Appendix C

Vancouver Island and its Resources, Lecture by W.J. Sutton, M.E., F.G.S., *The Colonist*, 15th February 1903

On February 10th Mr. W.J. Sutton, M.E., F.G.S., delivered the following address on, "Vancouver Island and Its Resources," at a public meeting in this city:

Mr. Chairman, Ladies and Gentlemen: In rising to address an audience like this on the subject "Vancouver Island," I feel, Mr. Chairman, very much in the same position as you would feel, sir, if you were asked to disclose your opinion on the condition of a patient under your hands. As many of you are aware, I have been professionally studying Vancouver Island for several years, and I have been making a diagnosis of Vancouver Island in very much the same way as a doctor would make a diagnosis of a patient, and, Sir, for that reason I felt some timidity in consenting to address an audience on Vancouver Island: but, Sir, when I was approached to speak on the subject I felt that I must set aside the professional aspect of the subject, and come before you as a citizen of Victoria. I feel that it is a duty I owe to this country. (Applause.)

I have roamed over this Island, more perhaps than any man living, and in that way know more about it; and it seemed to me that it was hardly right that I should remain silent when the opportunity was presented for me to address the people of Victoria on a subject of this character, especially as I understand this movement is being made for the purpose of bringing out what our Island is like.

Taking it up from that standpoint, I will dwell briefly upon the geology of Vancouver Island. Sir, when a doctor examines a patient, the first thing he does is to study his history, to ascertain, I understand, his pedigree – the stock, so to speak, from which he sprung, so as to arrive at some idea regarding his constitution. Now, the first thing for a scientific man to do in approaching a study of this character – the study of Vancouver Island – is to try and ascertain, if he can, its life history, so to speak; in other words, its geology. By its geology we get a fundamental knowledge of the character of the country. It tells us the why and wherefore of the condition of the country, and for that reason it is permissible for me on an occasion like this to touch a little on the scientific side of the question. I have had placed before you a chart – a geological chart – showing the great ages in which time is divided geologically. I do not wish to go into this in any great detail, but have placed the chart there, so you can follow the few remarks I shall make on the subject.

I wish you, ladies and gentlemen, to go back with me to the carbonic era – the carboniferous period. It is in that period that the embryo of Vancouver Island first began to form. I have also had placed before you, a map of Vancouver Island, on the scale of half an inch to the mile. Now, during the carboniferous period Vancouver Island commenced its history. During the early part of the period it was practically all covered by the ocean. There may have been a few small islands scattered along the coast. Of course, we have not investigated Vancouver Island sufficiently to say there was not, but taking it as a whole it was covered by the sea, although comparatively shallow water. There were places where limestone was being formed by the aggregation of shells, and clay and sand was being carried down from the coast in different places by the large streams, and we had a very quiet condition of things – that is, as far as the accumulation of sediments along this shore line was concerned. But toward the close of the carboniferous period, or possibly at the beginning of the Triassic period, we had a tremendous outburst of volcanic activity. This was perhaps the most intense of any of the volcanic eruptions that ever took place on the face of the planet, I speak geologically. It is difficult to

estimate just exactly what the condition was, but we know this much, that immense quantities of ashes and volcanic fragments were thrown into the atmosphere, perhaps reaching into the skies ten and fifteen miles, and darkness prevailed over this whole country for hundreds of miles. Millions upon millions of tons of lava were thrown out, during one of the most terrific outbreaks of volcanic activity that perhaps the earth ever felt. It must have shook tremendously the old earth at that time.

We had these ashes strewn from one end of Vancouver Island to another, extending way up into the Queen Charlotte Islands. Right from the Straits of Fuca near the lower point of Albert Head we have ashes, and all through the mountains I have found these ashes and fragments. The most remarkable portion perhaps is the Beaufort range, which is made up entirely of volcanic fragments. Mount Benson, back of Nanaimo, is composed largely of ashes thrown out during that period.

Where I stand tonight was a red hot bed of lava. The rocks which abound in this neighbourhood were poured out during that period in the form of lava. Eruptions must have continued intermittently during long periods of time. Thousands and thousands of feet of ashes, eruptive, and sedimentary rocks were formed during that period. We have not been able so far to separate the carboniferous and the triassic material.

As a result of this enormous outpour of ashes and volcanic material there were disturbances in the earth's crust in this neighbourhood. We had a general adjustment, during which the Coast range of mountains was formed. The Coast range was formed after these great outbursts of volcanic action of which I have been speaking, and we had an immense amount of granite formed, from which large tongues penetrated Vancouver Island. We have granite occurrences at Saanich, at Ladysmith, and all through the Island we find more or less granite, especially in the region along Johnston Straits. We have here a contact, so to speak, of two classes of rock made up of eruptive material, the dividing line between two great geological formations. Along the contact where the granite touches the limestone and other materials, we have some of our largest ore bodies. The iron formations on Texada Island in the neighbourhood of Gillies Bay and a number of mines around Van Anda were formed at that time. They are contact deposits formed between granite, limestone and eruptive rocks.

Another example I may mention the iron ore found near Quinsam Lake. There is a large amount of ore there, a large body of magnetite formed as a contact deposit, and I might cite numerous cases.

Volcanic activity is the source of chemical activity. Volcanoes might be regarded as Nature's boiling pots where she does her cooking. I have heard it remarked that the Island of Vancouver was not a good place, because it was so much broken up. All the mineral veins had been shattered and broken up, so that there was not enough in any one place to make it pay. That, from a scientific point of view, is all rot. I have no other word to express it. (Applause.) In order to have mineral we must have volcanic activity. The mineral is the outcome of volcanic activity, and we have had an immense amount of volcanic activity on Vancouver Island. It is for that very reason we look forward to a tremendous amount of mineral being found on this Island. (Applause.) Of course, I might dwell more at length on the geological points, but I have to speak to you tonight on other matters, and it is impossible for me to dwell on every point which I might bring up in this respect; but, so far as we have been able to ascertain, Vancouver Island has probably more mineral to the square inch than any other section of the world. (Applause.) We have along the east coast a strip of land extending from Cowichan up to Salmon River, which comprises the coal measures. Of course, where there is coal we do not look for any other mineral, but outside of that we find minerals scattered over the whole of the Island. It is true in places it occurs in small amounts, but then we cannot expect to make a mine out of every mineral prospect. That is one of the great bugbears in this country. Some seem to think that

every mine must be a million-dollar mine, and if it is not a million-dollar mine they do not want to have anything to do with it. I consider that a million-dollar mine is very often a great detriment to a country. It is gobbled up by some big capitalist, and he alone gets the benefit of it; but when you have an innumerable amount of small mines, why the small man gets more of it. One thing I wish to emphatically draw to your attention is that there are different sizes of mines; but the promoter, of course, is always endeavouring to make out that his particular mine is the biggest thing on earth, and he will go to work and stock his mine for one million dollars. A few years ago there was hardly a single mine that was not stocked at one million dollars, and everyone who owned a prospect professed that his mine was worth that amount of money. Now, people require to be educated in this respect. We have mineral, and a great deal of it, but we must not look on every prospect as if it were worth a million dollars. Let us husband our resources, and let us go out and do business as a business man should. He does not at first start into a wholesale business. He starts a retail business, and we should do the same way in mining. There is no other industry which will bring forth better returns if handled judicially, than mining.

Now we have reached the close of the Jurassic period and the beginning of the cretaceous period; the one in which our coal occurs. The carboniferous period was the one in which the greater portion of the coal of the world was formed. The coal deposits of Great Britain and Pennsylvania were formed in that period, but we are in a new country, and ours were formed later. Vancouver Island about this time was composed of a large number of different islands – that is, in lieu therefore we had an archipelago. At the time the Coast range was formed, Vancouver Island was elevated, and the coal areas were formed as a sea-shore deposit from the erosion of the hills. We have coal measures running all the way through from Cowichan Harbor to the head of Cowichan Lake, indicating that this lower portion of Vancouver Island, just before the formation of the coal measures, was an island. There was likely a canal through this portion of the Island; in fact, the present Island area was composed of a number of islands. These were gradually worn down, and formed a fringe along the east coast line, and it is along where these sediments were deposited that the coal was formed by vegetable growth. Then it was covered over by an immense amount of sediment through a gradual subsidence; in fact, that is necessary for coal measures to form. You must have a gradual subsidence so as to cover the organic material by sandstone or some other material so as to keep the atmosphere away from the vegetable matter in order to form coal. There must have been a long period of subsidence to form a deposit of 5,000 feet, more or less, of sandstone. That must have taken a long period of time, likely through the whole of the cretaceous period. That was a period of rest for Vancouver Island but during the tertiary period there was another great disturbance. We had a line of elevation through the centre of the Island, and the coal measures which had been formed along the coast were elevated along their inner margin to the extent of two thousand feet; that is, there was a vertical elevation in the region along the Beaufort range to probably that extent. We have been working the coal measures along the edge, so to speak.

Here we have Cumberland. Cumberland is near the edge of the coal measures. Nanaimo is also near the edge of the coal measures, and, as our chairman has pointed out, they are away under the sea, going out here and there quite a distance under the sea. Here is Nanaimo, and it is a question which may be solved someday whether the coal measures extend under the whole of that portion of the water which widens into the Gulf of Georgia.

We have here at Gillies Bay, Texada Island, a little outlier of the coal measures, and also on Lasqueti Island, and the dip of the coal measures is towards the sea. This dip is opposite to that on Hornby Island. The deduction taken from it is that there is a large basin going, say, thousands of acres under the sea.

I have said that during the tertiary period we had this elevation; there was also at that time a certain amount of volcanic material poured out. This was of a somewhat different character to the other eruption just mentioned, namely, that tremendous eruption. It was more local in its character. This volcanic material was principally what I call trachyte. The government buildings are composed of that rock. The government building stone was brought from Haddington Island. There was only a moderate amount of material poured out during this eruption, and, as I have stated, it is the same material of which the government buildings are composed. There was possibly more volcanic activity in this section of the Island than perhaps any other portion of it. The volcanic outburst appears to have had its focus more towards the North – more in the Queen Charlotte Islands direction – as there was an immense amount of material poured out on Graham Island at this time. There was considerable disturbance around Quatsino. We have coal measures in this neighborhood – several thousands of acres. A San Francisco firm has been busy at work trying to trace the coal bed there. When I was there they had a bed of 2-3 feet in thickness.

Near Cumberland there was a lava flow. It came from an eruption in this neighborhood, and flowed down over the bituminous coal measures. It is owing to that flow that we have the anthracite coal there. Work has not progressed far enough to definitely ascertain the extent of this alteration. It has been converted into anthracite by the heat from this large flow of volcanic material which has poured over these coal measures several hundred feet in depth. In Alberni we have a mountain called Mount Patlieant. That was a volcano which poured forth ashes in this period, and there was a considerable disturbance of the coal measures in this neighborhood, as we have a smaller area of the cretateous coal measures at the head of Alberni Canal. This extended at one time through to Comox Lake, but the greater portion of the coal measures had been swept off this area; the sandstone rises to high elevations on the Beaufort Range, on the west side of them. There are other small disturbances, but it is too intricate to go into at any further length.

At the close of the tertiary period we had the glacial period. During the glacial period we had two enormous glaciers – one starting from the head of Bute Inlet and extending down over the whole Strait of Georgia, down to somewhere beyond Victoria. There was a sheet of ice over this whole area; probably in the northern portion it was fully a mile in thickness. In the neighbourhood of Victoria, judging from the glacial action here, we must have had ice 1,000 feet in thickness during that period. Then we had another large glacier in the north. It had its head probably in Knight's Inlet, and flowed out towards Queen Charlotte Sound. It, too, must have had a great thickness. As a result of that glacial action, we have had considerable glacial material deposited on the Island in different places, and that is what we call boulder clay. In the neighborhood of Comox, from Cape Lazo to Willow Point, there have been large deposits of boulder clay. Quinsam River cuts through a considerable depth of this clay. We have also a little of it in Victoria. In numerous places where wells are put down we find this boulder clay, but there is a very thin strata of it in Victoria. We have mostly the bare rocks here, but where there are cavities in the rock we have a little of this boulder clay deposited.

Then came the age of man and here we are today, gentlemen. (Laughter.)

Now, during the tertiary period Vancouver Island was greatly elevated. Valleys were formed and materials brought down and deposited over the valleys, and we had soil formed and the country made habitable. During the glacial period a great deal of the vegetation was swept off, and most of the material we have in the valleys has been deposited by the glaciers and the erosion of the mountains since the tertiary times.

I will now take up the mineral deposits of Vancouver Island, and will first touch upon the gold and silver occurrences, and more particularly gold. We have very little silver so far – that is, what we call silver-bearing ore. We have only two places where argentiferous galina has been found. I may say, in this connection, I, along with Mr. W.A. Robertson (whom I am pleased to see here this evening) were the first to find galena on Vancouver Island. It was my first experience in exploring Vancouver Island. It was up on the Koksilah River. I was at that time fresh from college, and of course Mr. Robertson, being an old veteran, took the lead. We started out from Cowichan Wharf, and went over a mountainous trail, across the divide from Cowichan River Valley. We had to go over hill upon hill, through brush and over logs, and I tell you I thought it was an awful trail. Here and there we blazed sign-boards, and I remembered two of them. One was "the Valley of the Shadow of Death" and the other was "Leave Hope Behind." (Laughter.) Well, we found galena on the Koksilah River, and I was so enthusiastic over this discover that I was determined to bring out a piece, and I picked out the best piece I could find. Of course, it was the heaviest, and I put it in my pack. It persisted in working down to the bottom, and rubbed against my back and, to make a long story short, I was sore for two weeks afterwards. I managed, however, to bring it down to Victoria, and assayed it. I assayed it on Mr. Robertson's forge, as I had no assay office at that time. It contained some silver. After a time a company was formed, and they called it the Stirling Mine. But I shall never forget my pack of galena, as I was sore for two weeks afterwards. (Laughter.)

In that connection I might refer to another trip that I made with Mr. Robertson, just to illustrate the difficulties pioneers had at that time. We wanted to go up to Alberni and examine Barclay Sound and Alberni Canal. The old steamer Maude used to make bi-monthly trips to Comox, and we went up on her, intending to land at the mouth of the Qualicum, but it was so rough in the Gulf of Georgia they landed us at Deep Bay, and we had to tramp along the shore, covered with boulders, and it was worse than a treadmill. Anyway, we reached Qualicum, and went over the trail and examined the country bordering Barclay Sound, and went down to Bamfield Creek where the Pacific cable has now its terminal. We intended to go up to Central Lake and cover that country, but it rained incessantly. We only had one fine day, and I believe that was Saturday, during all the time we were there, so we made up our minds to start back. We started out with the intention of reaching the Qualicum and catching the Maude on her down trip. We had to start at five o'clock in the morning. We passed by the Alberni townsite. At that time there were only three settlers there – old Mr. Clark, Mr. Taylor and Mr. Merriman. We stopped at Mr. Clark's house and had some pea soup, and I have never forgotten that pea soup. It certainly stuck to my ribs that day. We trudged over this weary trail, and it became very dark. I thought we would have to stop, but Mr. Robertson was equal to the occasion. He hunted around and got some gum-wood, with which we made torches, and we went on the rest of our journey with the torches made of this gum-wood. Well, we reached Qualicum, and we had not had any supper, and I was a young man with a good appetite. When we started out we made a cache of some provisions in an old Indian house on the other side of the Qualicum, and whilst Mr. Robertson was making a fire I succeeded in swimming across the Qualicum, but in consequence, my matches had become wet, and when I got over to the Indian's house he had been there and had nailed up the house. I was, however, determined to go in and get them, and I beat down the door and groped around in the dark in that dirty old Siwash house for the provisions which I expected would be there, but they were gone. I had to return supper-less, and again swim across this wild torrent at midnight. I give this as an example of what pioneers have to do to master Vancouver Island. No-one but a man with tremendous determination can overcome the difficulties in the way.

To give you another illustration of the difficulties in the way, I might state another experience I had on the West Coast in the neighborhood of Wreck Bay, where black sand containing gold occurs. My

brother has been interested down there, and they have taken out in the neighbourhood of $20,000 in gold. I named it Lost Shoe Creek, because I lost my shoe there. The sallal was so thick that I had to roll over it, instead of forcing through it. That is the only way I could get through the thicket, so I rolled down to Wreck Bay, and when I reached Lost Shoe Creek I had to ford it. In crossing I lost one of my shoes, which was carried away by the current. They say necessity is the mother of invention, and so I made a pair of moccasins by tearing off a piece of my trousers, and I started down Wreck Bay as far as Ucluelet. I had to cross over this, and, as usual, the tide was in. It had become dark, and I had to wade all around the head of Ucluelet Arm. There, vegetation grows out to the water's edge, and the brush close to the beach is impenetrable. After I reached my canoe I had to paddle another mile to reach our camp down on the Arm, and had to battle against a strong headwind. You can picture to yourself what a trip that kind must be like. I finally reached our camp and it was several days before I recovered from the exposure. I could enumerate a dozen experiences of this kind.

The only other place where galena is found is up on the headwaters of the Gordon River, near Cowichan Lake. They have been doing some work there lately, and at Koksilah River, and these are the only two places where galena has been found. Gold and gold-bearing quartz have been found from one end of Vancouver Island to the other. There is an important belt of slates from Goldstream through to San Juan. There is a large area there which is auriferous. I may state gold has been found in small quantities in almost every mountain stream leading into the interior. Considerable gold was found on Chips Creek, also on Bear River. This river rises in a steep range of mountains. It is the wildest portion of Vancouver Island. I have endeavoured to attack it at different times from different points. I tried to go up Bear River, but could not reach the interior: it is frightfully rough. Then I tried to attack it at Elk River. Here I found a pass through to Taylor River now called Sutton's Pass. Then I have been up Deer Creek; it also goes up steeply into the mountains. The only way I think that this country can be attacked is from the east side of Buttle's Lake. It is frightfully rough on the West Coast. We have considerable gold in the black sand all along the northern shore of Vancouver Island. In fact, all the streams heading into the central portion of Vancouver Island contain more or less gold. But time will not permit me to go into detail regarding those finds. The most important finds so far have been copper. I look upon Vancouver Island as a place for copper deposits par excellence. The best location so far has been the Mount Sicker deposit. This point here indicates the Tyco and Lenora mines. There is a belt of schist crossing from Fulford Harbour to Maple Bay, and extending away into the interior of the Island. I cut a trail from Ladysmith for the Esquimalt & Nanaimo Railway Co., 16 miles into the interior of this section of the country, and I understand there have been a number of good prospects found. That is no doubt a very promising area, extending, we do not know how far, into the interior of the Island. It has been formed by an immense amount of movement extending through the centre of the Island. The copper ore extends in large lenses that have been formed by the replacement of the schists.

Then on Texada Island we have bodies of copper ore as I mentioned before in connection with the iron deposits, many of the copper deposits have been formed along the contact of eruptive rocks and limestone.

Taking the West Coast, we have copper and iron found up the San Juan Valley – quite promising deposits of both iron and copper. Then, following down the coast, we have copper and iron, occurring at the Sarita River. Then we have copper and iron ore on Copper Island; and close to Sechart we have found cinnabar, an ore of mercury.

Passing along the coast, we have found iron ore up on Maggie River; in running one of our survey lines we had to stake it off, as the magnetic attraction was so great that the compass turned completely

around. There is no doubt that there is a large body of ore in that neighborhood. Then around Kennedy Lake, a few miles up Elk River, they have been finding some important deposits. There are deposits of iron ore quite large in extent, also gold-bearing quartz with pyrites. Then up Deer Creek copper has been found. On Sidney Inlet we have important copper deposits. So you see we have copper and iron found almost every few miles along the West Coast.

On the East Coast you can understand the difficulty of having to first cross the fringe or strip of coal measures, rendering it difficult to get to the backbone of Vancouver Island. It is along the centre of the Island where we find most of our mineral, because it is along there where the old series of rocks crop out to a greater extent, and also they are better exposed, as they raise their summits to the sky, and are free from vegetation. That is one of the difficulties we find on Vancouver Island; the amount of vegetation and the amount of drift that has covered everything over, and in addition the extreme rank undergrowth that we have to penetrate.

Now, Mr. Chairman, ladies and gentlemen, I do not want to tire you. (Cries of, "No, no; go on.") I shall have to leave the question of our mineral deposits and pass on to our timber. I was interested with my father in the timber industry many years ago. It was in search of timber that I started my explorations. I was educated for the mining profession, but when I came out here I found very little doing. I opened an assay office on Langley Street and charged $5 an assay, but I had very few assays to make. I joined my father in the timber business, and that is how I come to know something about timber. I might say that in those days if you took out a piece of mineral and showed it to anyone to ask them what it was, they would look at you with a quizzical smile, as if they thought you were a little light in the upper story. That is a fact. (Laughter). We had only a few men like Mr. Robertson who took an active interest in the mineral resources of the Province. I can assure you that there has been a great change since that time. It is 25 years ago since I opened an assay office on Langley Street. Well, things have greatly changed since that time, and I am happy to say that we are commencing to raise a mining population, and I might state in this connection that I have a large private collection of the rocks and minerals of North America, and I hold it for a mining college for the city of Victoria. (Applause.) I wish to state this publicly, because I think the time is getting ripe when some move should be made towards the establishment of a mining college in the city of Victoria (applause), and I stand ready to give that collection, when the proper time comes, towards the establishment of a mining college in the city of Victoria. A few years ago we had an agitation in favor of a university, but I think that is aiming a little too high; but I do not see any reason why we should not have a mining college. Make it a college similar to some of the colleges of the United States, where they devote their attention strictly to making mining engineers. I was instructor for some years in the Michigan College of Mines, and I saw how it worked there; and I see no reason why we should not have a mining college in the city of Victoria, and I think it is time that we should make a movement in that direction.

Well, taking up the timber question, there is hardly an acre on Vancouver Island that is not covered with timber. The only place there is no timber is where water has covered the ground and made a swamp. But wherever there is a chance for a tree to grow, it does grow. Of course, the best timber is found in the valleys, but in some places the timber climbs the mountains wonderfully. I found fir trees growing 2,000 feet high on the Beaufort Range. As a rule the fir reaches an elevation of 2,000 feet. When it is too high for the fir we have hemlock. The fir belt reaches up to about this neighborhood (indicating on map). We have perhaps the largest belt of timber in and around the Salmon River country. That is a very large area, and the very finest of timber, running approximately 50,000 feet to the acre. That is what the best timber of Vancouver Island averages. We have some special places where the average runs up very high indeed. There is a place up on Robertson River,

Cowichan Lake; I am satisfied that several thousands of acres there will average 300,000 feet to the acre. They have been logging on Cowichan Lake, and there is a number of places where the timber has averaged 100,000 feet to the acre. The trees grow up like candles and form an umbrella top, without a single limb below, and we used to make the remark that it took two men and a boy to see the top.

On the south side of Cowichan Lake we have an enormous acreage, amounting to probably one thousand million feet. I am only giving you these figures very roughly indeed, just to convey to your minds some idea of the magnitude of our resources there. Then up in the neighbourhood of Comox the Chemnainus Lumber Co. have a very fine timber area. They have one single block there of 20,000 acres, and then there is this area here, running up to thousands and thousands of acres; it will average about 50,000 feet to the acre. All this has not been touched yet.

On the West Coast instead of fir we have cedar. I was interested in some timber land at Kennedy Lake, where there is very large cedar. To give you some idea of the size of the cedar trees down there, when we were running a survey line one day, I sent a man back to pick up something that was left behind, and as he had only been gone a few minutes, I noticed by his demeanour that there was something wrong, and he said: "I thought I was going the other way." I went along with him to ascertain how it happened. I found that he had become lost in going around a big cedar tree, and came back on his track. (Laughter.) That tree measured 45 feet in circumference. (Applause.)

Well, sir, along the West Coast we have a very large quantity of very fine cedar, and there is considerable cedar scattered all through the timber limits on Cowichan Lake and Comox and to the north; but the cedar decreases as we go northward, and here we have more spruce. I have not been through the Klaanch portion of the country, but reports have been made by Mr. Fry and Mr. Gray. They report considerable areas of cedar and spruce.

Now, ladies and gentlemen, I think it would be in order for me to refer more particularly to the question of route for an Island railway to the north end. In doing so, Mr. Chairman, I may state that I have travelled over the country pretty thoroughly, and can speak with some degree of knowledge on the subject. Of course, as Mr. Lugrin has remarked, "the last word has not yet been said" on the route question. I shall point out to you what I consider to be the best route for a railway, after studying the geography and topography of the country. I am not a railway engineer, but a mining engineer, and understand considerable about surveying being a practical surveyor.

Well, starting from Wellington, I would continue it along to the east of the Beaufort Range. When I speak of the best route for a railway I mean, of course, the cheapest way of reaching a certain point. There are many things to be taken into consideration in the location of a railway. It does not necessarily follow that the cheapest route is the best route, but I will give you what I consider the cheapest route.-

That is, starting at Wellington and skirting the coast – that is where the best grade could be obtained; some distance from the shore a good grade could be found along there, and hugging the Beaufort Range up to Cumberland. Then from Cumberland, continuing along close to the foot of these hills along the edge of the coal measures, you follow along the base of Mount Washington, thence to Quinsam Lake, then bending to the left up to Upper Campbell Lake, then by a stream coming down from the south side of Crown Mountain over to the summit; then following a branch to Gold River; thence to Muchalet Lake, and from there crossing the divide to Klaanch River, then following down the Klaanch River to the Karmutzen Lake; thence along the east shore of the lake; thence to Hardy

Bay. This section of the country is comparatively level, and there will be no difficulty in running along there. The most difficult section will be, I think, along the Karmutzen. Mr. Gray has estimated that the railway will cost there, in the neighbourhood of $20,000 to $25,000 a mile. That, I think, gentlemen, will be the most expensive portion of the road. Starting from Wellington, it will go through the very centre of the Island at this point. Then for branch routes; passing up the Cowichan Valley, along the north shore of Cowichan Lake, then striking over to the Nitinat River, following the Nitinat River up to the headwaters of the Cameron River, then across the divide through to Alberni. That would be rather an expensive route. The greatest expense would be in climbing over the divide between Alberni and the branch of the Nitinat River. This river cuts down very deeply through the mountains. Another route would be, to come through by Cameron Lake and over the divide to Alberni; but we have a great difficulty to encounter in crossing over the divide. The elevation is 13,000 feet and that has to be made in a short distance to reach Alberni. We may also reach Alberni from Cumberland by running a line along the shore of Comox Lake and down a fine valley behind the Beaufort Range, to Alberni. There are no special difficulties in the way except along Comox Lake, which would mean the expense of rock cutting. But this is a very good place to run a railway. That fine line down there (indicating) is a trail I cut through for the E. and N. Railway Company, and along that direction is the best place for the route.

Then, going further north, we could easily go from the main line down to the head of Muchalet Arm to Gold River. There is another possible route from Karmutzen Lake down to the West Coast. From Hardy Bay you have no difficulty whatever in branching down towards Quatsino Sound. This country is comparatively level.

Dr. Milne – What is the distance from Wellington to Quatsino Sound?

Mr. Sutton – The distance as near as I can estimate, is about 230 miles. It is comparatively straight from Wellington to Quinsam Lake, but from there on there will be considerable winding.

Now, ladies and gentlemen, I have briefly touched on a number of different points connected with Vancouver Island, and I think I have said enough for one evening. I thank you for the attention that you have given me, and I trust that all of those present who listened to me tonight will be stirred to take an expedition into the heart of Vancouver Island. (Applause.) I thank you, ladies and gentlemen.

In reply to a question put by Mr. Jardine as to Mr. Sutton's views on the government ownership of railways, Mr. Sutton replied:

In answering that question, it involves more than I can possibly answer in a few words. Although not a politician, I would like to say a few words. I hope that Victorians will not be led into any fanciful or faddist ideas regarding railway matters. I have noticed quite a number of different articles appearing in the papers from time to time, showing that we have in our midst theorists and political faddists on the question of government ownership of railways, and things of that kind; but I hope that Victorians will not be led into any political fad of that character. This country cannot stand government ownership of railways. I am firmly convinced of that.

Mr. Jardine – Why?

Mr. Sutton – I do not wish to enter into any details in connection with that matter. If we started into a discussion of that kind it would take up too much time. I am just giving an expression of my views on that question. I say that government ownership of railways is out of the question, and anyone who brings that forward in this railway movement either has a political fad or he does not understand the

question. If government ownership of railways is to be established, it must be established by the Dominion government of Canada. Our local government cannot do it. It reminds me very much of a quack doctor (if you will excuse me, Doctor. Laughter). This doctor was great on fits, and he had an idea if he would send his patient into fits he was sure he would cure them. (Laughter.)

Mr. MacGregor – Mr. Sutton, why do you not favor a route more through the centre of the Island?

Mr. Sutton – Take this section: it is simply impossible to run a railway through there. It is difficult even for a man to penetrate. It is just mountain after mountain. There is no range, and it is impossible to go through there, but I regard that portion as the richest portion of Vancouver Island. Here we have it possible to get a railway through. If we had to traverse some of these lakes and blast precipitous rocks all the way it would cost as much to make a short piece of that road as it would to traverse the whole of Vancouver Island. From a theoretical standpoint it might look as though there was not any great difficulty to be encountered, but from a practical stand point it is a very difficult country to run a railway through, and you must follow the valleys. The real issue in connection with this matter, we are all agreed upon, is that we want to go to the end of the Island. It is only a question of minor details whether we should prefer to traverse this or that section. Take for instance, this locality. Mr. Gray's map shows a possible road running over this way. That is in the neighborhood of Quinsam Lake, over by Campbell Lake and then through to the headwaters of Salmon River, and then swinging south of Victoria Peak and touching Gold Lake and Muchalet Lake. Another possible road is to come down by Campbell's Lake, over Salmon River, down Salmon River to White River; up White River a short distance then across along the back of Newcastle Range, over to Adam's River and then from the headwaters of Adam's River to Davie River and then down to Karmutzen Lake. That is a very zig-zag route. It might be advantageous to run a branch route in that way, but it would cost an enormous sum of money and would not open up very considerable country. It is difficult to predict what would be the best route in the long run, but from my point of view I think that you should select the cheapest route to the north end of the Island, providing it opens up a large territory. The road, I have suggested runs right up through the centre where the Island is the widest, 75-80 miles in this portion of the Island.

Speaker in audience – Mr. Sutton, do you think this railway would be a financial success to the company operating it?

Mr. Chairman, that is a question in economics. Although I am versed in science, I should not like to undertake to answer a question of that kind. All I can do as a scientific man is to point out the probabilities of mineral wealth and leave it to the railway men to decide whether it would be a good venture or not.

Rev. Mr. McRae – As to the agricultural land, what have you found in regard to that?

Mr. Sutton – I am pleased that the gentleman has asked that question, because it brings me to a point I had overlooked in making my remarks. In regard to agriculture, I might state that Vancouver Island is not an agricultural country. It is a timber country, and fortunately we have now a market for our timber in the Northwest. That has been a great bugbear – the market for our timber – but the Northwest having now opening up a market for our timber, we now look for great results. We must remove the timber before the agriculturist can do much with the country. There are places along the valleys, it is true, where the farmer can find land suitable for agriculture - that is, the alder bottoms and the crab-apple bottoms. In the neighborhood of Comox there is quite an extent of crab-apple land, possibly several thousand acres in that section, where the farmer could, by drainage, obtain

considerable agricultural land; but the bulk of Vancouver Island is heavily covered with timber, and the timber man must first go in and take the timber off, and the agriculturist must come after him. In the neighborhood of Alberni it has made my heart sick to see the way the fire has destroyed timber in that district. The rancher has gone in and destroyed more value in timber than an ordinary agriculturist could by any possibility earn in his lifetime, and there is no use shutting your eyes to the fact. Vancouver Island is a timber country, and the agriculturist must not be in too great a hurry. You must get that timber of our hands first.