirt, and Wolf Hill embrace the area, which extends south to the town of Goldstream; it contains the Malahat Drive, and a segment of the Esquimalt and Nanaimo Railway which runs north through the region (see Figure 1).

The Leech River Complex and Its Components

The Goldstream area is a part of the Leech River Complex, which itself is a part of the Pacific Rim Terrane (see Figure 2). The complex extends the width of Vancouver Island: on the west coast, it covers the distance between Port Renfrew and Sombrio Beach, narrowing down to about a half a kilometre on its eastern end. To the north, it borders two other packages, the Wark-Colquitz Complex and the Bonanza Group, which are divided from the Leech River Complex by the San Juan-Survey Mountain Fault. To the south lies the Metchosin Complex, bounded by another fault, the Leech River Fault. This fault is very well definod, generally following the Leech River Valley, but the San Juan-Survey Mountain Fault is less discernible, especially on its eastern end where it borders the Wark-Colquitz Complex. These thrust faults (see Figures 3 and 4) are two of the three major faults where oceanic plates, millions of years ago, collided with the primitive prototype of Vancouver Island.

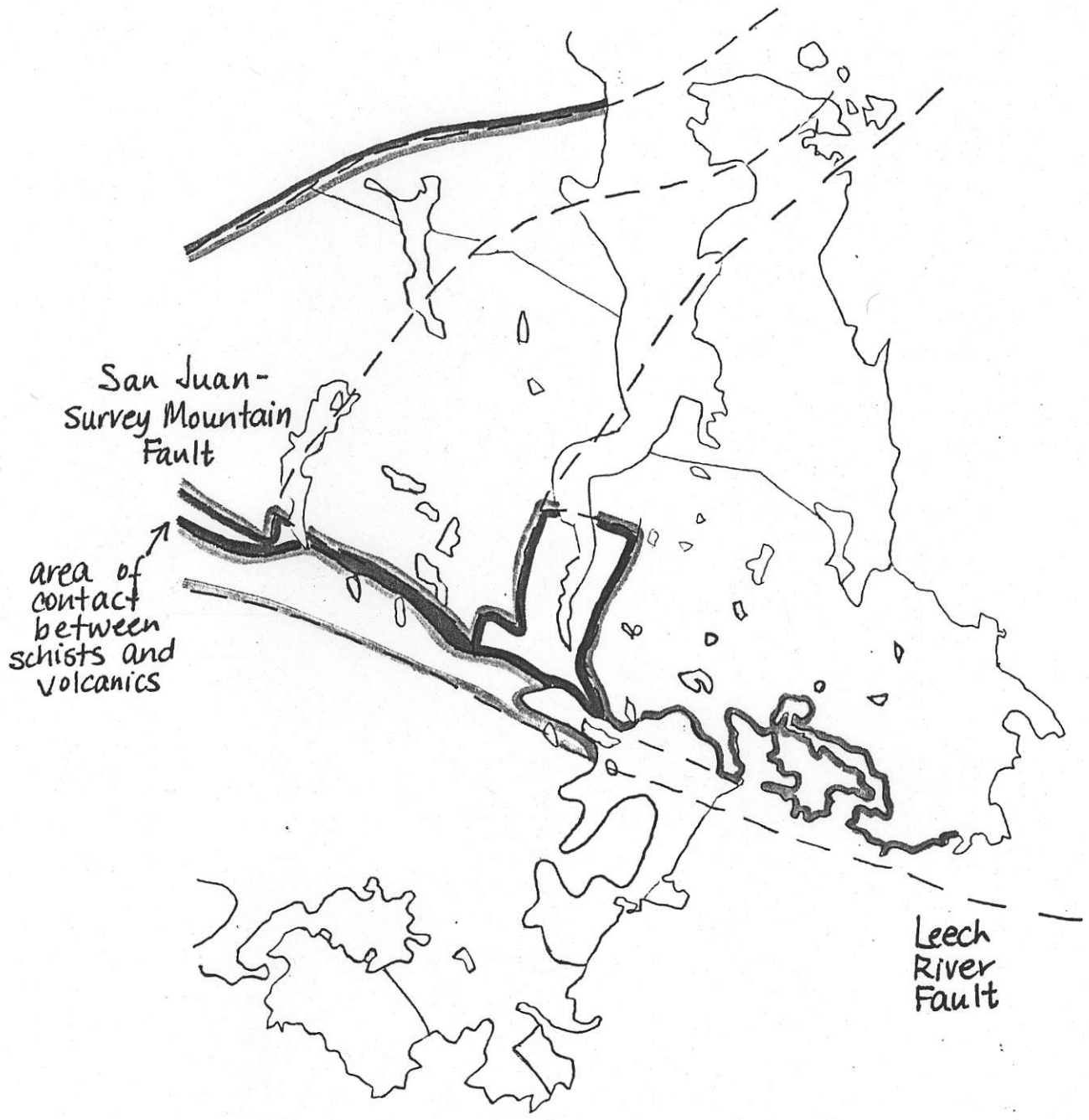
Approximately 42 million years ago, there was a reorganisation of the movements of the Pacific Plates. As a result, the Metchosin complex was pushed under the Pacific Rim Terrane, which was then thrust beneath the Wark-Colquitz and Bonanza Groups, causing extensive deformation throughout.

The Leech River Complex is composed of two parts: the Leech River schists and the Malahat Volcanics. The schists comprise most of the complex, and are neighbored to the north by the smaller volcanic formation. Their division is not very accurate, as there appears to be a gradual change from the schists into the volcanics.



Scale 1 centimetre : 2 kilometres

Figure 1. Topographical Map of the Goldstream Area. Green indicates the region studied, and the black square is the approximate area of the Britannia map (see Figure 11) The path of Goldstream River is also traced, in blue. [from a Ministry of Lands and Forests Map, sheet 92 B/5 East]



Scale 1 centimetre : 2 kilometres

Figure 2. Geological Map of the Goldstream Area.

[from "The Naturalist's Guide to the Victoria Region," edited by Jim Weston and David Stirling, 1986, inside front cover]

Legend

- Metchosin Volcanics
- Leech River Schists
- Malahat Volcanics
- Wark-Colquitz Complex
- Bonanza Group
- Colwood Delta Sequence

The Leech River schists are sedimentary formations which have been slightly metamorphised by a combination of low temperatures and high pressures. Muddy sandstone was transformed into shiny black schist, which has a characteristic "wood-grain" appearance. This metamorphism increases as you travel south through the complex, but little mineralisation has occurred. In 1917, Clapp studied the area and wrote in a report that 'although cut by numerous gold-bearing quartz veins the Leech River schists are not otherwise mineralized to any great extent' (p. 381).

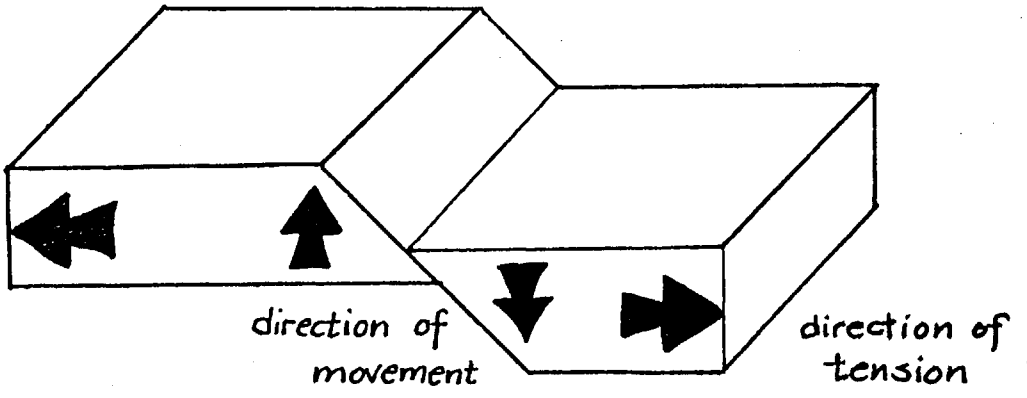


Figure 3. Cross-Diagram of a Normal Fault. [adapted from "Earth" by Press and Siever, 1986, p. 457]

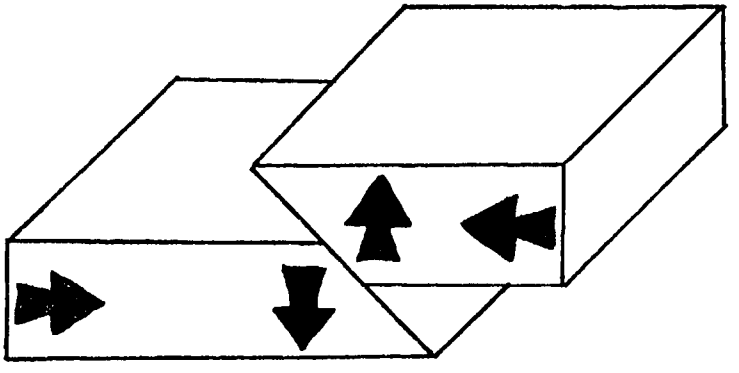


Figure 4. Cross-Diagram of a Thrust Fault. [adapted from "Earth" by Press and Siever, 1986, p. 457]

Mineralisation, however, has occurred throughout the Malahat Volcanics, rather extensively in some places. The volcanics comprise an

irregular but consistent belt, 'varying from 200 feet to 5 miles in width' (Clapp, 1917, p. 72), and almost completely borders the Wark-Colquitz Complex to the north. All of the volcanic formation has been metamorphised, but it is in this bordering area that the most mineralisation has occurred.

Gold and Copper Deposits

The placer gold which began the stampede to Goldstream has the same origins as that which caused the Leech River gold rush the following year. Their source is the gold-bearing quartz veins found throughout the schist formation; as they are mechanically weathered by wind or water, the gold fragments are carried down the hills into streams by the natural creeping of the soil (see Figure 5). The stream current picks up gravel from the bed, leaving the heavier gold behind. Gold can thus be concentrated on levels as the sediment is carried away, forming what is known as "paystreaks," and is then covered by gravel coming from upstream (see Figure 6). After severe flooding of the stream (which can occur at Goldstream), the gold becomes concentrated on or near the bedrock, or on false bedrocks formed by hard-packed clays.

The Leech River valley is drained by Goldstream River, Wolf Creek, Leech River, Bear Creek, and Jordan River; Clapp wrote that one could find 'placer gold almost exclusively in the gravels of the streams that drain the area underlain by the Leech River schists ... and in the gravels of virtually all of these streams fairly coarse gold may be obtained' (p. 367). However, in his report for the Geological Survey of Canada in 1877, Dawson wrote that 'the slaty belt is not ... equally auriferous throughout, a fact shown not only by local differences found in the east and west part of Leech River, but by the absence of rich deposits on the Goldstream, which seems in its relation to the slate belt to be as favorably situated as the Leech' (p. 99). Clapp also thought that large amounts of gold may exist on the smooth interstream areas, but after more extensive investigation this was disproved.

Of the auriferous vein deposits, Clapp wrote that no significant amounts of gold had been found, and the veins that were prospected had proved unsuccessful.

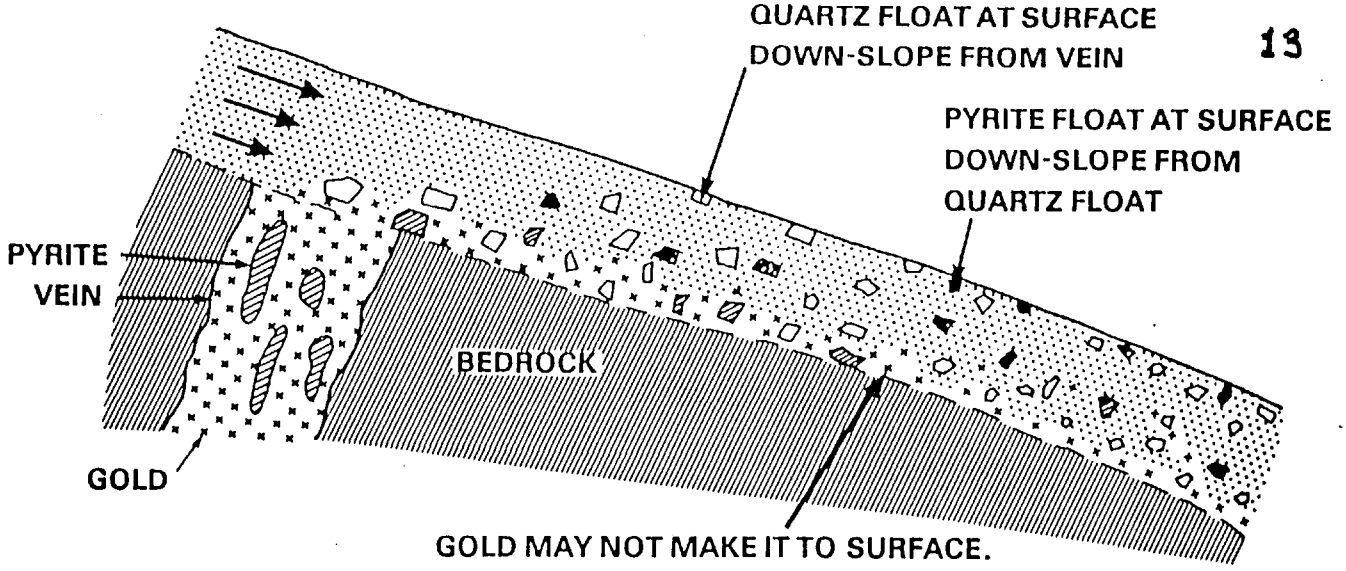


Figure 5. Vein Being Weathered and Overburden "Creeping" Downslope. [from "Introduction to Prospecting" by Faulkner, 1986, p. 96]

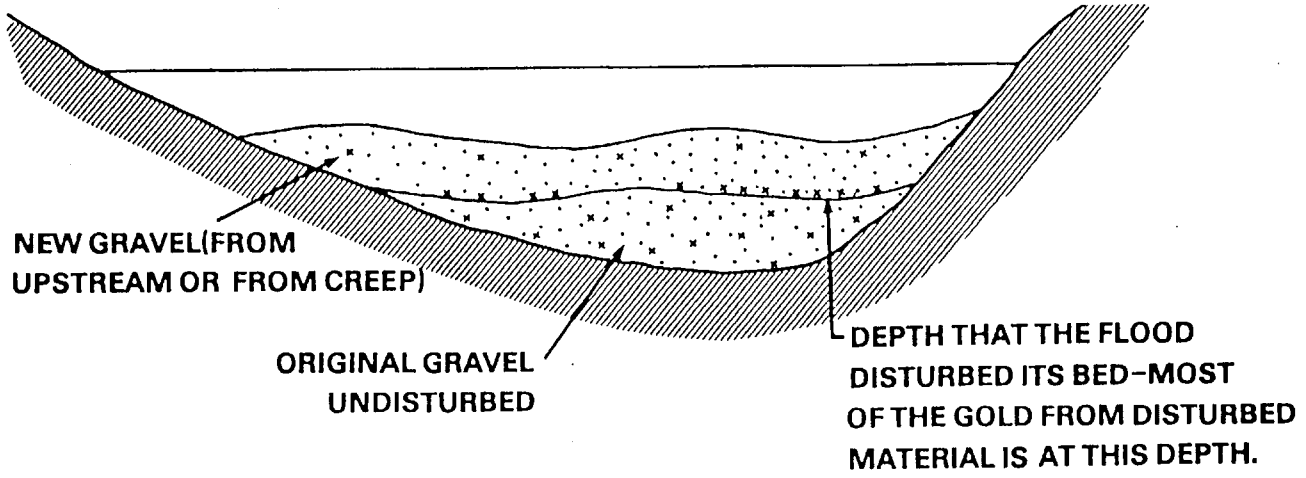


Figure 6. Deposition of Gold in Layers, Covered by Later-Settling Gravel from Upstream. [from "Introduction to Prospecting" by Faulkner, 1986, p. 97]

The copper deposits of Skirt Mountain may date back 38 to 40 million years, the time when the plate reorganisation deformed the Leech River Complex. Because copper has been found in the Metchosin Complex to the south, it is possible that these deposits could have risen further into the Leech River Complex through igneous intrusions (remember that a portion of the Metchosin Complex lies beneath the Leech River Complex) (see Figure 7).

In 1899, W. M. Brewer wrote an article in the Engineering and Mining Journal which noted that the copper bodies of Vancouver Island contain, in some cases, quite large quantities of magnetite. This explains why no

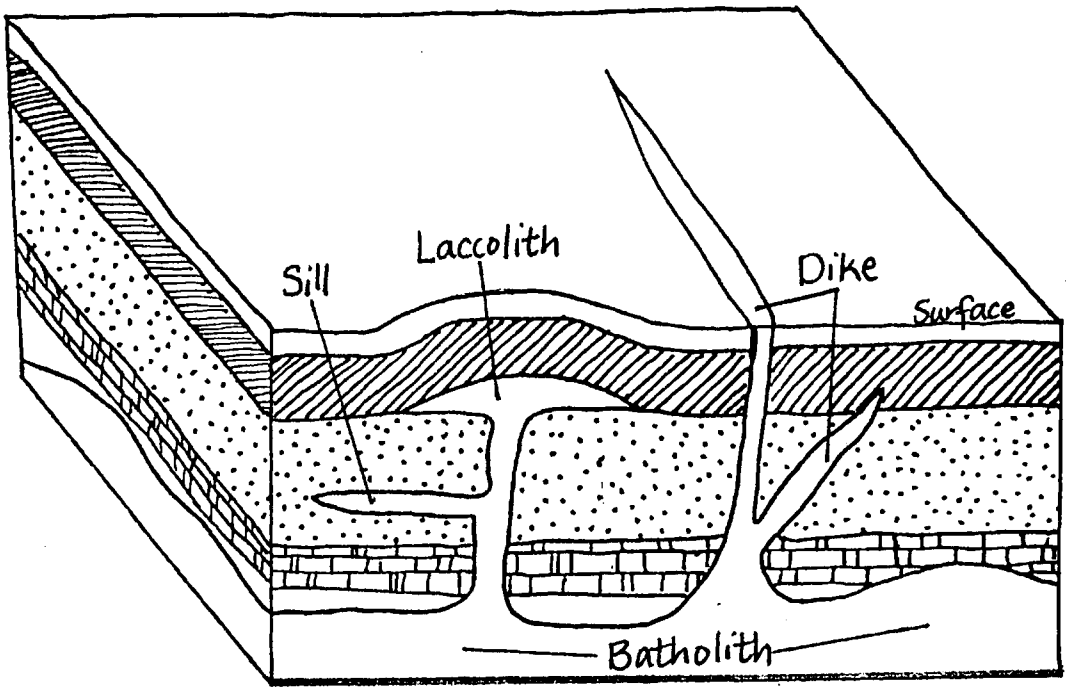


Figure 7. Forms of Igneous Intrusions. Volcanic Rock finds its way to the surface in many different shapes. [adapted from Lambert's "Field Guide to Geology", 1988]

copper companies were able to prosper at Goldstream.

Because the Leech River Formation began as sedimentary rock, there was some speculation as to whether or not it could be a source of coal or oil. In 1955, G. L. Bell noted that in their present metamorphosed state, the rocks could not have accumulated these fuels. He gave evidence for his theory by observing the lack of seepages from the Leech River Fault, which should occur if oil or gas were present. Thus, it is improbable that Goldstream has any value as a source of fossil fuels.

Finlayson Arm, which the Goldstream River empties into, was carved by glaciers. Following the formation of this fjord, the mouth of the river was submerged and sediment was deposited there; this resulted in the tidal flats of an estuary.

Another extraordinary feature of the Goldstream area is its ribbon chert outcroppings, most apparent on the B. C. Hydro right of way, west of the river. This rock was shoved northward between two northeasterly trending faults, and alternates with soft beds of argillite, a sedimentary rock formed from clay minerals. These outcroppings are perhaps the best on the Island.

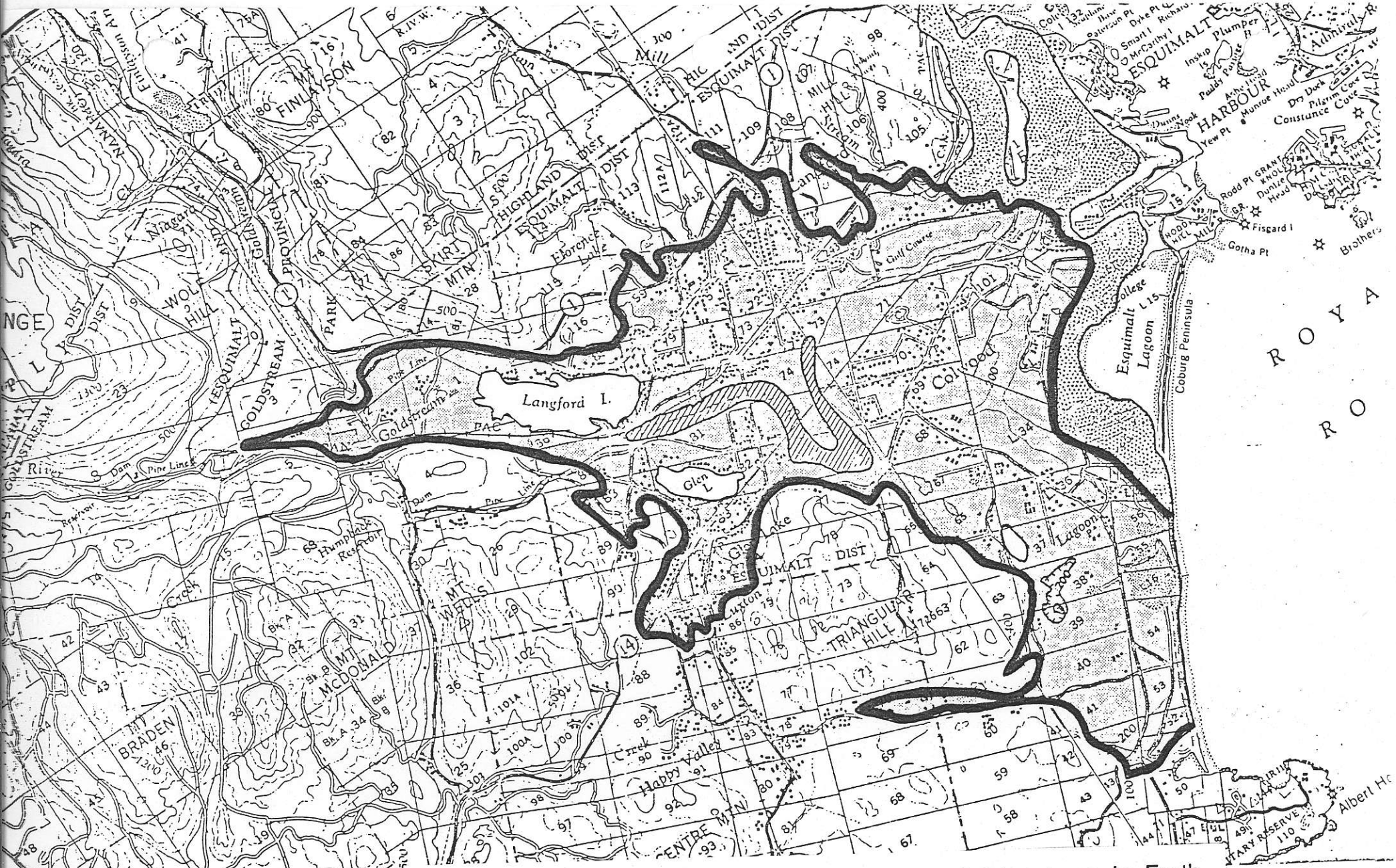


Figure 8. The Colwood Delta Formation. [from " Adventures in Earth Sciences Series: Victoria-Saanich Geology" by Rau, 1976, p. 54]

Colwood delta was deposited as outwash from the front of the glacier west of Langford Lake at a time when sea level was 225 to 275 feet higher than present. The last meltwater channel across the delta has been filled with organic muck. Subsequently the drainage was diverted north into Finlayson Arm along the present course of the Goldstream River.

The Park is also faced on one side by the Colwood Delta Sequence (see Figures 2 and 8), under which the Leech River Fault passes. The Colwood Delta is composed of sand and gravel, deposited about 13 000 years ago by a glacier which terminated near Goldstream. As the glacier melted, water channels travelling south cut into the surface of the gravels, which can still be seen today.

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Today, many gravel pits exist in the Colwood Delta Sequence, including one just north of the Parks Branch Office in Goldstream Park.

The geology of Goldstream is very complex, and as yet no thorough investigation of the area has been made. It includes portions of three separate formations, but the divisions between them are not well-defined.

Pausing on the trail up Mount Skirt, it is easy to imagine the Goldstream valley as it may have been last century. If one is taken enough, the sounds of mining activity can be heard, drifting on the wind: the creaking and groaning of a rail car in the copper mine, the harsh blasting of rock around a gold-shot quartz vein, or the excited cries of success from a gold panner somewhere on the river below. Yes, it is easy to let the imagination run free in such a wild place, to indulge in visions of the goldfevers and mining excitement that erupted in this tiny valley in the past (see Appendix B).

Gold!
The First Surveyors of the Area and Their Effect

J. D. Pemberton

The Indians called the area (anglicised) '*SAWLUCTUS*,' or '*our fishing ground tucked inside the arm*,' but when J. D. Pemberton, colonial surveyor and employee of the Hudson's Bay Company (see Appendix C), investigated the area in 1852, he found more importance in the gold showings there than in the abundance of fish. Little excitement resulted from his reports, but Pemberton predicted that Vancouver Island, once fully explored, would 'be found to be a gold producing country.'

Peter J. Leech

A short six years later, in 1858, Royal Engineer Peter J. Leech (see Appendix C) found traces of gold in the banks of a stream which emptied out into the Indians' arm, and thus named it 'Gold Creek.' When the people of the nearby Fort Victoria learned of his findings, there was an instant mad rush to the region. In August of 1858, the editor of the Victoria Gazette wrote of the rumors circulating around the city, stating that the stories were 'most extravagant,' and at the best, vague. Many questions and imaginations were sparked on the arrival of a group of mysterious miners bearing large amounts of secret treasure. The miners refused to remark on the origins of their loot, and after purchasing provisions they stealthily left town. Stimulated by these rumors, the idle miners, waiting in Victoria for news of a new gold field on the mainland, began to carry out extensive prospecting around the city. Apparently, the results of their

findings were reported back in the same vague manner as the stories which were their incentive (Gazette, August 21, 1858).

'Gold was found, but the diggings were soon abandoned from an overflow of water in the creek, which stopped the work before the miners had time to get to the bedrock' (Victoria Evening Express, October 17, 1863, p. 3). However, the editors of the Evening Express were assured by a 'most reliable gentleman' who had prospected there, that there was great promise in the rocks of Goldstream.

More Activity in 1859

One year later, on August 26, 1859, the Victoria Gazette reported that oonsiderable excitement had arisen following the reported discovery of gold on a small stream, about fifteen to twenty miles to the northwest of Victoria. 'The most silly and idle rumors were circulated all the day, and in several bar-rooms suspicious collections of specimens of coarse gold were exhibited as having come from the new diggings on "Dead Man's Creek" ' (p. 2). They emphasized their scepticism by writing that 'first, it was stated that gold had been found near the Governor's residence -- next at Silver Lake -- then at Saanich, and now at Dead Man's Creek -- each time the report becoming more vague and mysterious' (p. 2).

The Gazette did consider the news dependable, however, as it went on to write:

> Yesterday morning, ... Mr. T. W. Davidson, who is represented to us as an experienced miner from Monte Cristo, Sierra Co., Cal., reported the discovery of gold on a creek about 15 miles to the north-west of Victoria. He says he started out on Tuesday [two days previous] in company with some six or seven others, to discover a route to the Saanich river, upon which he had heard gold had been found. After travelling ten or twelve miles in a northerly direction, the granite formation of the country disappeared, and slate, interspersed with quartz rock, was found in abundance [indicating the Leech River Formation]. Five miles further on, the party discovered a creek, which they named Davidson Creek, and procoeded to prospect it. Mr. Davidson asserts that they found gold in sufficient quantities to pay handsomely (August 26, 1859, p. 2).

The paper went on to say that this story had been corroborated by others, but there was some doubt as to exactly where these new diggings were located, whether in the Saanich District, or on Dead Man's Creek.

The next day, the paper recounted the following story of a prospecting party:

> We started from Victoria, ... taking the Craig Flower road, and keeping it until we reached Mr. Langford's farm ... [We] crossed his large grain field and took a trail which ... leads to Langford Lake ... Here the trail winds around the brow of a mountain, called Mt. "Skurt," for a mile or more. We descended the mountain on the north side to a creek, which apparently runs from the lake to Finlayson Inlet. This creek is about 12 miles distant from Victoria, 20 feet wide, and about 10 miles long ... We prospected and found gold everywhere in good prospects [In the morning, claims were staked and the trip back to Victoria begun] ... [We] met maybe 500 people on the way to the new diggings on our return, and there were probably 20 there the time we were (Gazette, August 27, 1859, p. 2).

However, the paper noted that a number of prospectors had returned, unable to even find color. They restated their belief that the gold diggings, which had raised so much excitement in the city, did not exist.

The Stampede of 1863-64

There were no further reports of activity in the region, until April 3, 1863, in the Victoria Colonist. Three cattlemen on their way to the Cowichan Valley (northwest of Victoria) saw two men encamped on 'Golden River,' apparently carrying out mining operations. This story was not followed up in later issues.

A Prospecting Party

Later that year, Governor James Douglas (see Appendix C) realised that something had to be done to boost the economy of the Colony of Vancouver Island. Recognising the huge benefits of the Cariboo and Fraser gold fields in New Caledonia (today mainland British Columbia), he organised a party to investigate the mineral resources of the Island. The group of four miners began in the immediate area of Victoria, and after a

short eight or ten days, they returned on the rainy day of October 17, 1863 with news of placer gold diggings twelve to fifteen miles from the city.

The October Rush

The newspapers reported this news with some scepticism, but everyone saw the great positive influence that the diggings would have on the city's trade. The party reported finding coarse gold in the banks and bars of the stream, in sufficient quantities to pay at least five to seven dollars a day to the hand. A stampede was soon expected to the locale. The editor of the Evening Express praised Governor Douglas on the success of his expedition and on his administration's rejuvenation of Vancouver Island. He further honored His Excellency by proposing that the locality be known as 'the Douglas Diggings' (October 17, 1863).

The first month was the most crucial to Goldstream, during which time the opportunities of the diggings would be established, to be judged either worthless or worthy of further development. In the days following the discovery, the newspapers of Victoria described the activity at the Douglas Diggings as merely consisting of test pits and many claims, and expressed their confidence in the prescence of gold in payable quantities. Due to heavy rains, it was a slow beginning for the Goldstream stampede; however, the venders of liquor and other 'creature comforts' were on the site within a couple of days, ready for business.

On October 21, the Colonist reported that experienced miners from the Cariboo gold fields believed they could return three to five dollars a day each at the Douglas Diggings, a very large sum at the time. They also wrote that at the beginning of the month, Robert Miller (see Appendix C), a member of the Governor's expedition, had found a quartz lead 'twelve feet thick and apparently very deep,' and that he had followed the outcropping for over a mile. He estimated that the ore would pay at least fifteen or sixteen dollars to the ton in gold and silver values; but Miller did not stake the ground. A friend and co-member of the expedition party, George Clarke (see Appendix C), set out to prospect the quartz, and he became the first to stake a claim on the lead and form a quartz mining company later in the month. He brought some specimens from his claim to town, and it was reported that they looked considerably richer than those found by Miller. They were exhibited to the Governor, and announced by all to be

highly auriferous. The Express on the same day wrote that there were about fifty people at the diggings, and that a number of claims had been taken up, including the Victoria Company, the Discovery, the Union, and the Muir. No company had yet reached the bedrock but all were working zealously, while others were prospecting upstream.

On October 22, the Express reported the rumor that 'a certain innkeeper' had found coarse gold paying 'six bits' (or 75 cents) to the pan, but because this alleged discovery was along the trail which passed by his hotel, it was taken with reserve. However, another 'experienced miner' had found good prospects about a hundred yards below the Goldstream bridge, had staked a claim there, and returned to town for a rocker (see Figure 9 and Appendix D).

The following day, excellent returns were announced from all over the creek; one miner, C. R. Smallbone, was said to have yielded twenty-five cents from his rocker in only half an hour. This information, however, proved to be false. Other companies were meanwhile preparing for active operations, though their workings were described mostly as superficial scratchings in the earth. The Victoria Company had sunk a shaft, and were already down seventeen feet, having passed through heavy blue cement and a layer of gravel. The Discovery Company were planning a ditch to divert water into their sluices, and the Union Company were planning to sink a shaft like that of the Victoria. All of the active companies at this time were searching for placer gold, and varied only in the number of men working for them.

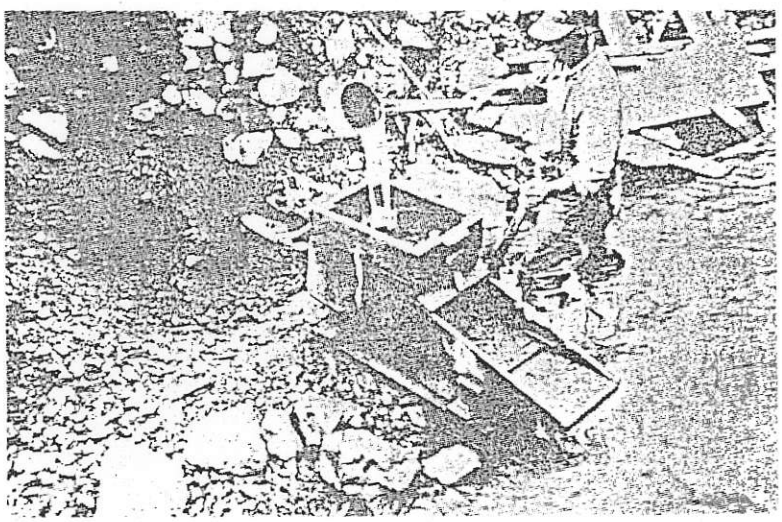

Figure 9. A Man Washing Gold with a Rocker on Spruce Creek. [from "The History of the Canadian West" by Basque, November 1983, p. 83]

Two members of another company travelled up the stream's south fork about fourteen or fifteen miles, and reported finding a number of promising gulches there.

In the October 26 edition of the Express, the editor wrote:

> We learn that several claims, where encouraging prospects were obtained, have been taken up below the bridge on Goldstream. We have also received additional information regarding the prospects reported to have been struck between the Sooke trail and Goldstream, which go to confirm previous announcements of paying diggings having been found. A few days further exploration, we are pretty confident, will prove the existence of remunerative diggings on the Island. (p 3)

By October 29, as the Colonist reported, twenty five men were on the site, and considerable work on the diggings had been completed. A few placer companies were troubled by water, and so had to construct windlasses (a type of hoist used in conjunction with buckets) to aid in pumping out the water. Only four claims were steadily at work, though every foot of ground around them suitable for similar operations was staked. A visitor to the diggings advocated this caution in a Colonist article: 'I think it would be very unwise of any one or more parties starting afresh until the present ones have proved their claims, for they are working well and in the right direction as also with determination and pluck and are fully supplied with provisions etc., to do or fail' (p. 3). Also by this day, two companies were established on the vein of quartz, now known as the Douglas quartz lead. Only one was in operation, Clarke's Douglas Company, and its first assay was returned at $260 to the ton, a very good price. As a result, many more companies were on their way to the locality, to see what kind of prospects they could attain there; the Rough and Ready Quartz Company, the Parmiter, the Britannia, the Vancouver, the St. Nicholas, and the Canadian were all formed over the next two days. Also new to the scene were the placer companies Ayreshire, and John Bull, while the Discovery Company investigated some quartz leads in addition to completing their placer ditch on the stream. The latter association even took some specimens into Victoria to have

them assayed, the results of which are not reported, but must not have been considerable as their placer claim was not abandoned.

By October 31, the Victoria Company had constructed a rocker, and believed that they had reached the bedrock in one corner of their shaft. However, they still had not washed a single pan of gold; instead one of the founding members, H. A. Pickett, was prospecting a quartz lead not far from the fork in the stream. In mid-November, for an unknown reason, the company's claim was abandoned.

High Hopes and Low Assays: The Story of Goldstream

The John Bull Company reported some difficulty with flooding on November 4, having sunk a shaft too near the stream. Their second shaft, by that time thirteen feet down, frequently passed through 'rotten quartz' with gold clearly visible. They also found coarse gold prospects on the surface of their claim, which sat about a mile and a half below the bridge. Their prospects looked good.

Muir and Doc McCandlish's (see Appendix C) newly formed 'Regina Company (after abandoning his placer claim), had its claim situated on a spur of the Douglas quartz lead. On November 4, they received an assay of $196 to the ton, which had drawn in the creditors and helped to establish the twenty-member company on the same day. The following day, 'a company of the ten best men in the city' announced their intention to build a quartz crushing mill when the quartz discoveries in the area were verified (Colonlst).

During the latter half of November, a few assays were recorded. On the 19th, the St. George was assayed at $172 to the ton of ore, taken near the Douglas quartz lead. Fortune, however, was not in favor of the Douglas Company (the original quartz company), whose assay returned no gold or silver found. Meanwhile, the Discovery Company had completed its ditch, was beginning to construct a dam, and expected to commence sluicing in a couple of days. The Ayreshire Company had encountered gravel throughout their twenty foot shaft, and had constructed a pump, and a windlass and bucket for the removal of water. Also troubled by water, the John Bull Company had finally hit gravel at fifteen feet, after passing through blue clay. Muir's quartz lead was being worked upon, and samples sent to Victorla for assay. The Canada Company were building log houses, and the

Rough and Ready had done little to begin, probably waiting for the other claims to establish the value of the quartz lead. Overall, there were sixty men at work in the area, for both placer and quartz companies.

The weather at the start of December suspended work in many of the claims, but by the 17th , the Discovery Company were ready to begin sluicing. The Scotch Company faced a large setback when their shaft of twenty-five feet collapsed after reaching the bedrock; but they were prepared to build a new, more supported, shaft nearby. On December 22, volunteers were called for from Victoria to improve the road conditions, to make the diggings more accessible and the transport of rock ore easier.

The end of the month saw renewed activity at Goldstream; assays of samples taken from the Washoe Company (formed by Robert Miller, who became known as the 'Robinson Crusoe of the Washoe') and Thomas Parmiter's company (see Appendix C) were returned at $288 in gold and $3.75 in silver, and $630 to the ton, respectively. They were said to 'eclipse anything yet found' on Vancouver Island, and of them the Express wrote:

> The Parmeter [sic] Company have ... found the main lode. Such results as these are highly gratifying, and must encourage further attempts at prospecting. The two companies' claims mentioned above [the Washoe and the Parmiter] are situated at a considerable distance from each other, so that there is every prospect of the quartz lode being of considerable extent' (Express, December 27, 1863, p. 3).

The following day's Colonist reported that the editor had been shown a sample of quartz from Goldstream, in which specks of gold were easily visible. This was a common thing for the mining companies to do, to create publicity for their claims and draw in investors (as well as gain some public attention for themselves).

On the 30th, the Parmiter Company held a shareholders meeting, where it was reported that a number of investors had been offered to sell out, but had refused. 'Great confidence [was] felt by the shareholders in the richness of the vein; assays made by private parties having confirmed to some extent the assay made lately [of $630 to the ton]' (Colonist, December 31, 1863, p. 3).

January saw an increase in the number of high assays being returned, as well as increased pushing by the editor of the Colonist, Amor de Cosmos, for the claim owners to work their land to see if it was worthwhile, such as by constructing arrastras to crudely crush the rock ore (see Figure 10).

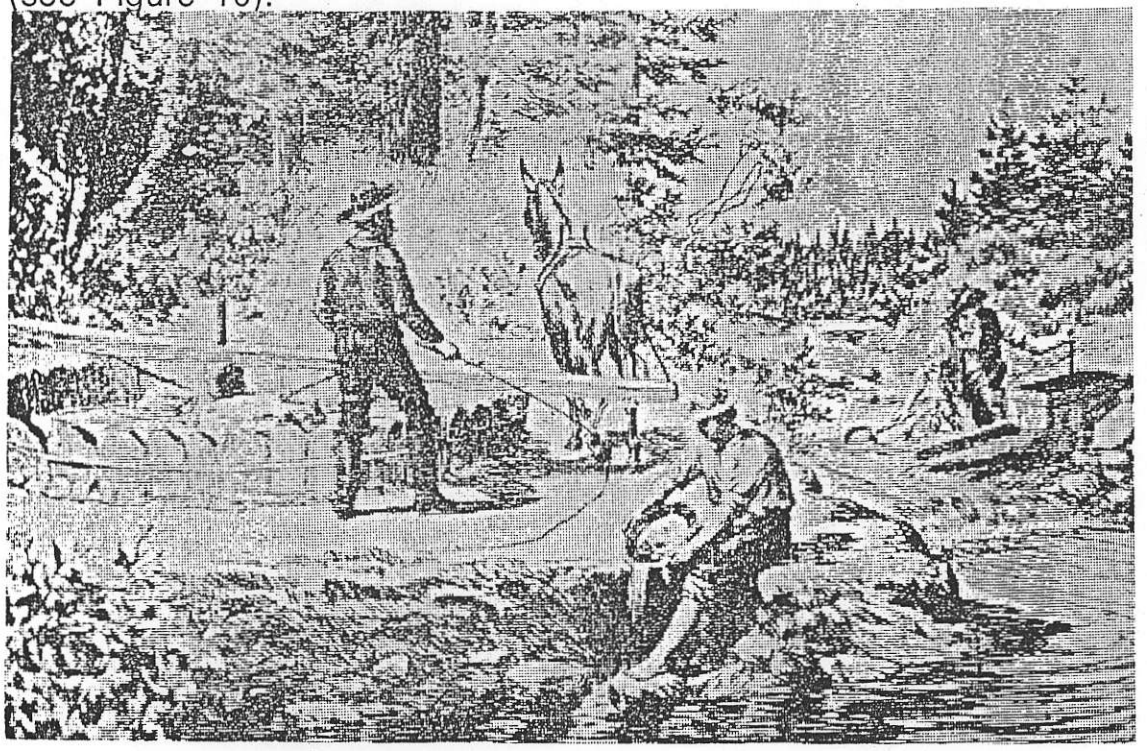

Figure 10. A Mexican Arrastra Grinding Ore, and Men Washing the Crushed Rock for Gold with a Rocker and a Gold Pan. [from Basque's "History of the Canadian West," November 1983, p. 17]

On January 4, Joseph Spratt and John Kriemler (see Appendix C) completed their steam-powered quartz crushing mill in Victoria, at the site of the Pemberton Building on Government and Broughton Streets. Ore was promptly sent by the American Company, and, although they knew little of milling and lacked experienced help, Spratt and Kriemler began to assay the ore from Goldstream. On January 6, the Discovery Company (who had turned from placer to quartz mining) was assayed at a mere six dollars to the ton, but on the 19th, the Britannia Company was returned an assay of $100 to the ton. On January 28, however, was the assay to surpass all others; the Britannia Company was assayed by a San Francisco firm at $1 557.46 in gold, and $2.57 in silver, and the assayer predicted that it would take at least six years to work the lead! Although these

excellent assays caused a surge in activity at Goldstream in the end of January, little news was reported by the Victoria papers in February.

On February 29, the Britannia Company wrote a letter to the Colonial Secretary asking for a grant of land on the Douglas quartz lead. They included a description of the deposits:

> There are two Ledges of Quartz running through the ground and crossing the Stream a little below the confluence of the two branches.
>
> The northern ledge has been opened out at a short distance from the stream - and some thirty tons of rock taken out - a large portion of which appears to be worth crushing. The Company [Britannia] have had several assays made ... all of which have given returns of the most encouraging nature.
>
> The second or southern ledge shows a good indication of mineral wealth, but in the outcropping has not so rich an appearance as the one which the Company are working at now - But it appears as far as the ledges can be traced that the run into one large ledge on the Western side of the Stream, though as the Hill at that side rises very rapidly, the Quartz lies at a considerable Depth from the surface - (Britannia Quartz Company, February 29, 1864, pp. 1-2).

They also included a map (see Figures 11 and 1), indicating the area they wished to be granted, and announced their intention to erect a mill or arrastra and to invest a considerable amount of money should the land be given to them. The Government's response of March 18 said that the land could not be granted to the company until they became associated under the Joint Stock Company Act and handed in a list of their shareholders. However, the land would be reserved for one week, time enough for the company to have completed this request.

By March 2, there were four or five companies at work on the stream, all having complete confidenoe in their ultimate success. Many companies had erected arrastras and continued to return good assays, and confirmed that Goldstream was 'to be a great centre point of attraction.' On March 9, an assay of ore from the Parmiter claim returned a twenty-two-ounce bar, valued at $17.37 in gold and $8.28 in silver. Upon this excellent assay, a share in the company was sold in San Francisco for one thousand dollars! The Colonist wrote: 'The purchaser of the share in question, we understand, purposes bringing up some more speculators

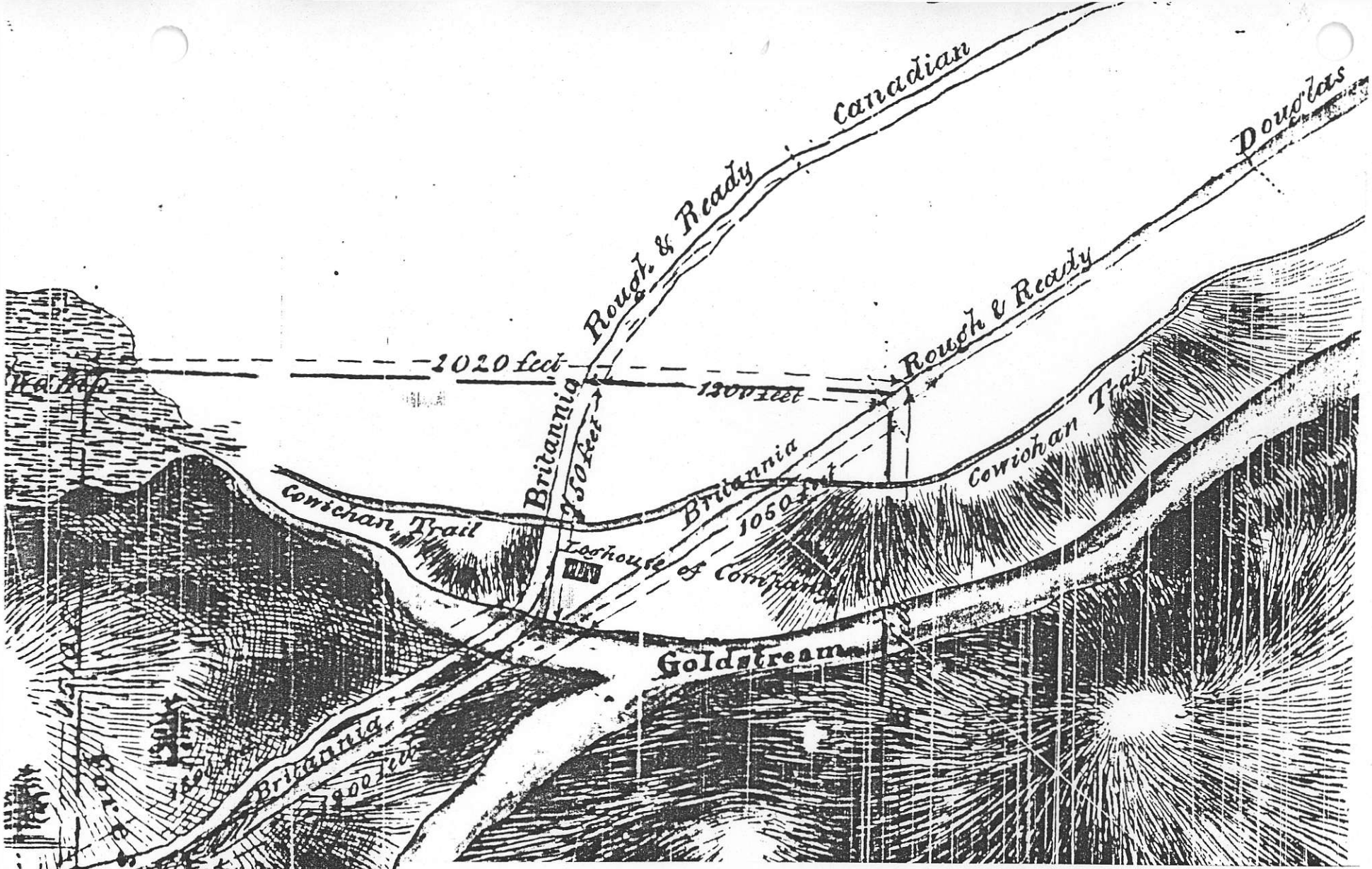

Figure 11. Map Drawn by the Britannia Company Showing the Quartz Leads at Goldstream. The names on the veins are those of other quartz mining companies, and the rectangle includes the area the company wished to be granted. Also included is the Cowichan Trail leading up Island, a swamp near what is today part of Goldstream town, and the fork of the Goldstream River. No scale is given (see also Figure 1). [from Britannia Company correspondence with the Colonial Government, dated February 29, 1864]

[from San Francisco] and the probability is that before long our quartz claims on Goldstream will be principally owned by San Francisco capitalists' (April 2, 1864, p. 3).

On March 15, a number of men in the city organised a quartz crushing company to erect a mill on Goldstream. The following day, the Britannia Company received a disappointing assay of approximately four ounces of silver and only traces of gold to the ton of ore, but prospecting continued.

The only placer company that remained by March of1864 was Smallbone's Kennedy Company, who had diverted the creek and fully expected to reap a harvest from the exposed streambed. It appeared that the Goldstream diggings were in slow decline, and only a motherlode could save them.

Only a few of the quartz miners had the same hopeful attitude as Smallbone's company. The Douglas Company had cut fifty feet into the hill, and were busy with their arrastra. The Britannia Company had four men at work, removing a large quantity of rock and repairing their arrastra. The Vancouver and Great Britain Companies lay idle, though there were tools on the site, and the Canada Company had a miner in possession of the claim, awaiting the decision of the shareholders. Despite the inactivity, on March 20 the Bank of British North America announced its intention to open a Government Assay Office in Victoria.

The beginning of April saw another small surge in activity at Goldstream. The Britannia Company was 'working with spirit,' crushing rock and receiving good indications. The new Gould and Curry commenced working, and the Great Britain was cutting a trail to their lead, while the Prince of Wales Company was getting out rock to send for assay. Stopped temporarily, the Douglas Company was repairing its arrastra, and the Parmiter Company had four men cutting into its lead, which was getting richer as it was opened. They were getting ready to send more samples to San Francisco for assay. The new Fell's Company had three men opening its lead, which appeared to be one of the best on the hill, while a road party of seven or eight men were making improvements on the road.

An astounding assay was reportedly returned to the Muir [Regina] claim on April 15, yielding gold at the rate of $10,000 to the ton! This caused an even greater rush to Goldstream, and on April 19 the Colonist reported that the Kennedy Company was planning to sink a shaft to reach

the bedrock, still in search of placer gold. The Gould and Curry also planned to sink a shaft, while the Regina Company's shaft, only a few yards deep, had struck a four-inch vein which widened to a foot and then ran into the slate. 'The rock looks well,' wrote the Colonist, 'but in very small quantity' (April 19, 1864, p. 3). The Great Britain Company had taken out 1200 to 1400 pounds of silver-bearing rock, which they planned to send to San Francisco, and the Douglas Company had struck a vein similar to that of the Parmiter Company in their tunnel twenty-six yards deep. Although shorthanded when some of their members returned to the Cariboo, the Britannia Company was still hard at work crushing rock, and the adjacent Lancashire Company had a man in possession of the claim. The Canada claim was shut up by this time, on the decision of the shareholders, while the Parmiter had three men blasting a vein six feet thick, which was widening and 'looking richer' as it descended. Another ton of ore was sent by this company to San Francisco for mineral testing.

Governor Kennedy Visits Goldstream

On April 7, there was some worry among company shareholders over the rumor of new mining laws for the Colony. They approached Governor A. E. Kennedy (see Appendix C) with their concerns, and he assured them that they would be consulted should there be any new proposals to establish such laws. The men also asked that more money be invested to improve the road to Goldstream, whereupon the Governor announced his intention to ride out to the locale that month, to see what had to be done there.

Governor Kennedy made this ride on April 21, spending a good part of the day at Goldstream. He studied the locality, commented on the condition of the road, and expressed himself pleased with the work done at the diggings. His Excellency investigated each claim, and noted activity at the Discovery, American, Regina, Prince of Wales, Great Britain, Douglas, Parmiter, Fell, Washoe and Britannia claims.

The Beginning of the End

April 27 was the first day of the end of Goldstream. On that day, a group of citizens and 'adventurers' met to discuss the further exploration of Vancouver Island. At this meeting it was decided that a party of men, who volunteered on the spot, should examine the land thoroughly and

return to the Governor and House of Assembly with a detailed report of their findings. The party was to be funded by the merchants as well as by the government, and headed by Dr. Robert Browne, with Peter Leech second-in-command. This meeting led to the formation of the Vancouver Island Exploring Expedition, which discovered gold at Leech River in July, tempting the miners away from Goldstream.

In May, the assays that were returned were low; some only returned minute traces of metal. The Parmiter Company received an assay of $3.50 gold to the ton, while the Cornucopia Company returned $7.50 silver to the ton with traces of gold. Spratt and Kriemler assayed ore samples from the Britannia claim, crushed by the arrastra constructed on their claim, at $8.50 gold to the ton. This was considered by the company shareholders to be very satisfactory, as the process of crushing by arrastra was somewhat rough. They had every reason to hope that the quality of the rock would improve as they opened the lead further. The Bank of British North America opened their assay office in Victoria that month, so that ore no longer had to be shipped to San Francisco or New Westminster for assay; crushing and testing could be done in the same city. The Goldstream wagon road was completed, and the American Company gave a contract to sink a shaft, 150 feet if necessary.

On June 15, the Pacific Company was assayed at five dollars gold, and six dollars silver to the ton, and in July two more companies found good samples, but it was too late; by the end of the month, about thirty-five companies had existed (see Appendix E), yet a minority were in active operation. The Kennedy was sinking a shaft, but was plagued by water, and the Britannia was working hard, finding 'gold-looking stuff' in their shaft of twenty feet. The Douglas Company, with an open cut fifty feet long and a tunnel twenty-seven feet deep, were trying to strike a vein visible on the side of the mountain. Blasting continued by the Parmiter Company, and the American Company persevered. By the 25th, the people of Victoria were very sceptical of the opportunities at Goldstream.

Most of the men at Goldstream were placer miners, and were fed up with the lack of easy money there, so when it was announced that payable quantities of placer gold were discovered at Leech River, 'every man and his dog' rushed off to prospect the diggings there. On July 27, an editorial in the Colonist urged the people to put their trust in the Leech River

findings which promised to return large gold samples, meanwhile inferring that the Goldstream diggings were worthless. Over the next year, interest was concentrated on the Leech River gold rush, and nothing further was reported about mining at Goldstream. The Goldstream Quartz Crushing Company was wound up in April 1865, and the money handed over to the shareholders.

More Gold Activity

A Good Try

About five years later, in 1869, activity at Goldstream resumed, and, again, lasted only a short time. In February, the Colonist reported that a prospecting party was investigating Goldstream. They had had a small accident on their way back to the city, when their buggy turned over, but no one had been seriously injured. The newspaper wrote:

> 'Previous to the accident the party prospected vigorously on the banks of Goldstream and secured a fine prospect, which was lost in the tumble. Some fine specimens of quartz from the old Parmeter [sic] claim -- which some of our citizens have reason to remember with sorrow -- were brought in, and will be sent to New Westminster for assay' (February 27, 1869, p. 3).

In 1870, work was still going on, and the Colonist proclaimed high hopes that the thorough investigation of the area would turn up rich specimens. June 1 saw the visit of a San Francisco businessman to the site staked by Messrs. Fell and Francis, and he spent the day examining the quartz ledges there. The Colonist reported: 'Immense seams of quartz abound in the vicinity, from most of which good-looking specimens were brought in for assay. Should the tests prove favorable no difficulty will be experienced in procuring capital from California for the opening of the ledges' (June 1, 1870, p. 3).

On July 27, the Colonist reported that L. Ensign from America had formed a strong company (possibly along with Fell and Francis) and was ready to begin operations in opening a quartz ledge on the old Parmiter claim. On August 9, he had begun blasting a tunnel into the hill, expecting to strike the quartz lode eighty or one hundred feet below the surface.

There were great expectations; when the lode was reached, the company would be enlarged and more money invested. Of the Ensign activities, the Colonist wrote: 'The present is the first practical attempt at testing the lodes on Goldstream that have been made -- the former workings have been confined to following the lode from the top, in place of running tunnels from the side of the hill and striking the deposits below' (August 9, 1870, p. 3). Two weeks later, it was reported that the company was working diligently, and expected to soon reach the quartz lead.

Goldstream mining was still in the news by September, when Fell and Francis returned to Victoria with the information that the ledges were getting richer as they descended, and, by November 1871, the tunnel on the Parmiter claim was one hundred feet deep. Soon after, however, Ensign and company ran out of money and the workings were again abandoned.

No Gold?!

Government Mining Engineers visited the area in 1877 and a report of their findings was passed on to the Geological Survey of Canada. The report described the rocks and mineral occurrences in much detail, and noted that the slaty rocks of the Leech River valley were highly auriferous. However, it did note that this wealth was not evenly distributed through the area, 'a fact shown not only by the local differences found in the east and west part of Leech River, but by the absence of rich deposits on the Goldstream, which seems in its relation to the slate belt to be as favorably situated as the Leech' (p. 99). The party also studied the workings at Ensign's mine, and after thoroughly examining the rock they condemned the ledges as worthless. The Colonist also reported the story of two very disappointed prospectors, who had preceded the party to the site and staked off 1500 feet on each side of the tunnel, anticipating a favorable report! (December 21, 1877).

The engineers thought they had proved beyond a shadow of a doubt that Goldstream contained no gold, but over the following years many more 'adventurers' prospected the area and even staked claims. There are no reports on payable ore having been struck, but that didn't stop anyone from believing they would be the first to do so.

No Giving Up

In 1881, the Colonist reported, the Parmiter claim was rediscovered by a pioneer miner from Ontario, John Dalby, but he soon abandoned it (September 2, 1896).

After Dalby's attempts to reap riches from Goldstream, more quartz ledges were found by workers of the Esquimalt and Nanaimo Railway line in 1885. They found four quartz lodes, one extending six feet in width, in a rock cutting twenty feet deep. Because the land was outside the railway belt, it was free to be prospected and staked by anyone, and it was reported that several men left the railway company so that they could prospect on adjacent hills. At least two claims were established; Joseph Hunter, Mr. Perry (both civil engineers employed by the railway), and Mr. Pinder were the pioneers. The first man staked the *'Triumph'* claim, while the latter two worked the *'Perry'* ledge. Both, by June 2, were obtaining specimens to send to San Francisco for assay, and the *'Perry'* company even sent samples for exhibition in Victoria.

The newspaper reported that there was plenty of capital available to finance operations, should the strike prove to be payable (June 2, 1885, p. 3). Apparently, however, it proved the opposite, and Goldstream was again abandoned.

Dalby and the Snider Brothers

More excitement occurred in 1896, while William Ralph was establishing his copper claim on Mount Skirt. The previous year, John Dalby returned with the Snider brothers, George and Albert, and staked out a number of claims, including the old Parmiter adit. Just over a mile to the west, Mr. A. C. Howe located his *'Howard'* mine.

J. A. Lawrence became interested in the activity occurring at Goldstream. He sent an expert to examine the property staked by Dalby, and completed 118 assays of ore from that site in the spring of 1896. Reportedly, the lowest assay was $5.60 in gold and 1 to 10 ounces of silver to the ton, while the highest was $45.60 in gold! (Colonist, September 2, 1896, p. 2). Lawrence bought out Dalby and the Snider brothers, and became the sole owner of a group of five claims. They became known as the Lawrence Group, and consisted of the *'Wonder,' 'Kate,' 'Hope,' 'Edith,'* and *'Stanley.'* In addition, he staked eleven more claims on

various other ledges, and was pleased with his results from all sixteen sites. In September of 1896, he had four men at work for him, including a mining engineer, and an 'expert' named Donaldson, employed to thoroughly examine the ledges. An assaying outfit was constructed on the site, to complete tests on the characteristics of the ore. The reddish-stained rock was 'free milling in character,' and if it remained so, Lawrence announced his intention to have a thirty-stamp mill in operation within six months (Colonist, September 2, 1896, p. 2). He had already taken out a hundred tons of ore, which sat at a dump site, and commenced on quarrying more.

On the *'Howard'* claim, Howe was working diligently, and, by the summer of 1896, had driven a tunnel eighty-five feet to strike the ledge and had begun crosscutting. The Colonist reported on September 2: '[The ledge's] extent may be understood when it is stated that it can be traced for four miles right to the railway' (p. 2). However, like the many that tried before them, these men failed to take paying rock out of Goldstream.

Focus Shifted to Copper

The Formation of the Ralph Mining Company

Throughout the 1880's and 90's, William Ralph (see Appendix C) had prospected and examined the area of Goldstream. He was a veteran of the Leech River gold rush, and had returned there many times to seek his fortune. He recorded numerous claims at the Land Office, and perhaps knew the area better than anyone else at the time. In 1896, he turned his attention to copper deposits on Mount Skirt. He staked a claim there, and proceeded to test the site for its copper values. Ralph completed the initial stages of investigation, but as it required a considerable amount of money, he began to look for investors.

The nearest tavern was at the Goldstream House, owned by James Phair (see Appendix C). Phair had been an important member of his community, helping to establish a school (by giving a section of his land for the building), and, by developing his hotel and the surrounding grounds, he brought prosperity to the locality through tourism. Ralph inevitably made his acquaintance, and put to him his plans for the mining of Mount

Skirt. Phair became the first investor, and was given the job of supervisor and spokesman of the company.

Ralph next approached his close friend Theodore Lubbe (see Appendix C). Lubbe was a wealthy fur dealer, and a man of strong character. He could resort to 'blood and thunder tactics' when provoked, noted Betty Forster (October 31, 1971, p. 3), and, like Ralph, was also a goldfever veteran.

The final partner was Andrew Tolmie (seeAppendix C), a wine merchant in Victoria, and possibly a business associate of Phair. Tolmie had acquired his fortune at the Cassiar gold diggings (near the B. C.-Yukon border) before he settled in the city. Together these four men formed the Ralph Mining Company, and on December 1, 1897, registered four claims on and around Mount Skirt: *'Ralph,' 'Phair,' 'Lubbe,' 'Tolmie,'* and *'Mount Skirt'* (see Figures 12 and 13). The very fact that these shrewd businessmen were willing to support such a venture indicated that there must have been very good prospects, and was proof enough to others of the wealth of the area.

The company began work on a quartz vein on *'Ralph,'* which was assayed at seventy or eighty dollars to the ton, and 33.3% copper pyrites.

Almost immediately there was a rush to neighboring Mount Finlayson. The Colonist reported on December 17:

> Every foot of ground in the vicinity of Goldstream has, within the last few weeks, been taken up by enthusiastic prospectors, stakes running like a low gear picket fence all along the base of the mountain - while even on Mount Finlayson, some distance away, numerous locations have been made. The present excitement is based almost entirely upon the results following the persistent work of Mr. James Phair and his three associates. They have steadily refrained from talking of their discoveries, and still are reticent, although Mr. Phair admits that his brightest dreams of the mineral wealth of his district appear on the eve of realization. "It will be time enough to speak," he says, "when we have proved the worth of our property and commence to develop it on a large scale."
> ... The fortune there is ... so advantageously situated, on a railway line and within twelve miles of Victoria ...
> Mr. Phair and his people last week received a handsome cash offer for their claim, but declined to sell. If it is good they will

reap the reward of their patient industry. If not, they alone will be the losers (p. 5).

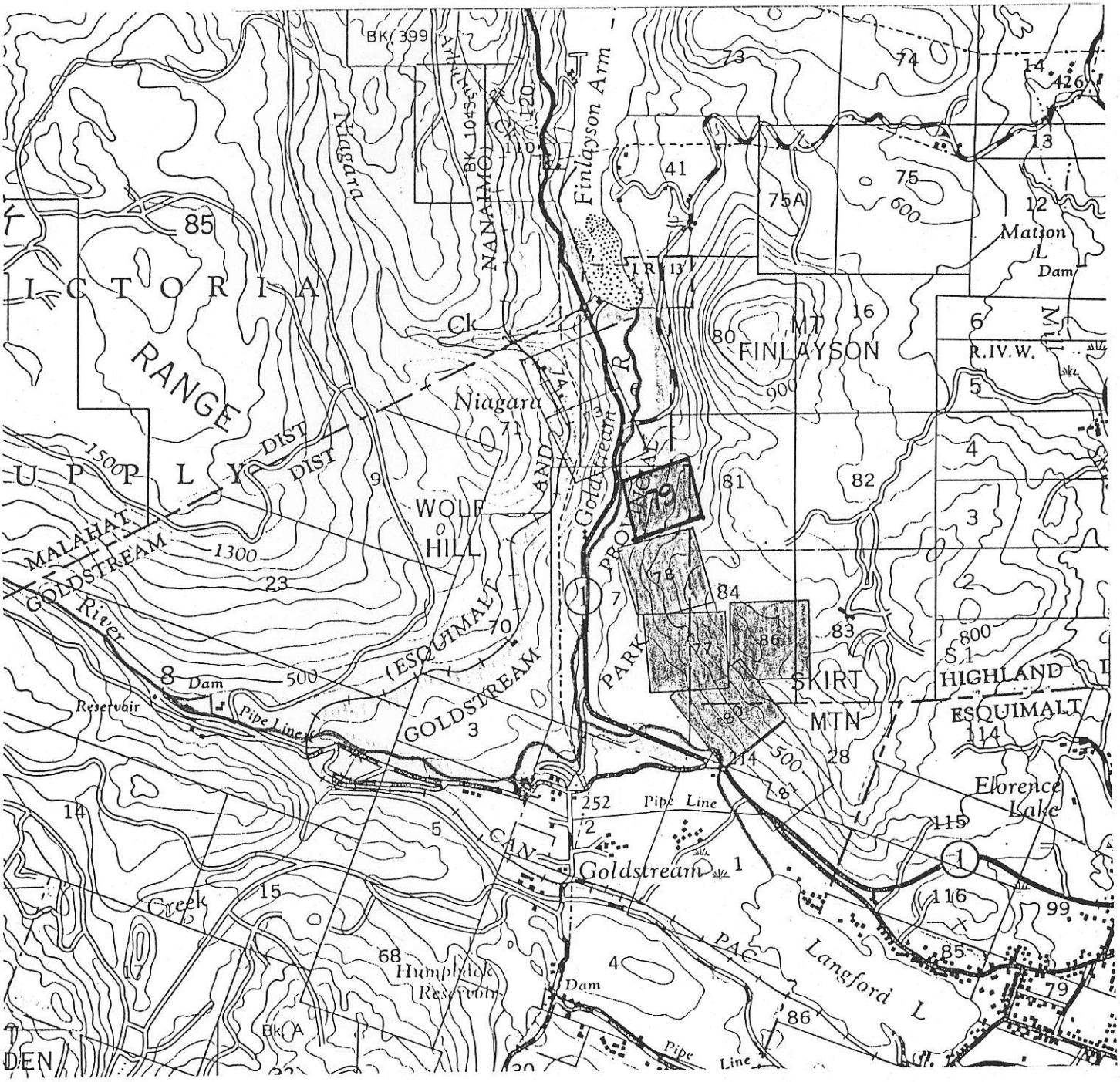

Figure 12. Map of Goldstream Showing the Claims of the Ralph Mining Company, circa 1900. [from a Ministry of Lands and Forests Map, sheet 92 B/5 East, and the Minister of Mines Annual Report for 1924]

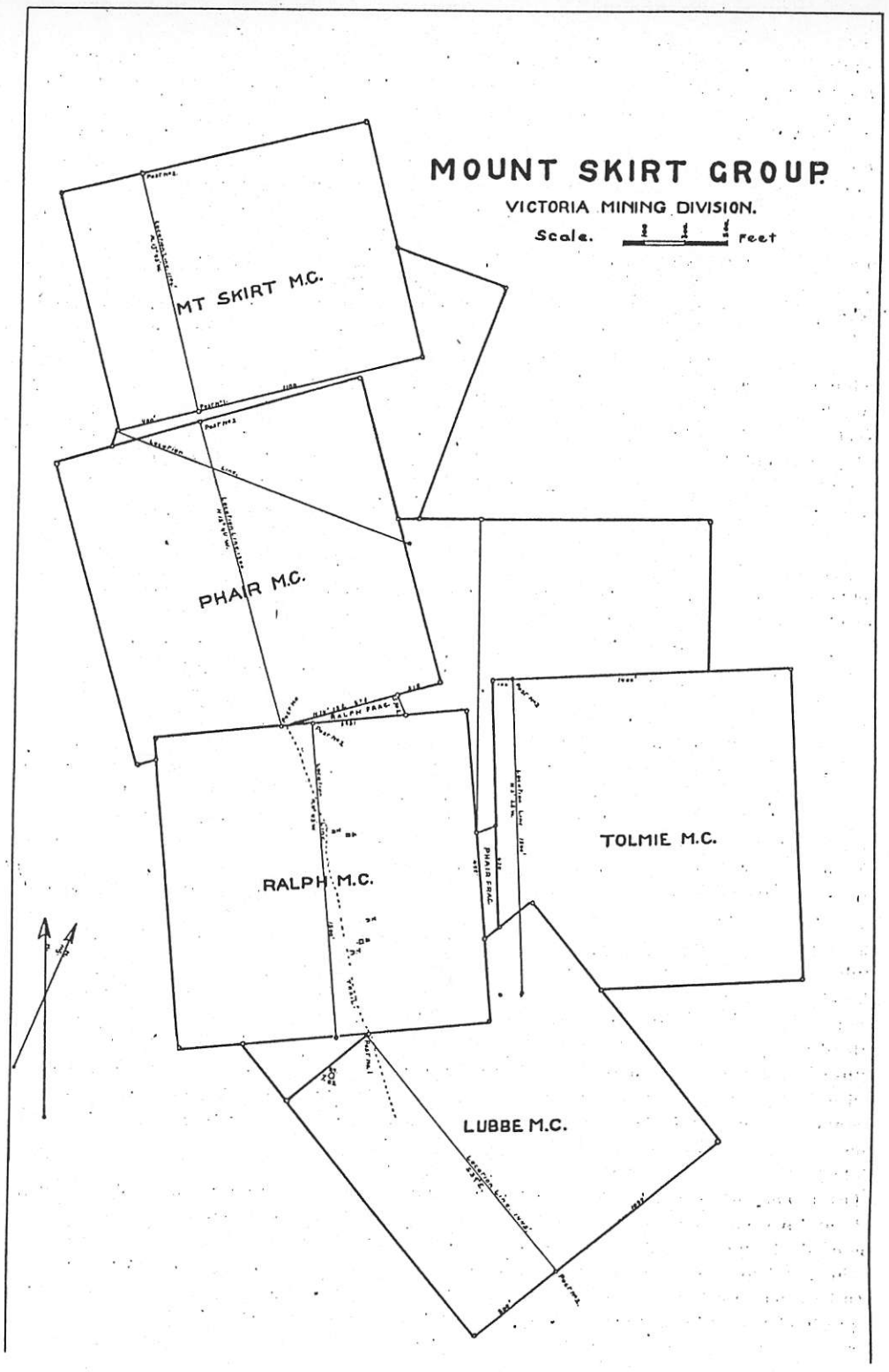

Figure 13. Diagram of the Claims of the Ralph Mining Company, circa 1900. [from the Annual Report of the Minister of Mines for 1924, p. B 254]

Reports on the progress made on the claims is contained in the Annual Reports of the Provincial Minister of Mines. By the end of 1897, it was recorded, a shaft of twenty-five feet existed, with a fifteen-foot crosscut at the bottom. This crosscut followed a chute of 'yellow copper'

ore for about fifteen feet, from six inches to three feet in width. The company was again assayed, this time at 25% copper, 1 dwt. gold, and five to eight ounces of silver.

No record of the Ralph Group (as the group of claims became known) is made in the 1898 edition, but in 1899, an assay of 18-25% copper, 1 ounce gold, and fifty cents in silver was returned. Over 1 300 feet of work had been done on the group, at a cost of $13 000. Two hundred tons of high grade ore had been removed from the main ledge, and five hundred tons of second grade ore from another. The company had a shaft of 160 feet, and had one hundred feet completed on a drift along the chute of ore. Six men were reported at work.

An article in the Colonist on October 14 showed that even at that time it was known that the ore contained a considerable amount of iron pyrites, or magnetite. A Mining Engineer also confirmed that great depths had to be obtained in order to reach the ore bodies.

More activity surrounded the Ralph Group in 1900, when the Pacific Steel Company acquired a bond on an adjacent property. They wantod to discover if the ore could be used for the steel industry, and so made a number of open cuts at various points. After considerable time and money had been spent examining the area, a member of the company admitted that although there was magnetite present, it was too contaminated with copper to be of any use to them. Thus, the bond was allowed to lapse.

Meanwhile, the Ralph Company were continuing work, although Ralph and Tolmie had sold out of the Company by this year. Phair and Lubbe, however, lost no hope and continued to work zealously, completing four hundred feet of drifts, shafts, and crosscuts, and having eleven men employed that year. The deepest work was 180 feet, and all showed payable ore. An aerial tramway had been built to transport the ore down the mountain to the road (see Figure 14). The mine workings were described by a visitor to the mine in 1902, young Billy Payne:

> In those days when you crossed the Goldstream Wagon Road, you came to flats ... Some Chinese who were working for Jim Phair, were living in cabins there. It was at that spot where the mine was bringing down ore by cable.
> We climbed to the mine entrance, and there to the left of the mouth, was a blacksmith shop - a sort of lean-to with a forge -

for sharpening drills and picks. The adit hole was six feet high and 30 inches wide. A narrow-gauge railway operated in the passageway which stretched for 30 feet until it came to a big cavern ... a sort of pocket. A deep shaft fell from the floor of the cavern.

From the rim at the top, Charlie Woodruff [a miner employed by Phair] and I looked down the shaft which dropped 25 to 30 feet. As I peered into that dark column, I could see two flicks of light from the miners' caps. We shivered. It was cold in there, and we were glad to get back to the entrance where the little cars were dumping ore.

The ore was being put into sacks, and then let down by means of a heavy cable where it ended under two big cedar trees. There it was loaded onto the mules. Some of these mules could take 400-500 pounds of ore. The mules packed the ore to the wagons which in due course carried the stuff to a smelter (Forster, October 31, 1971, pp. 3,5).

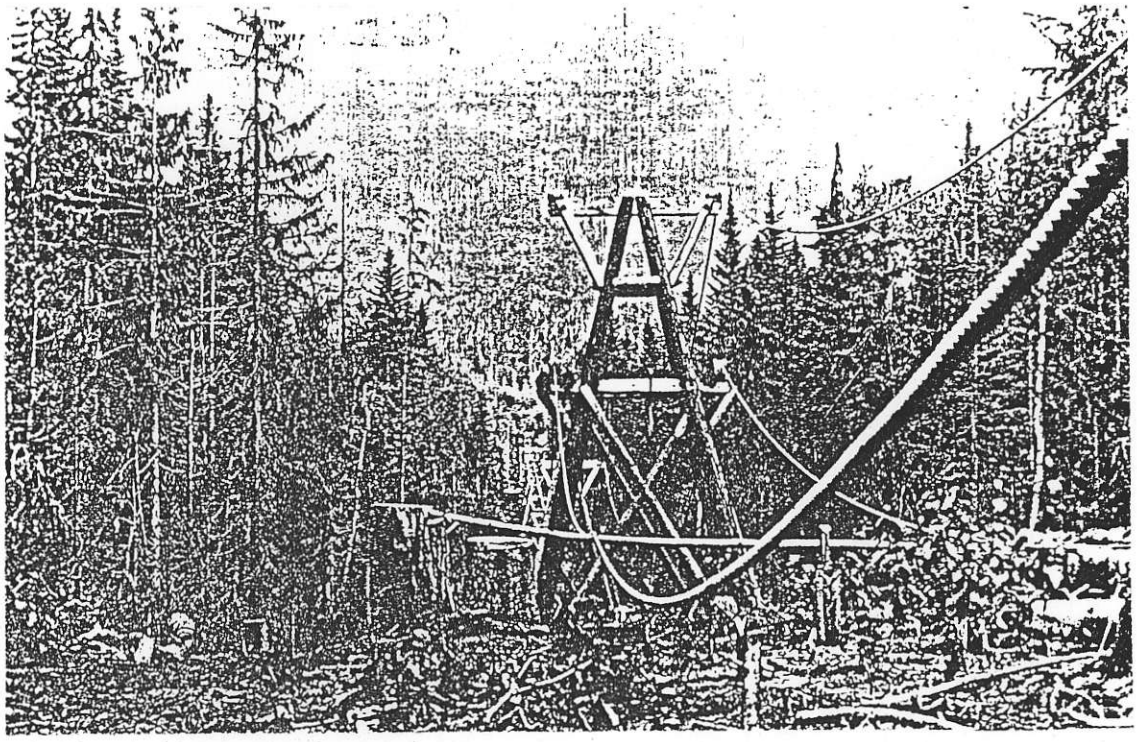

Figure 14. Photo of an Aerial Tramway. The aerial tram used at Mount Skirt may have been similar to this one, built to carry ore from the Roche De Boule Mine to Carnaby, around 1914. [from the British Columbia Provincial Archives, #88738]

The company was shipping ore to a smelter in Tacoma, as were many other copper mining organisations on the Island, with very satisfactory returns.

Years of Toil and Hope, and the End Result

In 1902, work began slowing down. It became apparent to the members of the Ralph Mining Company that copper was not present in Mount Skirt in payable quantities. The Tacoma Smelter could not use their ore, as it was too contaminated with magnetite, and so work ended in 1903. By this time, the company had completed numerous shafts, a thirty-seven-foot adit which reached a forty-foot crosscut, finished extensive drifting into the hill on the *'Ralph'* claim, and made shallow shafts and adits on the *'Phair'* site.

A Revival by Moody

The year 1924 saw renewed interest in Mount Skirt, by S. P. Moody, Jr. (see Appendix C), and a number of other local capitalists. Moody was the only son of the Burrard Inlet timber magnate, after whom the town of Moodyville was named. Moody's syndicate secured a lease and bond on the old Ralph Group, with the intention of sampling the ore to find if the body was worthy of further development. This revival was credited to the improved condition of the metal industries of North America. An initial assay valued the Goldstream ore at fourteen or fifteen per cent, and since some companies were making money with only five per cent grade, it was felt that this mine of three times the value could be operated profitably as well (Times, November 17, 1924).

The syndicate announced their intention to ship ore to the Tacoma Smelter. Despite the failure of the Ralph Mining Company, the new association felt they could be successful in their endeavors. The Times wrote:

> Work had to be abandoned because in those days there were no ready electrical facilities for handling operations in such a shaft, which filled with water. Now electrical pumps can keep such a shaft clear of water. It is proposed to use the new lower tunnel for draining the mine and thus making working conditions good, as well as for shipping (November 17, 1924, p. 9).

Moody's syndicate cleared away the old workings completed by the Ralph Mining Company, in preparation for sampling. Five samples were obtained for assay, the highest returning twenty-two per cent copper, and one returning no oopper traces. All but one contained traces of gold and silver. Moody continued working there through 1925, but allowed the bond to lapse after that.

Later Activities at Goldstream

Placer Mining in 1939

Following the turn of the century, the land around Goldstream was gradually acquired by the City of Victoria as Watershed Reserve Land. In November 1939, work was again reported at Goldstream, this time for placer gold on a stream in the Park. Permission was given to two miners by the City Council of Victoria, who assured the public that the stream was not a part of the city's watershed property.

A Surprise for Goldstream

By 1951, the city was willing to transfer the land to the Provincial government, to be made into a Provincial Park. However, there was a new surprise in store for Goldstream the following year. While negotiations were taking place to transfer the park area from the city to the province, a man approached the mayor of Victoria and earnestly implored him not to give up the land. The unidentified man claimed that Goldstream contained oil! As proof he presented an old geological survey map of North America which showed possible oil fields, and the areas highlighted were Texas, California, and southern Vancouver Island! The mayor was hesitant, but, because there is no record of oil exploration in the Park, he apparently dismissed the notion. Nevertheless, negotiations with the Provincial Government broke down, and the land was not transferred in 1952. Many people suspected that the rumors of oil were intended to push the negotiations between the two governments, possibly to force the Province to play its hand.

Goldstream Provincial Park

Talks began again in 1956, but further difficulties arose. Just as a deal was worked out between the two governments, W. M. Brewster offered for the land a total of $250 000 on a long term payment plan. She represented a mining company who was interested in developing the copper vein which ran into the area of the proposed park. The municipal government was in a quandary; if they backed out on the nearly-signed deal with the Provincial government, how would it affect future relations? and if the mineral wealth of Goldstream turned out to be false, how much would they see of the $250 000? The City Council acted accordingly, and established a committee to look into the situation, in conjunction with the Provincial mines department. Apparently they thought little of the mineralisation at Goldstream, or considered the financial risk too great, and the area became a Provincial Park in 1958.

Numerous trails have been constructed throughout the park since then (see Figure 15). The Gold Mine Trail, on the west side of Goldstream River, leads right past a gold mine tunnel and shaft. On the other side of the river, the Prospectors' Trail passes by some of the copper mining indications, especially by the viewpoint on the face of Mount Skirt. Niagara Falls are another must-see, heralded by the papers of last century as the most beautiful falls on the Island.

Salmond's "Mystery Mine"

In 1966, while helping to build some of these trails, Hugh Salmond of Victoria discovered a tunnel on the west side of Goldstream River. He inquired at the Ministry of Energy Mines about it, and it came to the attention of Dr. Peter Eastwood (see Appendix F). Because the records from the last century and the early 1900's are incomplete and in some cases non-existent, it was difficult and time-consuming for Eastwood to research the mine. From the limited information he could obtain, Eastwood deduced that the mine was part of the old *'Bentley'* claim, worked just before the turn of the century. This, however, cannot be, as the *'Bentley'* was situated on or near Mount Skirt, across the river from the unknown tunnel, and was presumably a copper claim. The real identity of the "Mystery Mine" and its adjacent shaft is still unknown.

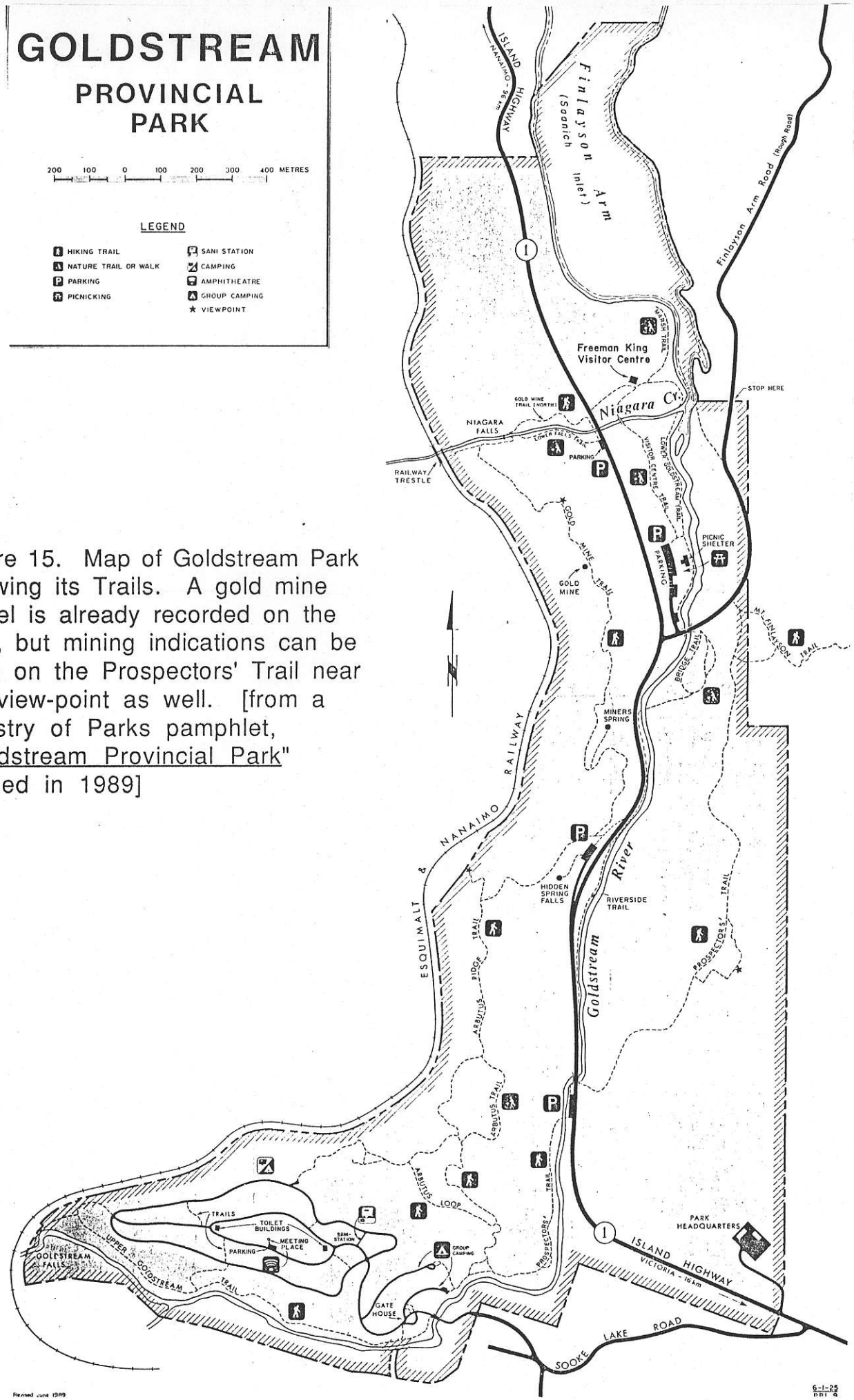

Figure 15. Map of Goldstream Park Showing its Trails. A gold mine tunnel is already recorded on the map, but mining indications can be seen on the Prospectors' Trail near the view-point as well. [from a Ministry of Parks pamphlet, "Goldstream Provincial Park" revised in 1989]

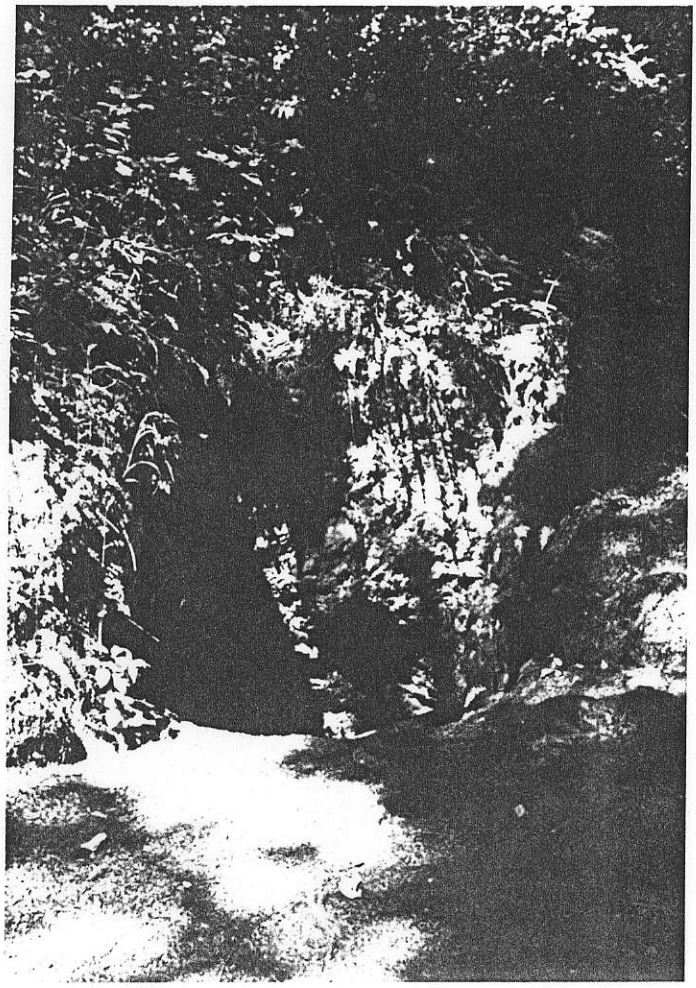

Figure 16. Shaft Corresponding to the Gold Mine Tunnel of Figure 17. Flooded and covered by a grate, this shaft is situated directly uphill from the tunnel. [author's photograph]

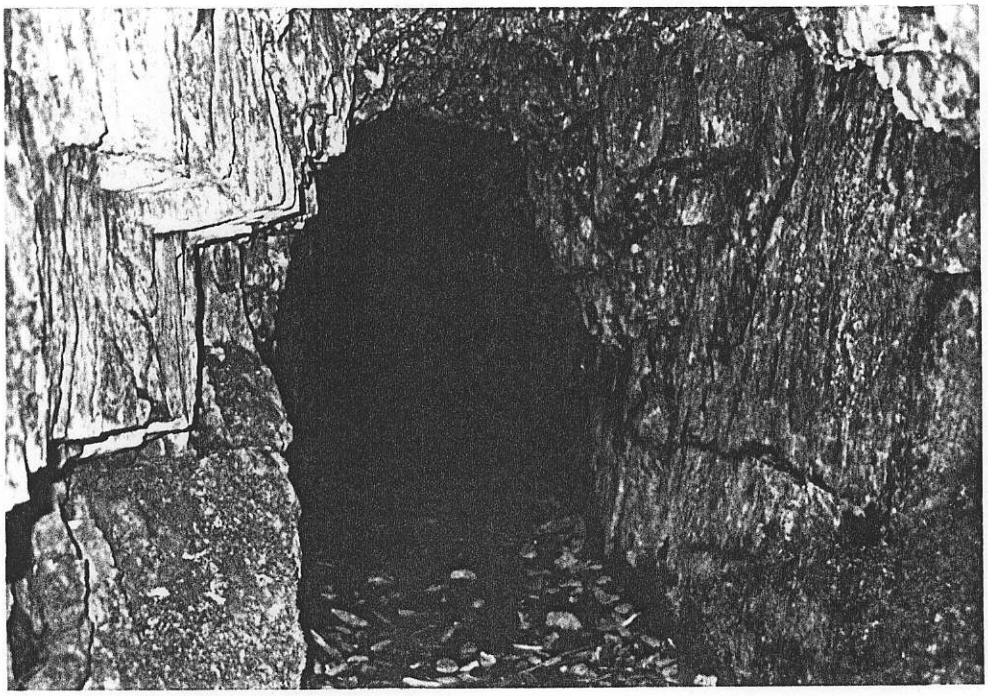

Figure 17. Gold Mine Tunnel In Goldstream Provincial Park [author's photograph]

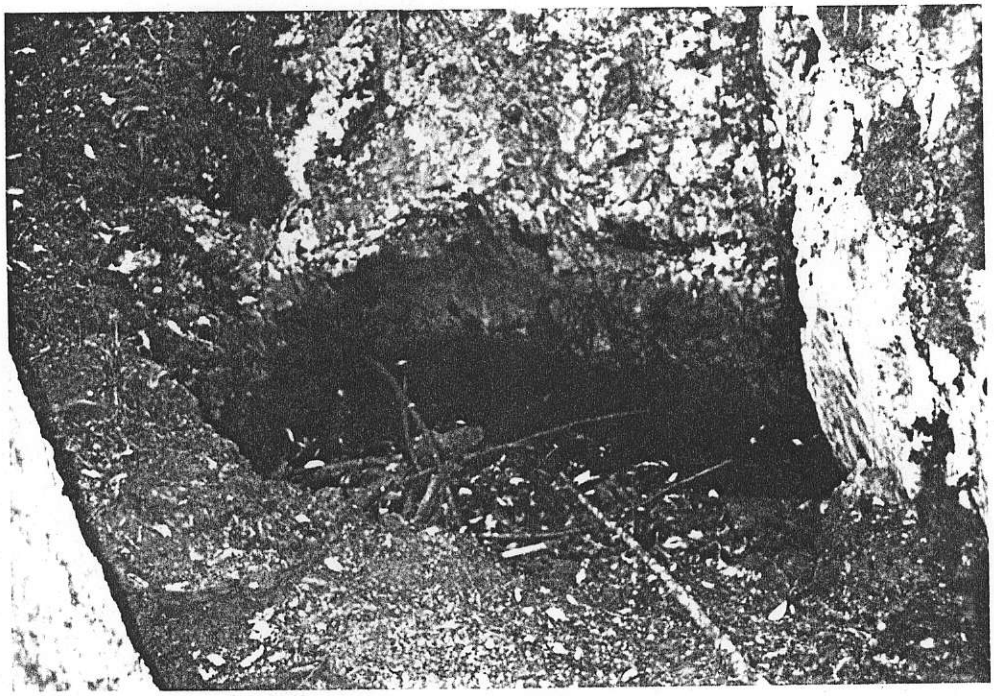

Figure 18. Copper Mining Indication on Mount Skirt. This small test pit was probably used to locate the mineral vein. [author's photograph]

A gold mine tunnel and its associated shaft can be seen on the Gold Mine Trail on the west side of the river (see Figures 16 and 17), while copper mining indications can be seen on the Prospectors' Trail near its viewpoint on Mount Skirt (see Figure 18).

Concluding Statements

The occurrence of auriferous quartz veins in the Leech River schists led to one of the Island's first gold rushes at Goldstream. Gold attracted thousands of miners from around the world - from California and England to the Sandwich Islands (Hawaii) and Australia. While they stopped over in Victoria in the winter months, they prospected the Island and opened up many new regions for settlement. All of the new residents looked to Victoria as a centre of culture, supplies and services, as did the miners of the mainland gold fields; Victoria was at the time the largest city north of San Francisco.

When the gold fever died away, Victoria remained a focal point for the Island's residents. The occasional spurts of activity at Goldstream, and the larger copper mining operations there, were all financed in some way by capital from Victoria. Some even received monies from San Francisco and New Westminster, which was eventually spent in Victoria's supply shops, taverns, and hotels. All of this speculation and investment in the mineral wealth of Goldstream promoted the economy of the city.

Although not the primary cause of the growth of Victoria, the geology of Goldstream nevertheless was a factor.

Appendix A

The Effects of the Mainland Gold Rushes on the Growth of Victoria

Fort Victoria was erected as a Hudson Bay Company post in 1843, in order to establish a British prescence in the fur-rich area. Its strategic location at the entrance of the Juan de Fuca Strait was important in checking the northern spread of the Americans, who were already occupying Oregon. In 1849, Vancouver Island became a Crown Colony, the same year that the California gold rush began.

Starting in 1858, news of gold strikes in the interior of the Colony of British Columbia (today mainland British Columbia) lured thousands to Victoria.

> The [ship] *Commodore* alone brought 450 men, only 60 of whom were British. Instantly the muddy streets and small shops of the townsite were crowded with men in red flannel shirts, carrying packsacks and bowie knives, who camped in tents around the outskirts of the little town ...
>
> Eventually, 25,000 miners had passed through, all seeking supplies and information before starting their trek into the wilderness (the permanent population of Victoria in 1859 was 600) ...
>
> Victoria, even with its "exorbitant prices " at the HBC [Hudson Bay Company] store, was soon discovered to be the only spot with any reliable information and decent provisioning. The store in the fort was besieged day and night by these "outscourings of the world," all of whom were in such a hurry that a half-day wait for supplies was intolerable. Jailbirds, thieves, desperados, and "the halt, the lame, the blind and the mad," all "let loose by the Government of California for the benefit of mankind," flocked to Victoria. San Francisco merchants moved their stocks completely to Victoria, and advertised their previous business addresses to jog the memories of former customers ...
>
> The excitement peaked in July 1858, when, during a ten day period, four San Francisco steamers landed 5,500 miners at Esquimalt. The price of lots along the Victoria and Esquimalt harbors shot from as little as $5 up to $500, $1,000 and more (Kluckner, 1986, pp. 20-1).

Ships flocked into Victoria's harbor non-stop, and a shanty town of over two hundred was built in a period of six weeks. The city became a

great shipping centre due to its commercial facilities and the easy navigation of its waters (Gosnell, 1906). In the winter when conditions made prospecting in the interior impossible,

> volatile Californians preferred to return to San Francisco and to push on from there in the spring to the new Colorado mining-fields. A more adventuresome, and, in a sense, a more stable group remained behind to pass the winter in dingy hotels and lodging-houses in Victoria ... The capital of Vancouver Island, these miners found, was no longer the crowded tent-city of the spring. A few brick and stone buildings on the waterfront gave it an air of prosperity (Ormsby, 1958, p. 166).

Finally, in 1862, Victoria had acquired the wealth and population (although mainly Californian) to be incorporated as a city. It continued to grow, to become the capital of the province of British Columbia as well as a great cultural and tertiary service centre.

Appendix B

Timeline of Events

1852 --
* J. D. Pemberton, surveyor, reports finding gold showings on several streams near Fort Victoria, but little excitement results

1858 --
* Peter J. Leech, formerly of the Royal Engineers, surveys the area and finds traces of gold in the stream
* names the area 'Gold Creek'
* miners rush out to 'Gold Creek', and the vicinity is widely prospected
* area is abandoned due to the high water in the stream

1859 --
* gold is discovered again at Goldstream, and wild rumors circulate around the city
* some doubt as to where, or even if, the diggings are located

1862 --
* Victoria is incorporated as a city

1863 --
* April
  * two cattlemen report seeing men digging near 'Golden River'
* October
  * party of four miners is sent out by Governor James Douglas to prospect the colony for its mineral wealth
  * October 17 - they report back the discovery of payable quantities of gold at Goldstream
    * miners rush to the spot
    * locality is dubbed 'the Douglas Diggings'
  * while prospecting for placer gold, Robert Miller discovers a gold-shot quartz vein, dubbed the 'Douglas quartz lead'
    * his friend George Clarke stakes the first quartz claim on this lead, and forms the Douglas Company
  * October 21 - Clarke presents specimens from his claim to the Governor, who is highly impressed with their appearance
  * companies working hard, and many reporting excellent prospects
    * others investigating upstream
    * at least 7 quartz companies and 6 placer companies at work

* November
  * high assays return
  * some companies held up by water, but work continues
* December
  * weather holds up activity a for the first half of the month
  * Parmiter assayed at $630 to the ton, and a great surge in activity results

1864 --
* January
  * more high assays return
  * January 4 - Spratt and Kriemler's Quartz Crushing Mill is completed, and assaying begins
  * Governor Douglas retires and is replaced by Governor Arthur E. Kennedy
  * assay values begin to fall
  * increase in activity when Britannia assayed at $1 557.46 to the ton
* March
  * only four or five companies in active operation
  * Parmiter Company sells a share in San Francisco for one thousand dollars
  * Bank of British North America announces plans to open Government Assay Office in Victoria
* April
  * surge of activity when Regina assayed at $10 000 to the ton
  * April 21 - Governor Kennedy visits the diggings, and is happy with the development there
* May
  * assays becoming lower, some only returning traces of metal found
  * Bank of British North America opens its Assay Office
* June
  * twenty or thirty companies exist, but only a few at work
* July
  * gold is discovered at Leech River, and Goldstream is abandoned

1869 --
* February
  * prospecting party investigate the Parmiter claim, continuing work into the next year

1870 --
* an American, L. Ensign, bonds the old Parmiter claim

* digs a tunnel one hundred feet into the quartz ledge
* samples taken

1871 --
* last report of activity by Ensign's company

1877 --
* Government Mining Engineers investigate the area and describe its geology in a report to the Geological Survey of Canada
  * they condemn the Parmiter ledge as worthless
  * Noted that Goldstream contained no gold, while surrounding regions were fairly rich

1881 --
* Parmiter claim rediscovered by John Dalby, but soon abandoned

1885 --
* four quartz lodes discovered by workers on the Esquimalt and Nanaimo Railway line
  * the *'Triumph'* and the *'Perry'* are staked, but soon after abandoned

1895 --
* John Dalby returns with George and Albert Snyder to the Parmiter claim
  * they stake out five more claims
* A. C. Howe stakes the *'Howard'* nearby

1896 --
* J. A. Lawrence examines Dalby's claims, and buys out all of the holders
  * he also stakes out eleven more claims
* Howe diligently at work
* August
  * William Ralph files a claim on the west side of Mount Skirt, to search for copper
* December 1
  * the Ralph Mining Company is formed
    * William Ralph
    * James Phair
    * Theodore Lubbe
    * Andrew Tolmie
  * Ralph transfers a quarter of his shares to each member
  * claims: *'Ralph,' 'Lubbe,' 'Phair,' 'Tolmie,'* and *'Mt. Skirt'*

* work done on *'Ralph'*
* almost immediately, a rush to neighboring Mount Finlayson results
* Company rejects a 'handsome cash offer' for their claim

1897 --
* Ralph Company records workings in Annual Report of the Minister of Mines
* shaft of twenty-five feet, with a crosscut
* assay results twenty-five per cent copper value

1899 --
* six men at work on *'Ralph'*
* roads built, tunnels run, and a contract given to sink a shaft
* the Ralph Mining Co. invest $13 000 in their claims

1900 --
* Ralph and Tolmie sell out their shares to Phair and Lubbe
* on *'Ralph'* claim, payable ore is found in all workings
  * eleven men employed, including a number of Chinese miners and Charlie Woodruff
  * aerial tramway built to the Goldstream road for the movement of ore
  * shipments being made to a Tacoma Smelter, to continue through the winter
* bond taken out on adjacent property by the Pacific Steel Company
  * interested in the possibility of taking out iron ore for their use
  * after studying the ground (at considerable expense) the ore is found to be useless to them and the bond allowed to lapse
* OUTPUT OF MOUNT SKIRT:
  * 56 tonnes of ore mined
    6 007 kilograms copper
    11 010 grams silver
    63 grams gold

1902 --
* work begins slowing down on the Ralph Company claim
* the copper body is too contaminated by strong showings of magnetite to be used by the Tacoma Smelter

1903 --
* mining ends at the Ralph Group

1924 --
* local syndicate headed by Sewell Prescott Moody, Jr., secures a lease and bond of *'Ralph'*
* they intend to sample the minerals and ship ore to the Tacoma Smelter
* company begins to clear away old workings and pump out the flooded shafts

1925 --
* samples are taken and assayed:
  trace gold
  9.5 ounces to the ton of silver
  22 % copper

1926 --
* Moody's syndicate stops working and allows the bond to lapse
  * they also found the copper too contaminated with iron

1939 --
* two miners are given permission by the Victoria City Council to carry out placer mining on a creek in the Goldstream area

1952 --
* negotiations te transfer the Goldstream Park to the Provincial Government begin
* an unidentified citizen claims to the mayor that Goldstream contains oil, and negotiations break down between the two governments

1956 --
* talks between the two governments begin again
  * local mining interest offers $250 000 for mineral rights in the park
    * mining company wants to prospect the copper veins, and the city organises a committee to investigate the mineralisation of the area
  * negotiations threatened by this disturbance
    * the Provincial Government wanted no strings attached to the deal
  * negotiations for the transfer continue

1958 --
* Goldstream Provincial Park is established

1966 --
* 'Mystery Mine' is found by Hugh Salmond in the Goldstream Park

* investigated by Dr. Peter Eastwood, who deduces that it is the *'Bentley,'* excavated circa. 1900

Appendix C

Biographies of Prominent Characters

George Clarke

George Clarke was a companion of Robert Miller in the prospecting party sent out by Governor James Douglas. When Miller discovered auriferous quartz veins at Goldstream in October of 1863, Clarke was the first to stake a claim on them. He formed the Douglas Company, which worked diligently until the end of mining activity at the river in August 1864.

John Dalby

Born in 1850 in Ontario, and settling in Victoria in 1881, John Dalby associated himself with George and Albert Snider in 1896 to mine the old Parmiter claim. Later that year, they all sold out their shares, and Dalby was next seen at the Klondike Gold Rush, after the turn of the century.

Sir James Douglas

Sir James Douglas became the second governor of the Colony of Vancouver Island in 1852. Although the Fraser and Cariboo gold rushes brought prosperity to the colony, Douglas noted economic decline. As a solution, he sent out a party of prospectors (including Robert Miller and George Clarke), in the hope of developing the mineral resources of the Island. In 1863, these men reported back the existence of placer gold in the vicinity of Victoria, at a place called Goldstream. This began a small gold rush to the area, and provided a proper send off for the Governor on his retirement that same year.

A. E. Kennedy

Arthur Edward Kennedy succeeded Sir James Douglas as the third Governor of the Colony of Vancouver Island in 1864. Unemployment and depression had hit the colony, and Kennedy was known as a tough administrator. He cut government spending, ordered men to work for the dole, taxed imports, and organised a search for minerals on the Island. He fired many of the officials who had bought their positions or attained them through their association with Governor Douglas; Kennedy once said, 'There are I fear but two classes here -- those who are convicts and those who ought to be convicts.'

He had twenty years of experience, having served as Governor for Gambia, Sierra Leone and West Australia before moving to Vancouver Island, and following his term there he became Governor at Hong Kong, Queensland and British West Africa.

John Kriemler

John Kriemler was a community involved citizen of Victoria, and a member of the volunteer fire department, many times honored. He partnered with his friend Joseph Spratt in a quartz mill company in 1863, to crush the quartz ore coming from the Goldstream mines. In 1870 he dissolved the partnership, to establish a coal and wood yard in the city.

Peter J. Leech

Finding traces of gold in a stream bed not far from Victoria, Peter John Leech named it 'Gold Creek.' He was at the time a member of the Royal Engineers, prospecting the area for agricultural lands, mineral resources and general knowledge of the area. His findings in 1858 led to some excitement among the idle miners in Victoria, and a small rush occurred. The stampede did not last long, however, as high water made placer mining difficult. The area was abandoned for a while, but since that time, occasional surges of mining activity have taken place.

Leech joined the Vancouver Island Exploring Expedition established by Governor A. E. Kennedy in 1864 and went on to explore the valleys northeast of Victoria. He discovered more placer gold in what is now Leech River, beginning a stampede to the valley; the mining community of Leechtown was named in his honor.

Theodore Lubbe

Theodore Lubbe was a dealer of raw furs, secretary of the Esquimalt Water Works, and a close friend of William Ralph. He was a man of strong character and will, quite capable of resorting to "blood and thunder" tactics when accused unjustly, as by the press of the time who questioned his position at the Water Works. He became one of the four founding members of the Ralph Mining Company in 1896, working on the west face of Mount Skirt in search of copper. In 1900, Lubbe and James Phair, who was also a founding member, acquired the land for themselves and attempted further exploration. Unsuccessful, mining ended at the Ralph Group of claims in 1903.

James "Doc" McCandlish

"Doc" McCandlish was born in 1823 in England. Unlike many "Docs" of the mining camps who got their name by pulling teeth and treating horses, McCandlish was an actual surgeon, having studied and practised for a short time in England. In 1854, he left with his cousin for California, where he was struck and blinded in one eye by a piece of quartz. Soon after, he settled in Victoria, and turned to commerce, 'yet he could not resist the temptation to head into the hills in search of "color" ' (Paterson, October 17, 1975).

Robert Miller

Robert Miller was a member of the prospecting party sent out by Governor James Douglas in October 1863, and the first man to discover lode gold at Geldstream in the form of gold-shot quartz veins; it was reported that he was able to follow the outcroppings for a mile! However, he allowed his friend George Clarke to become the pioneer lode staker in the area. Miller worked diligently on his own claim, formed the Washoe Company, and became known as the "Robinson Crusoe of the Washoe."

S. P. Moody, Jr.

Sewell Prescott Moody, Jr., was the only son of the Burrard Inlet timber magnate. As his father died while he was still a baby, the business was sold and Moody Jr. was unable to inherit. He acquired the Ralph Group of claims in 1924, intending to ship ore to the Tacoma Smelter. After clearing the sites and taking samples, Moody soon discovered that no money could be made there, and the claims were abandoned by 1926.

Thomas Parmiter

Born in England, Thomas Parmiter intended on moving to Australia to prospect for gold, but after stopping over in San Francisoo, his attention was drawn to the gold fields of North America. He settled in Victoria in 1862, and took part in the gold fever at Goldstream the following year, but eventually moved his family to Ladner.

His claim was "rediscovered" many times following the 1863 rush, but payable ore was never found.

J. D. Pemberton

Joseph Despard Pemberton was a civil engineer, working for the Hudson Bay Company, as well as being a Colonial Surveyor. In 1852, he reported finding gold showings in a number of streams around Fort Victoria, but no excitement arose over the news. He predicted that Vancouver Island would become an important mineral source.

James Phair

Originally from Ireland, James Phair travelled from San Francisco to the Nicola Valley of British Columbia. In 1885, he moved his family to Vancouver Island, where he had bought an inn, the Goldstream House, from his father-in-law. Phair became an important man in his community: he cleared acres of land for a ranch, helped establish a school, brought tourism to Goldstream through live concerts and other weekend activities, and was involved in an important mining venture in the area. In 1896 he became a partner in the Ralph Mining Company, Begun by his friend William Ralph, and including Theodore Lubbe and Andrew Tolmie. Phair became the

manager and overseer of the mine, as well as the company's spokesman. In 1900, Phair and Lubbe bought out the other two shareholders, and attempted to make the mines pay. However, finding the copper ore contaminated with iron, mining ended in 1903. Phair later sold his hotel and moved to Vancouver.

William Ralph

William Ralph travelled to Vancouver Island in 1862. A veteran of the Leech River gold rush of 1864, Ralph devoted much of his life to prospecting the lower Island foothills. He was at the head of many notable surveying parties exploring the Island, and he helped in laying out the original Esquimalt and Nanaimo Railway line; at one time he worked under J. D. Pemberton. Articles on his prospecting trips could be read occasionally in the Victoria Colonist, including one in 1881, which reported that he and a party of four had set off with supplies for the purpose of further prospecting in the Goldstream area. The article also stated that two men had been left at the diggings, and when Ralph returned, he expected that 'work in the new shaft [would] be vigorously prosecuted.'

In 1896, Ralph filed a claim for a site on the west side of Mount Skirt, but required investors to cover the considerable costs of mining there. On December first of that year, he entered partnership with three other men: James Phair, owner of the nearby Goldstream Hotel; Theodore Lubbe, raw fur merchant and friend of Ralph; and Andrew Tolmie, wine merchant and veteran of the Cassiar gold diggings. This almost immediately caused a rush to neighboring Mount Finlayson, and an offer to the newly formed Ralph Mining Company to purchase their claims. The Ralph Company continued working on their site, and Ralph was involved until 1900, when he and Tolmie sold their shares in the company to Phair and Lubbe.

Ralph died in May 1905, with the firm belief that large quantities of gold could be found at Goldstream, although none had so far been discovered.

George and Albert Snider

The Snider brothers were born and raised in Saanich, and in 1896 they joined with John Dalby in mining the old Parmiter claim at Goldstream. Later the same year, they sold their shares in the company, and in 1905 they moved to Vancouver and became prominent building contractors.

Joseph Spratt

Joseph Spratt had been a part of the California gold rush of 1849, and thus had some mining experience. He journeyed to Victoria in 1858, and entered into an iron works company. In 1863, he left this employment

to join in a partnership with his friend John Kriemler, to construct a quartz mill in Victoria. This mill was to service the lode mining companies in Goldstream, crushing their ore and providing assays. It was completed in January of 1864, built on the site where the Pemberton Building is today (on Government and Broughton Streets). The partnership ended in 1870 when Kriemler moved on, and Spratt entered the shipping business in 1882.

Andrew Tolmie

Born in Scotland, Andrew Tolmie travelled to British Columbia in 1873 from Ontario, attracted by the gold fields at Cassiar (near the Yukon border). After amassing a small fortune at Cassiar, Tolmie settled in Victoria in 1891 and acquired a wine merchants' establishment, located on Yates Street near Government Street. Possibly because of his business contact with James Phair, Tolmie became the fourth partner in the Ralph Mining Company in 1896. In 1900, Tolmie and William Ralph sold out their shares in the company to Phair and Theodore Lubbe.

Appendix D

Methods of Mining
Adapted From Garnet Basque,
'History of the Canadian West'

Several mining methods were used at Goldstream, due to the different types of mineral deposits there. The first gold discovered was in placer deposits (in the gravels of the stream), but the miners soon came to focus on the gold and copper mineralised in quartz veins.

When prospecting the placer gold deposits, the traditional gold pan was used (see Figure 16). The gravel was tested in this way to find the occurrence of gold in the stream bed. The output was expressed in the number of 'colors' (specks of gold) or the estimated profit per pan.

Figure 16. Man Panning for Gold at Cedar Creek, British Columbia. [from the British Columbia Provincial Archives, #99662]

After a suitable area was claimed, a rocker could be easily constructed (see Figure 17). A rocker, also known as a 'cradle' or 'dolly' due to its resemblance to a baby's cradle, consists of a box set on a pair of rockers. On the top is a removeable deep tray, or hopper, resting on the bottom of which is an iron plate perforated with half-inch holes. Beneath the hopper and iron plate is a canvas or burlap apron stretched over an

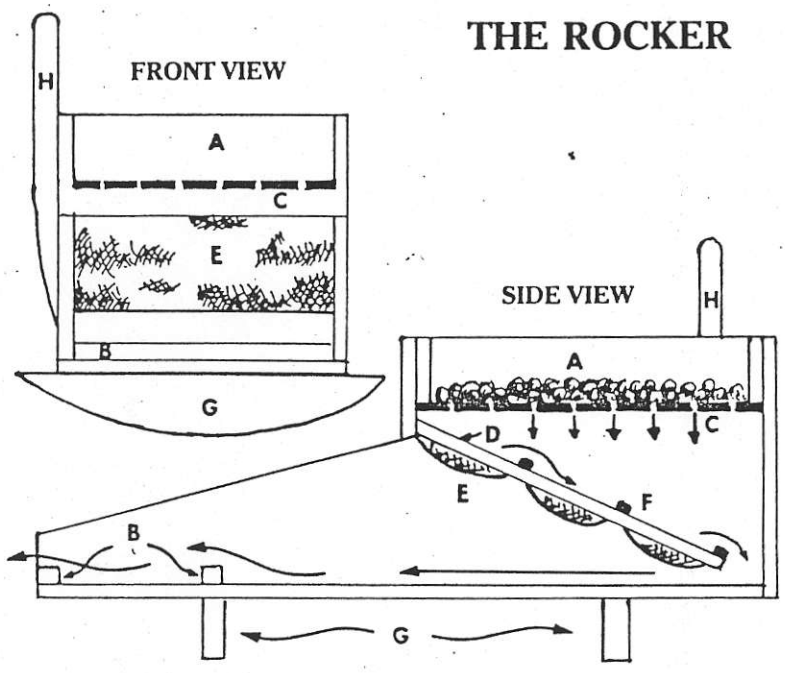

Figure 20. Schematic Diagram of a Rocker.
Hopper
Riffles
Perforated iron plate
Inclined frame
Apron stretched over frame
Riffles
Rockers
Handle
[from "The History of the Canadian West" by Basque, November 1983, p. 92]

inclined light frame, and beneath that lies the base of the rocker, stretching out beyond the area of the hopper above. This extension is used as the path of the waste rock, and has two riffles to catch any gold which may have passed through the catchers before. To begin operation of the rocker, a load of material is thrown into the hopper. Water is then poured over the gravel with one hand, while rocking the cradle with the other (see Figure 18). The rocking cannot be too vigorous, or the heavier gold will be washed out along with the gravel. The water washes the finer material through the holes in the hopper, and traps the gold in the canvas below, or collects it in the base in the riffles. The waste stones and dirt are inspected for any remaining gold, and then discarded. The rocker is placed close to a stream, where water can be easily obtained for use.

Rockers were used in Canada and the United States before the introduction of the sluice. Its main disadvantage is that a limited amount of gravel can be washed in a day. Its advantages, however, are that it requires little water, is simple and inexpensive to construct, and can be

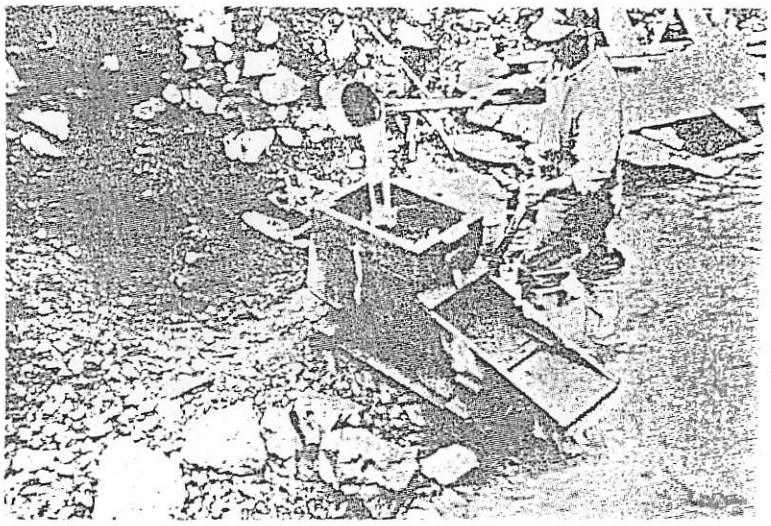

Figure 18. A Man Washing Gold with a Rocker on Spruce Creek. [from "The History of the Canadian West" by Basque, November 1983, p. 83]

disassembled for easy transport.

Box, or board, sluices are long, open-ended wooden troughs or a series of troughs raised above the ground (see Figure 19). They can extend from fifty to several hundred feet in length, but it is doubtful that any of such size were used at Goldstream. They are built with the lower end tapered to fit into the the broad end of the next trough (see Figure 20). The sluice rests on trestles, usually in a slight uniform descent, known as a 'grade.' A false bottom of riffles catches the gold as it washes down the sluice with the gravel. Because it is heavier, the gold is trapped in the riffles, and is easily extracted during cleaning (the riffles are built in a frame, which is set, not nailed, into the trough, to allow efficient cleanup - see Figure 21). The volume of gravel sluiced can be increased by widening or lengthening the sluice, and time saved by increasing the incline (at the risk of losing finer gold).

Different types of riffles can be used, including plank riffles, common riffles, zigzag riffles, block riffles, and stone riffles (see Figures 20 and 22). Plank riffles are built along the length of the trough, with a small bar at the bottom to trap large rocks. Common riffles extend the width of the trough, and vary in size, while zigzag riffles are similar except that they don't stretch across the whole width, instead alternating ends. This causes the water to swerve around the closed ends, trapping the gold in the curves. Some pioneer prospectors swore this to be the most efficient riffle system. Block riffles are utilised where there are many pebbles and rocks to wear down normal riffles. These wooden blocks last much longer, and offer a better chance of trapping fine gold in the grains of the wood. When the block riffles wear out, they can be burned

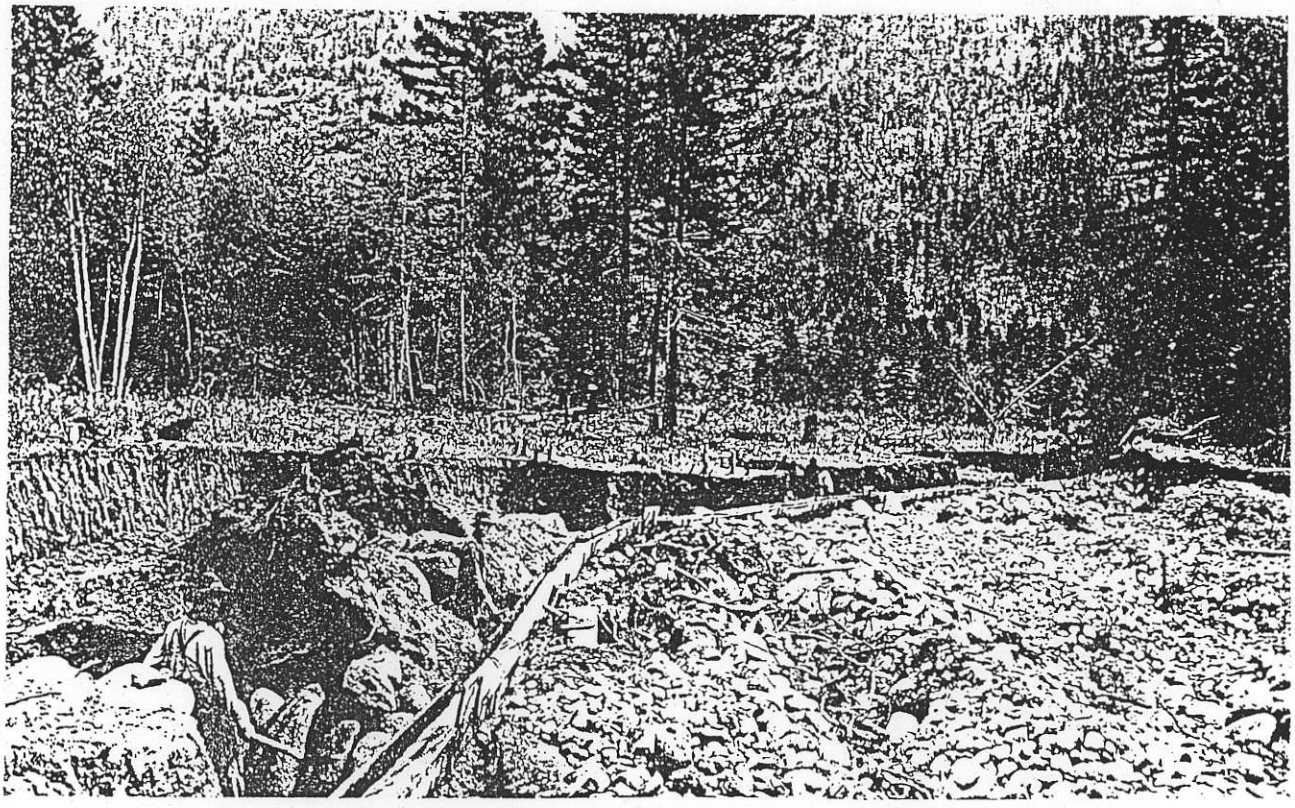

Figure 19. A Sluice Used at North Bend, British Columbia. Reports do not indicate that such a long sluice was ever used at Goldstream. [from the British Columbia Provincial Archives, #77719]

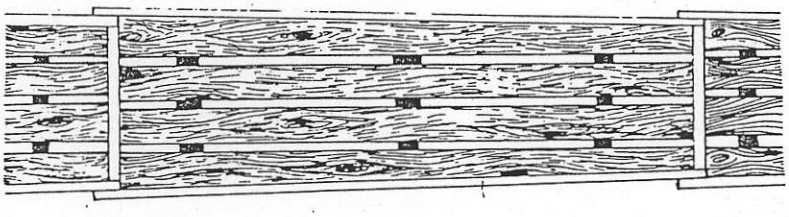

Figure 20. Plank Riffles in a Sluice. Notice the tapered shape, which allows the narrow end of this trough to fit into the broad end of the next. [from Basque's "History of the Canadian West," November 1983, p. 99]

and the ashes panned to obtain the fine gold. Stone riffles are inexpensive and very durable, making them ideal where the gravel is heavily cemented. However, they are awkward to handle, take longer to clean, need a steeper grade, and require more water.

Arrastras are a Mexican innovation, used long before the California gold rushes. It was a horse- or mule-powered method of grinding ore, after which the gravel could be panned, rocked or sluiced (see Figure 25). Thus, they were used by the quartz mining companies of the early gold rush, often sending the rock samples for mineral testing after crushing.

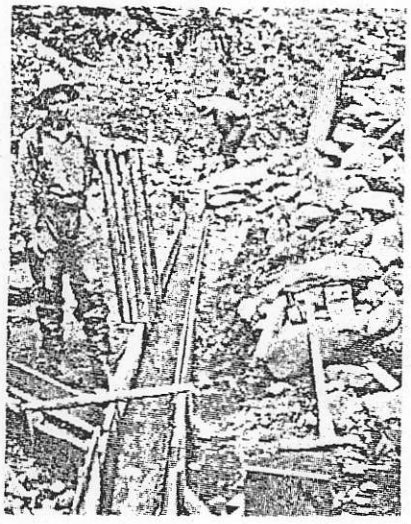

Figure 21. Miner Holding a Frame of Riffles. The removeable tray allows for easier cleanup. [from Basque's "History of the Canadian West," November 1983, p. 99]

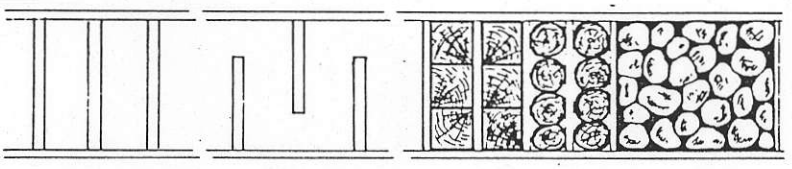

Figure 22. Types of Riffles. From left to right: Common riffles, Zig Zag riffles, Block riffles, and Stone riffles. [from "The History of the Canadian West" by Basque, November 1983, p. 99]

When mining the quartz veins and copper ore, test pits, shafts, adits and crosscuts were utilised.

The use of test pits has been recorded at the Ralph Mining Company claims. Their intention was merely to locate the mineral vein. A few pits are located on the west face of Mount Skirt, accessible by the Prospectors' Trail (see Figure 15).

Shafts, adits and crosscuts were used at both the quartz veins and copper mines. A shaft is dug vertically into the ground, while an adit (commonly called a tunnel) runs into the side of the hill. Crosscuts are small exploratory 'drifts,' usually at right angles to the direction of the main adit or shaft. These types of operations are most easily seen on Mount Skirt on the *'Ralph'* claim, where an intricate pattern of shafts, adits and crosscuts have been completed. Another adit and shaft can be seen on the Gold Mine Trail on the west side of the Park (see Figures 13 and 14).

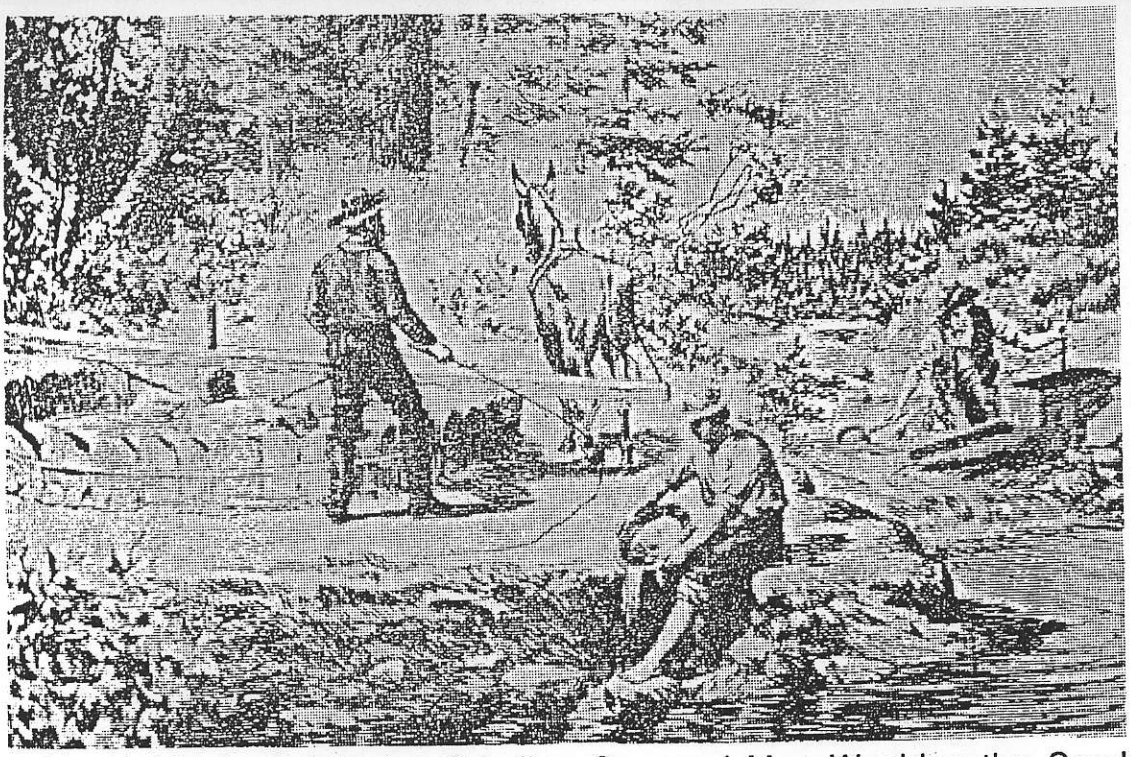

Figure 23. A Mexican Arrastra Grinding Ore, and Men Washing the Crushed Rock for Gold with a Rocker and a Gold Pan. [from Basque's "History of the Canadian West," November 1983, p. 17]

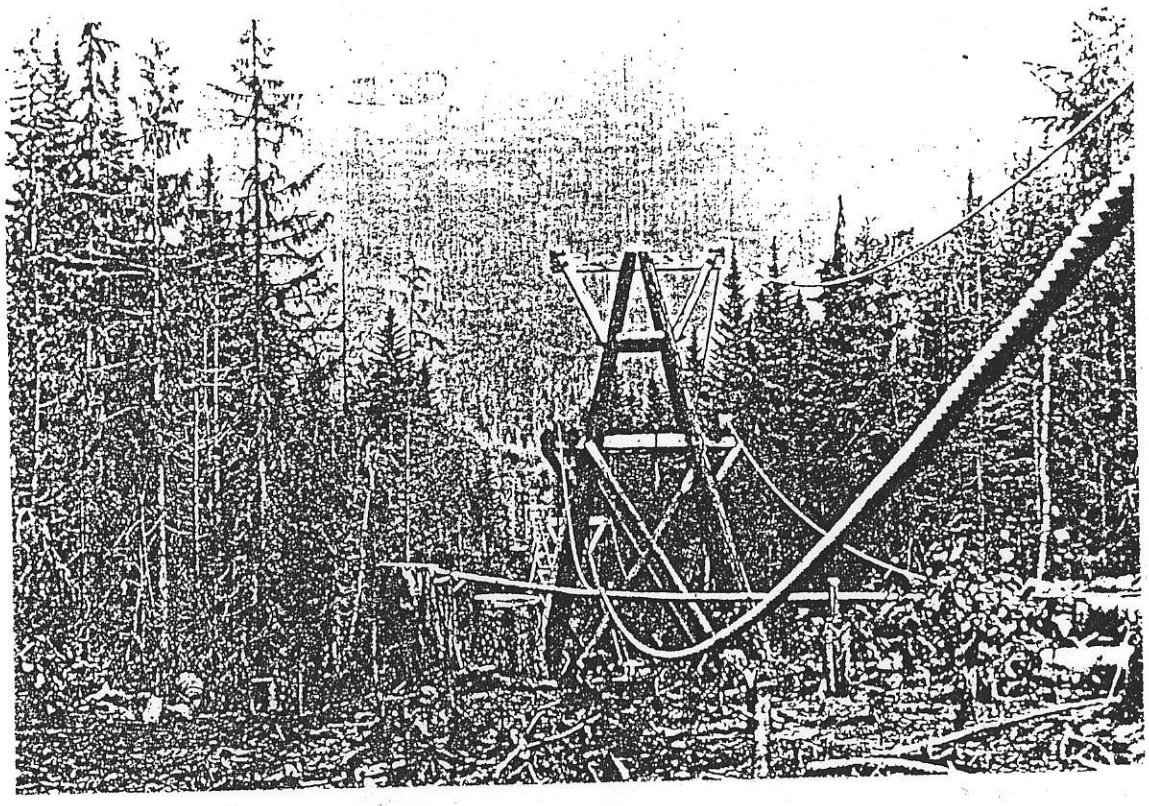

Figure 14. Photo of an Aerial Tramway. The aerial tram used at Mount Skirt may have been similar to this one, built to carry ore from the Roche De Boule Mine to Carnaby, around 1914. [from the British Columbia Provincial Archives, #88738]

An aerial tramway was also used by the Ralph Mining Group to transport rock ore down Mount Skirt (see Figure 24). The ore would be removed from the main adit by rail cars, placed into sacks and put in the tram. When the rock reached the wagon road below, it would be placed on mules and carried to town, to be sent for assay or to the Tacoma Smelter.

Various mining methods were used to extract ore from Goldstream, but unfortunately none were successful.

Appendix E

Companies Which Operated at Goldstream.

Placer Gold Companies

* Victoria Company
  * shareholders included H. Plummes, E. T. Fullock, J. S. Deas, Jackson, H. D. Robinson, J. Travers, J. W. Monet and H. A. Pickett
  * reached bedrock by the end of the first month, but claim abandoned in the middle of the next
* Kennedy Company
  * shareholders included Charles Deschant, S. Forward, J. Loren, Miller, Kriemler, C. R. Smallbone, N. Rudolph, B. Valentine, John Wilson and Molitor
  * Smallbone a popular character
  * company prospected upstream as well
* Union Company
  * shareholders included John Murphy, D. W. Chancy (Chaney?), James Alexander, George Wlich, C. W. Ball, J. W. Austin, F. Mahoney, F. Byrne, William Williams, F. Harben, John Chamberlain, Hennessy and M. M. North
  * largest company on the river
  * abandoned their claim by the end of the first month
* Rolls' Company
  * formed by Rolls, Isaacs, Booth and Montara
  * little was reported of this company
* Ayreshire Company
  * included McKinnon
  * work reported in the first two months of the rush, hindered by water

John Bull Company

  * included Harris
  * work recorded in the first two months, also troubled by water
* Unknown #1
  * shareholders included D. Powell, W. M. Aylesworth, Edward Wells, Mulligan and Allen Wells
  * small claim
  * only one report on the existence of this company, so may be one of the companies listed at the bottom of the next page
* Unknown #2
  * shareholders included Cotter, J. Clapperton, William Lawson, R. Biggs, H. S. Collier, James Hall, A. B. Gray, Henry Brooks, and

A. Pickett
  * only one report listing the existence of this company, but may be one of those listed at the bottom of the page
* Unknown #3
  * shareholders included L. Weller, F. Dean, P. Buddewart and Jarvis Norton
  * this unknown group may be one of the companies listed at the bottom of this page
* Unknown #4
  * staked by Lucas Fairn
  * site claimed by the end of the first month
  * this may be one of the companies listed at the bottom of the page, but it is impossible given the present information to deduce which one

Lode Gold/Quartz Mining Companies
* Douglas Company
  * staked by George Clarke and Trounce
  * first company on the Douglas quartz lead
  * one of the most prominent companies in the area
* Britannia Company
  * staked by Major Downie, William Mitchell, Richard Rowe, Alexander Bell, J. H. Turner, A. F. Main (?), W. Weisterman and Lionel Varicas (?)
  * one of the most prominent in the area
  * worked hard throughout the period, planned to expand operations to cover a larger area
* Parmiter Company
  * staked by Parmiter and Dean
  * shareholders included George Barnett, Alfred Jeffery and Thomas Hargreaves
  * was one of the richest on the river
  * claim was reopened twice by other mining interests, in 1873 and
* American Company
  * headed by J. Shuttleroe, Henry Hibblethwaite, and Messrs. Matthews
  * on main quartz lead
* Canadian Company
  * one of the first companies formed, but shut down by April 1864
* Washoe Company
  * founded by the discoverer of the Douglas quartz lead, Robert Miller, who became known as the "Robinson Crusoe of the Washoe"
  * work was carried on diligently by this company, but little return

* Prince of Wales Company
  * formed by April 1864
  * little was reported of this company
* Great Britain Company
  * formed by April 1864
  * little was reported of this company
* Rough and Ready Company
  * located on Douglas lead
  * formed at the end of the first month, worked until at least May 1863
* Fell's Company
  * formed by April 1864
  * little was reported of their activities
* Gould and Curry Company
  * formed by April 1864, worked until the Leech River discovery in August
* Pacific Company
  * formed by June 1864
  * little was reported about this company
* St. George Company
  * formed by November 1863
  * located on the Douglas lead
* Blue Tent Company
  * formed by Messrs. Matthews, also of the American
  * little was reported of this company
* Lancashire Company
  * little was reported of this company
* Cornucopia Company
  * formed by May 1864
  * little was reported of this company's operations

Placer to Quartz Mining:

* Regina/Muir Company
  * began as a placer company, but William Muir formed a quartz mining outfit on a spur of the Douglas lead
  * company also included Doc McCandlish, P. Pickett, E. O. Langley, Stephens, J. L. Shepard, W. B. Shelly, James Carswell, and Charles Stevenson
* Discovery Company
  * shareholders included Thomas Rowland, George Fairchild, Marcus Malcolm and Alexander Porter
  * began to prospect quartz leads by the second month, and became a quartz mining company by the end of the year

Others (unknown what type of company, due to lack information):

* St. Nicholas Company
* Vancouver Company
* Julia Company
* Jenny Lind Company
* Woodstock Company
* Magnus Brown Company
* Scotch Company
  * shaft caved in in December 1863
  * little was reported of this company

Appendix F

Letter of Reply from Dr. G.E.P. Eastwood to Mr. Hugh Salmond

Dear Hugh:

With regard to the so-called "mystery mine" beside the Centennial trail in Goldstream Park, I have not been able to find anything very definite in our Annual Reports or in the indexes to old claim records. The Annual Reports are pretty complete back through 1916, and it is highly unlikely that that amount of work could have escaped attention if done subsequent to 1916. From 1896 to 1915 there is fairly good coverage of the Victoria Mining Division in two or three of the years, but the workings in question could have been missed. However, I think there is a reasonable probability that they were driven before 1896.

James Phair developed the "Mount Skirt mine" from 1897 to 1901. According to Mr. Davey of Milnes Landing, Phair operated the Goldstream beer parlour, and got a lot of the work done by giving credit. In that situation, I would expect Phair to hear of just about all of the prospects that were handy to Goldstream, and I would expect him to have a look at them. In 1900 he recorded two claims in Lot 7, Goldstream District, but did not subsequently record any work on them, so presumably they lapsed in 1901. Lot 7 extends south from the E & N Grant, on both sides of the Goldstream River. If the claims were on the east side of the river, why did he wait so long to extend his Mount Skirt holdings? If they were on the west side they would very likely include the "mystery mine". [sic] I would guess that Phair was told about these workings, found them, staked the ground to prevent interference, and investigated them at his leisure. Since he could find nothing of value, he did no further work and let the claims lapse. If he had driven the workings himself he would surely have recorded the work, which would have entitled him to keep the claims for another year or two. There was a rather widespread practice of getting around the law in those days by having a friend stake your expiring claim. The obvious choice would have been Phair's partner, "Toots" Lubbe [sic]. But Lubbe staked no claims in Lot 7. Evidently Phair thought so little of these two claims that he would not even pay the $5 recording fee for each. I do not know whether the ground was re-staked, or whether the workings were driven in the period 190- [number illegible] - 1915, but I would doubt both. I am almost sure that word would have leaked out that Phair was disappointed, and this would effectively damn the ground.

I do not think the workings were driven in the period 1896 - 1900 for two reasons. The B.C. Bureau of Mines was created in 1896, headed by a Provincial Mineralogist, and with a Provincial Assayer as 2/ic [second in command]. Both of these officials were industrious workers, anxious to show the value of the Bureau to the mining industry, and they made extensive trips around the province. Since there was a hotel at Goldstream, it would have been a fairly simple matter to spend the night there some winter eve, then hike out to the scene of reported work on a gold showing. And the amount of work done would surely have got into the Annual Report. After 1898 the zeal slackened, but then we have Phair to contend with. The work done should have been worth at least two years' assessment and, with the original staking, this would have given the staker 3 years' ownership. He would have tried to deal with Phair, and Phair would have demanded a look. If Phair had got his look he would not have restaked later. Or, if he had been foolish enough to deal, he would not have restaked his own ground. He would have had to leave it open for about 20 days. If Phair did not get his look, the developer would have tried to wait him out. It is possible, however, (1) that Phair merely tied on to the claims covering the "mystery mine", [sic] or (2) that Phair was verbally willed the property in payment of debts but, doubting the legality of the informal arrangement, secured the claims by restaking. The two claims staked in 1900 are in the names of James and Mary Phair, but there is nothing in the name of Lubbe, so I am skeptical of (1). If (2) is true, we must assume that the developer died so shortly before the claims were about to expire that Phair did not have time to examine them.

The Annual Reports go back to the creation of the Department of Mines in 1874, but before 1896 they consist, apart from the section on coal, largely of letters from the Gold Commissioners and Mining Recorders, giving a general review of the year's activity in their districts. They mentioned an individual property only if the results were really spectacular. There are a few reports by consulting mining engineers, but none of them deal with what came to be Victoria Mining Division. One does learn from them, however, that placer-mining of gold was gradually declining, and that considerable debate was going on as to whether the sources, the lode-gold deposits, could be identified as profitably worked. There is some allusion to an unsuccessful experiment along these lines in the Cariboo in the late 1870's, which apparently led to a good deal of recrimination. It is quite possible that the workings in question could have been driven in this period.

Unfortunately I have not been able to find any early claim maps. In their absence it would be necessary to go through the record books of

Victoria Mining Division claim by claim - for many thousands of claims. I just cannot take the time off from regular work to do this. And the search could well draw a blank anyway - for the record books start with Record No. 1 in 1891. There is some indication that a new Mineral Act was passed in that year, setting up the system of recording much as it is today. Unfortunately, the Annual Reports are silent on the matters of legislation. If I took the time to search out the right people I could probably find out how claims were recorded in the area of Victoria Mining Division prior to 1891. One possibility is that it formed part of some larger area, and that the records would be stored elsewhere. Miss Mitchell in Archives assured me that they should have them, but I am not sure how well informed she is on the ins and outs of claim recording. In 1869 some lode claims in the Hope area were granted by ordinance, but the system may have changed with the entry into Confederation in 1871. Archives have an incomplete list of uncatalogued material. A set of claim records for part of 1865 is indicated. Miss Mitchell assured me that the material for the Colonial period is much better organized than the later material.

The Geological Survey of Canada is not very helpful. In his Memoir on the Sooke-Duncan area, C.H. Clapp tends to restrict himself to generalities. G.M. Dawson was specific, but he restricted himself to what he saw and what he deduced therefrom. In 1876 he made a trip from Victoria to Leechtown. He records an adit near the Goldstream bridge, but comments unfavorably on the veins, and continues the narrative. He obviously did not sidetrack to the "mystery mine". [sic] However, his report is interesting in that it records workings in bedrock as early as 1876. Actually, this adit must have been driven several years before because it was already deteriorating. In those days the bridge was a short distance above Goldstream Hotel. A detailed map c. 1905 shows a road going out to Goldstream village, then continuing along the south side of the Goldstream. It shows the bridge, and the disused trail to Leechtown along the north side. It also shows a trail from the bridge down along the north and west side of Goldstream to Finlayson Arm. Before 1871, of course, the Geological Survey of Canada had no business in British Columbia.

In 1864 Governor Kennedy, in collaboration with the city fathers of Victoria, commissioned Dr. Robert Brown to explore the southern part of Vancouver Island. Brown issued a brief interim report that fall which is rather remarkable for its clear, concise, factual character. In it he describes the landing in Cowichan Bay, the overland trek to San Juan basin, and the journey by sea to the mouth of the Sooke River. For reasons discussed in detail, Brown then continued on to Victoria by ship, leaving

his 2/ic, Major Leech, to lead the party up the Sooke and Leech Rivers and down the Koksilah to Cowichan Bay, where he rejoined them. Brown makes it clear that panning at the mouth of the Sooke and some lode exploration has led him to believe that the expedition would find gold in the drainage basin of the Sooke. It did, word leaked out, and the Leech River rush began late in August.

Miss Mitchell assures me that Brown later issued a definitive report. Also that Archives have extensive clippings relating to the Leechtown placer rush.

It appears that identification and dating of the workings in question requires the services of an interested and competent person with the time to make an extended study of early claim records and pertinent material available at the Provincial Archives. Some help might be obtained from descendents of James Phair. Mr. Davey mentioned interviewing him at the home of his daughter in Cobble Hill shortly before he died. I did not get the daughter's married name.

I hope to go out with the Deputy Chief Inspector of Mines on Nov. 14 to see what needs to be done to protect the shaft. I will then contact the Parks Branch and yourself.

Sincerely,
G.E.P. Eastwood.

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