

Vancouver Island

and

Railway Development



By CHARLES H. LUGRIN

VICTORIA, B. C.
1909

COLONIST  PRESSES

VANCOUVER ISLAND AND RAILWAY DEVELOPMENT

THE ISLAND DESCRIBED

(Reprinted from The Daily Colonist.)

By CHARLES H. LUGRIN, 1909

VANCOUVER ISLAND has an estimated area of 15,000 square miles, but in this are included the numerous small islands lying near its shore, which, however, are to all intents and purposes a part of the main island. Its dimensions are as follows:

From north to south, that is from Cape Commerell to the Race is, according to the Admiralty chart, 230 geographical miles, or approximately 270 statute miles. The greatest width of the Island is from Estevan Point on the west coast to Chat-ham Point on the east coast, and it is 86 statute miles. The least width is between Rupert Arm of Quatsino Sound on the west and Hardy Bay on the east, and is under 9 miles. The circuit of the Island is approximately 610 statute miles, but so deeply is the coast indented by arms of the sea, and so numerous are the islands, which, as has been said above, substantially form a part of the main Island, that the coast line, measured by all its sinuosities and around the minor islands, is 7,000 miles long, of which 5-7ths are on the West Coast. The indentations are such that it has been said by Mr. W. J. Sutton, probably the best general authority in regard to matters relating to the Island and whose figures for the coast line I have just quoted, that no part of it is more than 20 miles from the sea. Of these indentations the principle are: Barkley Sound and its prolongation, Alberni Canal; the Muchalat Arm and Tlupana Arm, which are extensions of Nootka Sound;

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Zeballos Arm and Espinosa Inlet, which are extensions of Esperanza Inlet; Tashish Arm and Kokeshittle Arm, which are extensions of Kyuquot Sound; Quatsino Sound, with its three branches, namely, the South Arm, Rupert Arm and West Arm; and Saanich Arm, with its extension known as Finlayson Inlet. There are many others, and in addition numerous harbors, but these will be considered later, the object at present being to give a general idea of the topography of the Island. Speaking generally, the West Coast is rugged and mountainous, the East Coast having a more gradual slope towards the water. The mountain range, which forms the backbone of the Island, lies nearer the West Coast than the East Coast, sending out spurs to the former. It is by no means of uniform altitude. Some of the principal elevations may be given: The conspicuous peak visible from Victoria over the Sooke Hills is 2,188 feet high; Mount Prevost, near Duncan, 2,637 feet; Mount Benson, near Nanaimo, 3,366 feet; Mount Moriarity, due west of Nanaimo about 20 miles, 5,185 feet; Mount Arrowsmith, south of Cameron Lake, 5,970; the highest point in the Beaufort Range, 5,420 feet; a range about 20 miles west of Comox averaging from 6,000 to 7,000 feet; Crown Mountain, near the northwestern corner of the E. & N. Railway lands, 6,082 feet; Victoria Peak about 20 miles northwest of Crown Mountain, 7,484 feet; Mount Karmutzen, near the lake of the same name, 5,500 feet; Twin Peaks, about 15 miles southwest of Port McNeil, 4,520 and 4,630 feet respectively; Garibaldi Peak, 4,416; Snow Saddle, 4,150, and several other peaks ranging from 3,000 to 4,999 feet around the head of the arms of Kyuquot Sound; an unnamed peak near Zeballos Arm, 5,795; Corunna Peak, 4,887, and several peaks on either side of Canton Gorge, reached from Nootka Sound, varying from 4,400 to 5,000 feet; several peaks near Muchalat Arm ranging from 2,000 to 4,895 feet; an unnamed peak at the head of Herbert Arm, 4,500 feet, and one near Bedwell Sound, 4,400 feet, the peaks along Alberni Canal which vary from 2,000 to 3,500 feet; the House Cone, northwest of northeast of Carmanah, 2,500 feet, and others. These elevations are taken from the Admiralty chart.

The Island may be traversed from east to west by routes apparently favorable to a line of railway in several places. Of these the most southerly is from Victoria to Sarita or Banfield creek at the southern side of Barkley Sound. The next route towards the north, is by way of the Cowichan river and lake to Alberni Canal. The next is from Nanoose Bay to the head of Alberni Canal, which is that adopted by the E. & N. Railway for its extension to Alberni. The next in order are from Comox to Alberni Canal; from Chatham Point to Nootka Sound; from Alert Bay to Tashish Arm; from Hardy Bay to Rupert Arm; from Hardy Bay around the head of West Arm to Winter Harbor at the outlet of Quatsino Sound. Other routes may exist through the mountain chain, but these are sufficient to show that there is nothing like an insurmountable barrier separating the two coasts of the Island. The East Coast of the Island is easily traversible by a railway for its entire length; the West Coast is impassable. It is possible that a feasible route can be found longitudinally through the centre, or near the centre, but of this more will be said when the question of railway construction is specifically discussed.

It will be seen from what has been said that the whole Island, with all its great stores of natural wealth, can be readily made accessible by both land and water transportation. This seems to be one of the first and most important points to be settled.

A Strong Strategic Position.

Vancouver Island's position off the western coast of British Columbia is a very strong one strategically. It forms very nearly one-half of the entire western frontier of Canada. Our western coast is, measured without regard to its sinuosities, about 520 miles long, and about one-half of it is formed by the coast of the island, which therefore is part of what may be called an Imperial frontier, and I venture to think that, whether it is regarded from the standpoint of war or commerce, it is the most important part of the British Columbia coast and ranks foremost among the frontiers of Greater Britain. The coast of this province is the only land along the whole circuit of the Pacific ocean, from Singapore to Cape Horn, over which the

Union Jack flies, excepting the little island of Hong Kong, which territorially is unimportant. I am most concerned with the commercial aspect of the case, and the only references to the naval or military side of it will be incidental. I first draw attention to the fact that the construction of a north and south railway along the coast of the Mainland is a physical impossibility. Rail connection between Vancouver on the south and Prince Rupert, northern British Columbia, and Alaska on the north is only possible by a long detour. The same remark of course, holds true respecting connection between the Pacific coast states and Alaska. Under any conditions that can arise there will always be a great traffic coastwise between the Pacific Coast states and southwestern British Columbia on the one hand and northern British Columbia, Alaska and the Yukon on the other. If it were possible to build a railway on the mainland to handle this traffic (in competition with steamers), it would have been built long ago, but as this is out of the question, the fact that Vancouver Island can be utilized for a very considerable part of the distance for railway construction is a matter of great importance. Time is becoming more important every year in connection with north and south bound coast travel. The development of Alaska is progressing rapidly. The islands of the Queen Charlotte group are certain to become a hive of industry. Northern British Columbia is a country of vast potentialities. Speaking first of the Alaskan railway—I refer now to those being constructed from points west of the 141st Meridian and not to the White Pass and Yukon—connection with them between those railways and Puget Sound ports must necessarily be maintained by steamships. If these run directly to Puget Sound they may to save time take the ocean all the way, and in the winter be exposed to the stormy weather common off Cape Flattery and the delays experienced frequently by incoming ships owing to thick weather. If there was rail to a point near the north end of Vancouver Island the steamers would likely use the inside channels, and the sea voyage would be materially shortened and time would be saved. These advantages would be utilized for passenger, mail and express traffic, even if the steamers carried their heavy freight all the distance from the Puget

Sound Cities to Alaska. The saving of time in respect to northern British Columbia and Yukon points would be relatively greater. Hence the Island occupies a strategic position of great importance in connection with north and southbound traffic. It will be shown later that at least two routes for a line running longitudinally through the Island are available.

The strategical position of Vancouver Island in respect to the traffic of Alaska is further strengthened by the proximity of the southernmost point of the Island to the harbors on the United States shore of the Strait of Juan de Fuca. From the outer harbor of Victoria to Port Angeles on the opposite shore of the Strait the distance in nautical miles is 17; from Beecher Bay to Port Crescent it is 10 miles, and to Port Angeles 16. These distances are by no means too great to be covered by car-ferries, as will appear later, nor is the character of the sea encountered a serious drawback if properly constructed ferries are used. The route from Beecher Bay to Port Angeles would lie diagonally across the Strait, and I assume would therefore be less affected by the roll which sometimes comes in from the ocean, than either of the others, which would cross the roll at right angles to the direction of the waves. In neither case, however, would the sea be sufficient to interfere with the better class of car-ferries. Railway construction to Port Angeles will doubtless come about at a very early day and in that event a connection could easily be established between the lines on the Mainland of the State of Washington and a line or lines on Vancouver Island, and thus the northern terminus of railway travel from the Pacific coast states to and from Alaska would be transferred to the north end of Vancouver Island. The feasibility of such a project has received the endorsement of distinguished authorities on transportation. These considerations seem to establish the value of Vancouver Island strategically in connection with traffic to and from the north.

The next aspect of this side of the case is the relation of the ports of Vancouver Island to trans-Pacific commerce. Before giving estimates of distance, it may be mentioned that the ports of Vancouver Island possess an advantage over all other ports on the northwest coast by reason of their nearness

to the open ocean, a consideration of no small moment in view of the important part played by time in transportation problems, and of the great size of ships now being employed in ocean-going commerce. No intricacies of navigation occur between the ocean, the harbors of Vancouver Island and the open sea. Of course those on the eastern shore are, with one exception, not included in this statement.

In ocean voyages ships follow Great Circles when possible. A Great Circle is the shortest distance between two points on the surface of a globe. The Meridians are Great Circles; so are the Equator and the Ecliptic, but the parallels of latitude are not. Hence if points are due north and south of each other, the shortest distance between them is due north or south; but if points are east or west of each other the shortest distance between them is not east or west, except on the Equator, but is found by following the line of the Great Circle upon which they are both situated. Any two points on the globe can be connected with each other by a Great Circle. This is elementary, but it is well sometimes to be elementary.

If we take two points on the Asiatic coast, say Hong Kong and Yokohama, and draw Great Circles from them so as to intersect Prince Rupert, the North end of Vancouver Island and the entrance to the Strait of Juan de Fuca, the Circles, drawn from Hong Kong will be found to pass through Manchuria, Kamschatka and southwestern Alaska. The Circles drawn from Yokohama will be found to pass through the Alaskan Peninsula. Hence it is impossible to sail from either of the ports on one side of the Pacific to a port on the other side, within the limits mentioned, upon a Great Circle, and therefore the theoretically shortest line cannot be followed. But the parts of several Great Circles can be followed with advantage for a great part of the distance, the remainder of the voyage being on what is called rhumb lines. For these reasons there are always variations in the estimates made by different people of the distances between American and Asiatic ports. For example Admiral Cochrane estimated the distance from a line joining Cape Flattery and Point Bonilla to Yokohama at 4,300 miles, Admiral Richards at 4,115 miles and

Captain Graham at 4,103. (Readers who care to read some interesting statistics and other information in regard to the western coast of Canada will find them in Sandford Fleming's Report on the Canadian Pacific Railway Surveys, 1877). The distances given hereunder are the result of measurements made upon the chart of the North Pacific Ocean by an experienced navigator at my request, and they were afterwards compared with those made by the naval officers above mentioned and others. I think that they will be found to be as accurate as any that have been made.

Trans-Oceanic Distances.

	Miles
Prince Rupert to Yokahama.....	3,870
Quatsino to Yokahama.....	3,918
Barkley Sound to Yokahama.....	4,090
Victoria to Yokahama.....	4,193

These distances are in geographical miles. That from Prince Rupert is substantially the same as estimated by the Grand Trunk Pacific Railway. The others agree substantially with the estimates made by the Canadian Pacific of the distance from Vancouver to Yokohama, if the distance from the former city to the several points is subtracted.

It will be observed that Quatsino is by estimate only 48 miles further from Yokohama than Prince Rupert is, a difference which may be disregarded, especially as the approach to Quatsino is directly from the open ocean, and hence the perils of the sea to be encountered in approaching it are less than those that may be encountered in approaching the northern port. I have not estimated the distance from Yokohama to Nootka, but it is necessarily a little more than to Quatsino and a little less than to Barkley Sound, but in either case the difference is so small as to be negligible.

The Approach from the Ocean.

It is not my intention to make comparisons except when it is absolutely necessary between the ports of Vancouver Island and those on the Mainland, and hence I shall confine myself just now only to references to the approach to the former. And first as to Quatsino, and what is said on this point

has also application to a certain extent to Hardy Bay, which lies on the east coast of the Island near its northern end. Lying northwesterly off Cape Scott and about 25 miles out to sea is Triangle Island, a high rock, forming the outermost of a chain of islets extending from the cape, which it may be mentioned is the northwesterly point of Vancouver Island. Triangle Island is 50 miles from the entrance to Quatsino Sound. The 100-fathom line is about 15 miles outside of Triangle Island and hence 55 miles from Quatsino. This line, which is of great value to navigators owing to its being somewhat sharply defined lies further and further from the land as the southern part of the Island is approached from the north, until, measuring due west from Bonilla Point, it is 60 miles out to sea. The late Captain John Devereux, of this city, laid special stress upon the value of this 100-fathom line in his "Statement" to be found at page 308 of Sanford Fleming's Report above referred to, in which he emphasizes the fact that the line being further off shore opposite the entrance of the Strait than it is more to north along the Island coast, it is "of greater service to the mariner in thick weather 'to warn him of his approach to land and its attending dangers.'" But to return to the importance of Triangle Island. Captain John T. Walbran, in a letter to me written some years ago, pointed out that if a 25-mile light were erected on Triangle, an approaching vessel bound to Quatsino, would pick it up when 75 miles out to sea, and would have that light as a guide until a 25-mile light at the entrance of Quatsino Sound could be picked up. With such lights, and with the soundings for a guide, and the whole Pacific ocean behind him, a mariner approaching Quatsino would be as free from peril as he could be anywhere on any coast. A light on Triangle Island would also be of the greatest service to mariners making Nootka or Barkley Sound from the northwest. Indeed it would be a valuable aid to the navigation of all vessels approaching the Vancouver Island shore from the northwest no matter how far south their destination might be. It would also serve as a guide to vessels approaching Prince Rupert from the southwest. I am not advancing my personal views upon this subject, for these, being only those of a landsman, who can only

study charts and ask questions of sailormen, are of little value, but they are what have been expressed to me by navigators, whose experience fitted them to speak with authority.

In some respects Nootka Sound is the finest harbor on the whole Northwest coast, principally because of its clear approach from the sea. In the early days of Northwest discovery the Spanish and the English navigators made this sound their headquarters. The 100-fathom line is here between 20 and 25 miles off the land, and several high elevations near the entrance of the Sound give the mariner an excellent landfall. This port is nearly midway between Quatsino and Barkley Sound, and the land approach to it is such that it may play an important part in connection with the commerce of the Pacific Ocean.

South Bound Traffic

Usually, when the development of the water-borne traffic of the Pacific Ocean is spoken of, people have in mind chiefly that which will be built up with the Orient, and while it is impossible to overestimate the possible expansion of this, it is by no means the only source from which this Coast may derive commercial greatness. South of the Strait of Juan de Fuca lies a vast region with which an enormous commerce may be created. Later I shall deal with Oriental traffic and the part the several Island harbors may play in it, but in this place I am only directing attention to certain geographical facts. I have spoken of the north end of the Island in connection with Oriental traffic. I shall speak of the south half in connection with southern traffic, not because the north may not share in this as the south may share in the other, but simply for convenience. I will leave inferences from the facts for treatment later.

The Australian Continent, New Zealand, Mexico, Central and South America and all the countries to be made more quickly accessible than they now are by the construction of the Panama Canal, must be taken into account when we consider the strategic value of the southern ports of Vancouver Island. The trade with these countries will be with people of the white race, and it will be in supplying wants already exist-

ing, whereas in the case of the Orient the demand has to a certain extent to be created. For the purposes of this traffic the southern harbors are very advantageously situated. In this connection Barkley Sound has much to recommend it. The 100-fathom line lies off Barkley Sound at a distance varying from 30 miles southwest from Amphitrite Point at the northern entrance, to 35 miles southwest of Cape Beale at the southern entrance. It extends due south of Cape Beale for a long distance. This 100-fathom line is the outer edge of the Continental shelf, as the geologists call it. It lies along the whole coast at varying distances out to sea. When speaking of Quatsino, I mentioned Triangle Island as a very important point for a powerful light. To render the approach to Barkley Sound as safe as navigation can be made anywhere, a lightship, with foghorn, could be anchored in between 30 and 40 fathoms of water just outside the radius of the Cape Beale light, if it were thought necessary. Such station would, I am informed, be of great service, not only to vessels bound for Barkley Sound, but to all vessels seeking to enter the Strait of Juan de Fuca from the Orient. The entrance to Barkley Sound itself is attended with no difficulties, because the distance to be traversed is not great, and a steamship would always have the unobstructed ocean astern, to which resort could be had in case of doubt. With ordinary aids to navigation, a competent mariner could enter Barkley Sound in any weather. What I have said establishes the claim that in Barkley Sound Vancouver Island has a harbor that is admirably adapted to be a headquarters for commerce with the South. I come now to consider the strategic advantages of Victoria, in which I include Esquimalt, in connection with ocean-borne commerce. In this connection it seems advisable to speak in the first place of the Strait of Juan de Fuca.

This remarkable waterway is destined to play an important part in the history of the Northwest coast. No matter what developments may take place elsewhere, through its waters fleets will always find their way, for by it are reached nearly all the transcontinental railways. The Strait is a part of a great structural valley, due to the operation of some tremendous forces in by-gone time. It extends inland on the

continent as far as the Hope Mountains, although the upper part of it has been filled with silt and other detritus brought down by the Fraser. It has two great ramifications. One of these is to the North and terminates at the head of Bute Inlet. The other is to the south and extends far down into the State of Washington. Captain James Cooper, R. N., gives the following general description of the Strait: "The geographical features of the Strait of Juan de Fuca are most important to the commercial interests of the Northwest Coast of America, carrying an average width of ten miles from Cape Flattery for fifty miles to Race Rocks, here in consequence of the American shore trending northward the breadth is contracted about two miles. From this point the Vancouver shore recedes in a northerly direction for nine miles towards Esquimalt, off which the Royal Roads extend for three miles offering to all vessels a splendid anchorage when required." Captain Devereux wrote of the Strait and the surroundings off its entrance: "Nowhere else on this coast are such soundings to be found. In fact, it is to the Strait of Juan de Fuca what the Banks of Newfoundland are to the Gulf of St. Lawrence, a safe and valuable guide to the mariner approaching the land in thick weather, and by attending to the lead and using ordinary precautions, the navigator can find his way into and through the Strait, as there is a deep water zone, 100 fathoms, running eastward mid-Channel until Race Rocks are passed, where it shoals to 60 or 70 fathoms. This deep water shoals rapidly to 20 fathoms about two miles off shore on both sides of the Strait, and at a distance of one mile 6 to 10 fathoms will be found and carried right up to the cliffs, as there are no outlying dangers except Race Rocks." I am aware that the entrance to the Strait and the Vancouver Island coast lying to the north and on the north side have been called "the graveyard of the Pacific," but it is safe to say that there is no disaster on record, which could not, if the facts were known, be traced to some fault either in the ship or those responsible for her safety, even when the safeguards to navigation were not equal to what they now are. With the existing aids to navigation the entrance to the Strait ought to be and doubtless is as safe as the entrance to any waterway in the world. A

well-found ship, efficiently officered, will find the Strait of Juan de Fuca not only free from exceptional perils, but one of the safest of all waterways.

It is obvious that the position of Victoria in relation to that great artery of travel described in the last article, namely, the Strait of Juan de Fuca, is one of very much importance. This city necessarily possesses for the purposes of deep sea navigation every advantage enjoyed by ports further from the ocean and is free from certain disabilities arising from more or less narrow and tortuous channels. It is no part of my purpose to decry the facilities afforded by other ports; my object is rather to set forth as best I can those which Victoria and other Island ports can offer. The only point upon which I am now laying stress is that Victoria is on the direct line of water traffic to and from the existing transcontinental mainland railway termini, and that all ships going either to the ports on Puget Sound or on Canadian waters must of necessity go by the Victoria route. How the advantage of this fact can be utilized to a greater extent than is now possible, is a matter for discussion later. Suffice it to say that Victoria regarded from the standpoint of ocean-going ships is more favorably situated than any harbor further within the inland waters can possibly be. Reference has already been made to the strategic position occupied by the southern end of Vancouver Island in connection with north and south traffic along the coast.

The Inland Waterway

Very pertinent to the strategic position of Vancouver Island in respect to commerce is the character of the waterway separating it from the Mainland. By many people an insular position is regarded as a disadvantage. Persons who will admit that, if Vancouver Island were connected with the Mainland by a broad isthmus, all railway companies would utilize that isthmus in order to reach the ports on or near the open ocean, find difficulty in believing that the existence of water channels is no real obstacle, if any good cause can be shown for crossing those channels. In selecting Burrard Inlet as the terminus of the Canadian Pacific Railway, the govern-

ment was influenced by several considerations, one of them being, as expressed by Sir Sandford Fleming, as follows:

"There is not at this moment any pressing necessity for the railway for ordinary purposes. For special reasons, however, the construction of the railway to the Pacific coast is demanded, and in the absence of traffic to sustain it, it becomes more than ordinarily important to adopt that route which will least involve the sinking of unproductive capital, and by which the loss to be borne in working and maintenance will be least heavy." Vide his report for 1878.

In his report for 1887 Mr. Fleming, as he then was, expressed the opinion that in the future, the project of extending a railway to the harbors on the western coast of Vancouver Island "would be seriously entertained," and in another place in the same report he speaks of railway connection with the Island as likely to be called for by the development of the Island. Therefore I feel warranted in saying that the fact that the Canadian Pacific Railway was built only to a terminus on Burrard Inlet was due to matters of policy only, and not because of any difficulties of an insurmountable character in extending it to an Island port. It is clear from the reports referred to that the only reason why the railway was not built so as to reach a port on the open ocean was that involved in the cost, and that the cost played a controlling part in the selection because of the absence of any prospective traffic. Times have change dsince 1878.

Vancouver Island is separated from the Mainland by a channel which varies in width from 38 miles opposite Cordova Bay, to 2 miles, which is the narrowest part of Johnstone Strait, geographical miles in both cases. This channel contains many islands, which at one point, namely, in the vicinity of Bute Inlet, subdivide it into a number of narrow waterways. From Nanaimo to the First Narrows of Burrard Inlet, that is the entrance to Vancouver harbor, the distance is 34 miles, and the course is unobstructed by islands. The distance from Ladysmith to the same point is slightly less, but owing to the interposition of islands near the Vancouver Island shore, the distance to be sailed may be a little longer. From Sidney, the terminus of the Victoria & Sidney Railway, to the same point

the distance is 40 miles, to English Bluff, south of the Fraser Delta, 32 miles, and to Semiamoo Bay, on the Canadian side of the Boundary line just north of Blaine, the distance is 33 miles (geographical miles are meant in all references herein to water distances unless the contrary is stated.) These distances have an important bearing upon railway connection between the Island and the Mainland. From Nanaimo northward the breadth of the channel has no bearing upon this subject, until Seymour Narrows is reached. Some little detail may be given with advantage in regard to this locality, because it may become a very important one in connection with the development of the Island.

I mentioned in the previous article that the great structural valley, of which the Strait of Juan de Fuca forms a part, might be considered as extending as far north as the head of Bute Inlet. This was because a group of islands, the principal of which is called Valdez, almost blocks the channel. Indeed one might almost say that this group is an isthmus, which has been cracked in several places to a great depth. The shore line of Bute Inlet measures somewhat less than 50 miles. Its shores are bold and precipitous and the water is deep throughout. Lying off its entrance are the Valdez group of islands, and the following are the widths of the waterways separating them from each other and from the continental shore on the one hand and the Vancouver shore on the other. The waterways are given in order from the continental shore and are as reported by Marcus Smith in his survey for the Canadian Pacific Railway:

At Arran Rapids.....	1,100 feet
Cardero Channel, 1st opening.....	1,350 feet
Cardero Channel, 2nd opening.....	1,140 feet
Cardero Channel, 3rd opening.....	640 feet
Middle Channel.....	1,110 feet
Seymour Narrows, 1st opening.....	1,200 feet
Seymour Narrows, 2nd opening.....	1,350 feet

These openings are all within a distance of 30 miles.

Lying north of the Valdez group of islands and south of Thurlow Island, is Nodales Channel, which extends without interruption from the continental shore at Frederick Arm to Otter Cove on Vancouver Island. The soundings nowhere show less than 40 fathoms. Of this waterway Sir Sandford

Fleming said: "This channel is reported to be free from strong currents, shoals or other difficulties, and could be used by a railway ferry at all seasons of the year. The length of the ferry navigation between Frederick Arm, on the main shore and Otter Cove on Vancouver Island is about 15 miles." The average width of the channel is less than two miles. North of Nodales Channel is Johnstone Strait, which for 45 miles has an average breadth of not more than three miles. I note in this connection an interesting fact. The northern shore of the strait for about half its length is formed by the continental shore line, which is here nearer Vancouver Island than at any other part of the coast, a matter which may prove of very great importance as will be seen later. Loughborough Inlet and Knight Inlet are separated by a tongue of land, which, near the head of the former, is only about seven miles wide, but widens out toward the sea, until on reaching Johnstone Inlet it has attained a width of nearly thirty miles. When Knight Inlet has been passed the waterway between the Island and the Mainland widens very considerable, until in Labouchere Channel, which is opposite Hardy Bay, it has attained a width of 15 miles, and this it maintains more or less regularly although broken somewhat by small islands, until Queen Charlotte Sound and the north end of the Island are reached.

Mainland Connections.

It will be well at this point to consider the possible means of connecting Vancouver Island with the continental railway system. While such a connection is not essential to the development on the Island of a large and prosperous community, it seems to be necessary to the full utilization of the resources and advantages of the Pacific frontier of the Dominion. Many persons are disposed to look upon the proposal for a better connection between the Island and the Mainland by railway than now exists, as not much more than a sentimental demand upon the part of the residents of the Island, but it is very much more than this. It is essential to the completeness of the Canadian railway system; it is essential to the welfare of western Canada; it is essential to the interests of the Empire. There is railway connection already, between the Esquimalt and

Nanaimo and Victoria and Sidney railways on the Island and points on the Mainland, but the connection is only incidental and does not form any part of the regular and permanent daily service of any railway system. Such as it is, it demonstrates, if demonstration were necessary, that the inland waterways can be advantageously used for the transportation of trains. As long ago as 1879 Marcus Smith wrote to Sir Charles Tupper, then Minister of Public Works, in regard to the Bute Inlet route:

"The difficulties of carrying railway trains across the Strait to Vancouver Island are greatly exaggerated by the opponents of this route. The Great Western and Grand Trunk railway companies have conducted a large traffic for 25 years by means of a ferry crossing a current of four to six miles an hour, and obstructed by ice in winter. Surely we can manage a smaller traffic with a ferry free from such drawbacks."

I quote this extract for the purpose of showing that in the opinion of one of the greatest authorities on railways in Canada, or anywhere else in America, thirty years ago, the waterway was not an obstacle to railway connection with the Island, as part of a transcontinental road designed for both military and commercial purposes. Since Mr. Smith wrote the Memorandum from which this extract is taken, wonderful developments have taken place in car-ferries, and there is no railway man, whose opinions are worth anything at all, who looks upon a ferry as an obstacle. The General Manager of the Pere Marquette railway, which operates car-ferries across Lake Michigan, a distance of 75 miles and more, once said to me in response to a question as to the cost of ferry transportation: "The Almighty makes the track for the car-ferry and keeps it in repair." I shall endeavor before concluding this series of articles to give some information on the subject of car-ferries. For the purpose of what is now to be said I shall treat them as of proved advantage for the carriage of trains, in places where for some reason a land line is inadvisable or impossible, and that the cost of transportation by ferry is not more—I think it can be shown that it is less—than by a similar length of land line.

But Vancouver Island can have, if ever it is found desirable, an unbroken line of rails to the Mainland. The only question is that of cost, and even Sir Sandford Fleming is on record as saying, in the year 1877, that "the exigencies of the future may render a line of railway to the outer shore of Vancouver Island indispensable." But for present purposes it is unnecessary to discuss the bridging of the seven channels mentioned in the last article, and I do not propose to take that into account at all, but to rely solely upon ferry connection until the demands of traffic necessitate the building of the necessary bridges. I am particular to mention this, because one constantly hears objections raised to the cost of the bridges, whenever the establishment of railway connection is spoken of.

I have frequently been asked by persons unfamiliar with the situation, and even by some residents of Victoria, if the tunnelling of the waterways at some point is not feasible. Such an expedient is wholly impossible. There is only one place where the distance is not too great to be a sufficient barrier to a tunnel, and that is where the tongue of land between Loughborough and Knight Inlets approaches the Island shore, and here the soundings show in mid-channel a depth of from 90 to 150 fathoms, that is from 540 to 900 feet. This of course puts a tunnel absolutely out of the question. If we cannot have a bridge, and this would be too costly to contemplate at present, we must rely on car-ferries, and happily there is no objection whatever to them.

Before dealing with the question of railway connection between the island and the Mainland, it may be advisable to make some observations concerning that part of British Columbia through which a railway, making connection with the Island at some point north of Seymour Narrows, would extend. If we take Fort George, where the Grand Trunk Pacific will cross the Fraser river, as a centre and with a radius formed by the distance from that point to Prince Rupert, sweep a semicircle towards the west, we will find that the line will pass down through the centre of Vancouver Island. The city of Vancouver will lie just within the circle and Victoria just a little outside of it. From this fact it follows that the

shortest way to the coast centres of population and open ocean ports from the greater part of the extensive and valuable region, lying between the Fraser and the Coast range and south of the Nechaco river, is by way of a route in the direction of Bute Inlet. This region is one of very great value. It contains a great extent of farming land, very large natural meadows and a still greater area of grazing land. Its mineral wealth is at present unknown, but the indications are favorable, especially near the Coast Range. It presents no serious difficulties in the way of railway construction. This observation applies to the country as far west as Lake Tatlayacoh, which is 145 miles by the Marcus Smith route by way of Bute Inlet from Frederick Arm. This route reaches tide water at the head of Bute Inlet, and therefore the only gradients to be taken into account are those between the head of that inlet and the Summit. The distance between these points is 94 miles and the elevation to be made is 2,760 feet, or 26.36 feet to the mile, which is certainly nothing at all serious, if it is at all uniform. The maximum grades are 105.60 feet to the mile, or 2 per cent. These occur in three places, one of them is 1.27 miles in length, another 6.67 miles and another 4.43 miles. These, of course, are all against east-bound traffic.

Of the head of the Inlet as a terminal Mr. Smith said: "The extensive flat at the head of Bute Inlet is favorable for the site of a large commercial town. There is fair anchorage and a commodious harbor could be made, if required, but probably a few wharves or slips would be sufficient at present, as eventually the railway might have to be extended down the side of the Inlet to meet the demand of increased commerce." He adds that the Inlet with the channels at its mouth could be used advantageously by car-ferries to convey trains to the shore of Vancouver Island. There is no doubt whatever of the practicability of the Bute Inlet route, and its cost would not be excessive if the construction of the bridges by way of Seymour Narrows were eliminated. If the line were extended to Frederick Arm, ferry connection with the Island would be maintained by way of Nodales Channel. It is interesting to note in this connection that in 1877 Sandford Fleming contemplated the use of Frederick Arm as a terminus for the

Canadian Pacific railway. He declared it to be approachable from the north side of Vancouver Island by Queen Charlotte Sound and Johnstone Strait and that ocean-going steamers would be able to reach it by open channels in less time than any port within the Strait of Georgia. What follows shows the line of thought pursued by an impartial investigator, when the mainland was practically all in a state of nature: "Waddington Harbor (the head of Bute Inlet), on the one hand would accommodate the traffic centering around the Strait of Georgia; or finding entry by way of the Strait of Juan de Fuca; whilst on the other, Frederick Arm would command the Asiatic trade, and accommodate the traffic of the northern half of Vancouver and of the Queen Charlotte Islands, when in course of time they become settled and their resources developed." The route chosen for the Canadian Pacific has led to the settlement of the region around Burrard Inlet, and consequently created new local commercial and political conditions, but the facts of geography are the same today as they were when Sir Sandford Fleming made his report, and the development of the use of car-ferries has been such that, when once a line of railway was brought as far as Frederick Arm, connection thereby would at once be established with Vancouver Island and the railway would be continued to the ocean ports of the Island, so as to avoid any navigation of the relatively narrow inland waters. Those who desire to see Vancouver Island connected with the Mainland by the Bute Inlet route may rest quite satisfied as to the perfectly feasible character of such a project, either from the standpoint of engineering or transportation.

A New Route Suggested

There is another route to be mentioned in this connection. In the last preceding article I spoke of the narrowness of the channel separating the Island from the Mainland between Loughborough and Knight Inlets, where Johnstone Strait is only about two miles wide. To this I wish to direct special attention. If one looks at the map he will see on the Mainland shore just opposite where the Island shore begins its decided trend to the west a small

indentation of the coast marked Blenkinsop Bay, and a little to the west of it another and larger one marked Port Neville. The Strait here is two miles wide. Blenkinsop Bay would seem to be ideal for the terminus of a railway seeking connection with a car ferry. It is more than a mile long, including the tide-flat at its head, and there is good anchorage shown upon the chart in from 6 to 15 fathoms of water. It is protected from all winds. The strait is unobstructed by rocks or shoals, and has a current varying from 1 to 3 knots an hour. My information is that in one of the several small bights along the Vancouver shore a good location for a ferry terminal can be found. The crossing of Johnstone Strait by a car-ferry would not be anything like as serious a matter as the crossing of the Columbia river by the Northern Pacific on its way to Portland from Seattle. If therefore a good route can be found from the Summit at Lake Tatlayacoh to Blenkinsop Bay or Port Neville, for the latter is also admirably adapted to be the terminus of a car-ferry, the question of Mainland connection would be simplified so far as the length of the necessary ferriage is concerned. I shall therefore speak in the next article of the probability of a good route being found from the Summit to Blenkinsop Bay.

Tatla Lake is the source of the Chilancoh river, a tributary of the Chilcotin. Its outlet is crossed by the Bute Inlet railway survey at a point 190 miles from Frederick Arm. The elevation there above sea level is 2,985 feet. Surrounding Tatla Lake is a grazing region, which I am told extends a considerable distance to the west, that is towards the source of the Kleena-Klene river, which flows into the head of Knight Inlet. The railway survey extends from this point south-west to Bute Inlet by way of the Homathco valley. I am informed that a much easier route and through better country would be found by going in a more westerly direction so as to reach the east fork of the Kleena-Klene river and by following this to the head of Knight Inlet. As far as can be judged from measurements on the map the distance from crossing of the Chilancoh to the head of Knight Inlet is shorter than to the head of Bute Inlet. In other words, it is represented to me that this is the shortest and easiest route through the Coast Range

to the coast anywhere between Burrard Inlet and the Bella Coolá. On the other hand the route which a railway would have to take from the head of Knight Inlet to Blenkinsop Bay, might be somewhat longer than from the head of Bute Inlet to Frederick Arm. The difference would not be great from the crossing of the Chilancoh to the point from which ferry connection would be made with the Island, and my information is that the whole route via Knight Inlet would be more favorable and less expensive than that via Bute Inlet. I find on looking at the chart, whereon I have noted information given me from time to time about this part of the province, that at the head of Knight Inlet there is a tract of good land estimated to contain about 10,000 acres. The railway would follow the eastern shore of Knight Inlet, and I note that the summits here are a mile or more from the coast. The shore is less precipitous than that of Bute Inlet and the shading on the charts is in keeping with what I am told by persons who know the Inlet well, namely, that except at one or two points railway construction would not be very costly. The road would follow the Inlet between 25 and 30 miles, or as far as Glendale Cove, from which point it would ascend a short river to Tom Browne Lake, at the head of which I find noted "good land." Thence the route would be across country to the head of Neville Inlet, where I also see "good land" noted, and thence by the most feasible route to Blenkinsop Bay. I am told that there are no serious obstacles in the way of railway construction from Tom Browne Lake to Blenkinsop Bay. The distance from the Lake to the Bay would be under 20 miles. The summits marked on the chart do not indicate a high average level, but on the contrary suggest the existence of low valleys between hills of moderate altitude.

Examination Suggested

I have given above such information as has been given me by the various people with whom I have discussed this possible route for a railway. Doubtless there are many persons who can cast a good deal of useful light on the subject, and I should be glad if any such would say if their information would, in their opinion, justify the examination of the route as

one whereby a railway can be brought "from the Plains of Alberta to the ports of Vancouver Island," to quote the report of the Royal Commission on Transportation. I am told that a reconnaissance survey, by a party of three or four people, one of them competent to take elevations, would occupy less than six weeks and would not cost more than \$600; but even if the cost would be greater than that sum, it might prove to be money very well spent, for if it disclosed such a route as I have been informed is available, the advantage of the information to the people of Vancouver Island would be very great indeed. If it is true, as I am led to believe, that a better route than that via Bute Inlet—which is not an objectionable one by any means—is to be found from the interior plateau of British Columbia to the sea coast, through a region where there may be 30,000 acres and more of land suitable to settlement, and reaching tide water at a point only two miles from the opposite shore of Vancouver Island, within a radius of 75 miles from which are several admirable ocean seaports, surely the fact is worth ascertaining, and if it proves to be a fact, surely it will have a very important bearing on the determination of future routes of transportation.

Some Comparative Distances

When railway connection with Vancouver Island is spoken of, and the question is regarded from the transcontinental point of view, it is necessary to select some point east of the Rocky Mountains as a centre common to competing routes. For this purpose I have selected Edmonton, and for several reasons. One is that the information accumulated during recent years as to the adaptability of the prairie region for colonization shows that the position of Edmonton is more nearly central than any point further south. Another reason is that Edmonton is already a point in common to three lines of railway, The Canadian Pacific, the Canadian Northern and the Grand Trunk Pacific. Three routes were surveyed by the Canadian government as available for the Canadian Pacific between Edmonton and the head of Bute Inlet. They all cross the Chilancoh at the same point, and hence would be utilized by a line of railway terminating at Blenkinsop Bay.

All these routes enter the province by way of Yellow Head Pass.

Route No. 1 was surveyed in 1876. See Report on the Canadian Pacific Railway, 1877, pages 261 et seq. It follows the Fraser northwesterly 181 miles (the route taken by the Grand Trunk Pacific), and extends from Fort George to Bute Inlet, the distance from Yellow Head Pass to Frederick Arm being 597 miles.

Route No. 2 was surveyed by H. P. Bell for the government of British Columbia in 1895. See Sessional Papers for 1896, pages 775 et seq. It follows the Fraser valley northwesterly 119 miles and thence extends in a general southwesterly direction to Bute Inlet, the distance to Frederick Arm from Yellow Head Pass being 528 miles.

Route No. 3 was surveyed for the Canadian Pacific before 1874, and for a summary reference to it reference may be made to the Progress Report for 1874, pages 18 and 19. It extends southerly from Yellow Head Pass to the Thompson River, which it follows until near the mouth of the Clearwater, and thence extends in a general westerly direction to Bute Inlet. The distance from Yellow Head Pass to Frederick Arm by this route is 605 miles. The distance from Edmonton to Yellow Head Pass is put by Marcus Smith at 251 miles. Hence we have the distance from Edmonton to Frederick Arm by these routes as follows:

Route No. 1.....	848 miles
Route No. 2.....	779 miles
Route No. 3.....	856 miles

These distances would not be greatly varied if Blenkinsop Bay was taken as the ferry point on a line from Edmonton to the ocean ports of Vancouver Island.

Sir Sandford Fleming, in his report for 1877, gives the following distance between the points mentioned:

Waddington Harbor to Quatsino	173 miles
" " Alberni.....	159 miles
" " Esquimalt.....	249 miles
" " Victoria.....	245 miles

I assume that in this estimate the outer harbor of Victoria and the head of Esquimalt harbor are taken. Alberni means the head of the Canal, not the outer harbors at Barkley Sound.

If these data are correct we get the following results, as the distance from Edmonton to the several points mentioned in the last preceding article:

From Edmonton to—		Miles
Quatsino	(Route No. 1)	970
"	(Route No. 2)	901
"	(Route No. 3)	978
Alberni	(Route No. 1)	956
"	(Route No. 2)	887
"	(Route No. 3)	964
Esquimalt	(Route No. 1)	1037
"	(Route No. 2)	968
"	(Route No. 3)	1045
Victoria	(Route No. 1)	1042
"	(Route No. 2)	973
"	(Route No. 3)	1050

If the suggested route via Knight Inlet and Blenkinsop Bay were adopted the distance to Quatsino would be reduced about 15 miles; but I do not think the distance to the other points would be lengthened, for the reason that between Otter Cove, where a ferry from Frederick Arm would land, and a point opposite Blenkinsop Bay the trend of the Island shore is nearly due west, and consequently the latter point is not any further from Victoria, Esquimalt and Alberni than the former point; moreover, the valley of the Salmon river, which extends due south from a point near where the Island terminus of the Blenkinsop Bay ferry would be, would doubtless afford a good route for a railway equally short with one following the Island shore line from Otter Cove.

I estimate the distance from Edmonton to Prince Rupert at 930 miles. By Route No. 2 mentioned in the previous article, if it were carried to Blenkinsop Bay instead of to Bute Inlet, the distance from Edmonton to Quatsino would be under 900 miles. The above statements of distance seem to indicate that a good route for a railway from Edmonton to the Vancouver Island ports, not materially different in length from that of the Grand Trunk Pacific to Prince Rupert is available for the transportation of the products of "the plains of Alberta" to the open ocean. I have endeavored to make these statements of distance as accurate as possible and submit them for the consideration of all persons interested in the great project of railway connection between Vancouver Island and the mainland. I shall take occasion before

concluding this series to check them up once more with the official reports. The distances as given above were compiled from those reports by me at the request of the Royal Commission on Transportation.

If reference is made to the table of trans-oceanic distances given in Article III. of this series it will be seen that the following distances are obtained, assuming that Route No. 2 (Mr. Bell's) is found to be available.

Edmonton to Yokohama—

Via Prince Rupert.....	4,800 miles
Via Quatsino.....	4,795 "
Via Alberni.....	5,012 "
Via Victoria.....	5,160 "

These distances of themselves determine nothing finally, for other considerations than the number of miles have to be taken into account in determining great transportation routes. They are valuable as a basis and an incentive to investigation and it is such only that I put them forward. What value they have consists in the fact that they are a part of the data bearing upon the question of the railway development of Vancouver Island. Proximity to the open ocean of terminal points, safety of approach, the character of the harbors, on the one and the character of the grades to be encountered by a railway, the general nature of the country which the railway would traverse, especially as to its ability to furnish traffic, the cost of construction and other consideration, on the other hand, have all to be taken into consideration, but this is not the proper place to enter upon the discussion of such of those aspects of the case, upon which I feel competent to express an opinion.

In the above statements of distances I have not considered two points on the Island coast, which ought to be taken into account in connection with railway construction. One of these is Hardy Bay, which is situate on the inner shore of the Island a little below the north end. This is a good harbor with an easy approach from the ocean, slightly nearer by land to the proposed ferries than Quatsino somewhat further from the open ocean. This is a port, which must be considered in any plans looking to the utilization of Vancouver Island as a connection between northern British

Columbia and Alaska, on the one hand, and the southwestern part of the province and the Pacific Coast states on the other. The other point is Nootka Sound, which is one of the best harbors on the whole Pacific coast, being easily accessible from the ocean and very capacious. My information is that a good route for a railway can be found from the east coast of the Island to Nootka, and if this is the case, that harbor is by no means a negligible quantity in the possible development of transcontinental and transoceanic traffic.

I take leave of the question of distances in connection with this subject, by drawing attention to a few facts which seem of importance.

Hardy Bay is within 20 miles, measuring in a straight line, of one half the distance between Victoria and Prince Rupert. Thus the steamer voyage between those points could be reduced by one-half, or nearly so, if a railway were built to Hardy Bay, which would mean that the two cities would be brought within 24 hours' journey of each other, and the same would be true of the journey to the Queen Charlotte Islands, provided direct communication were established.

There are no difficulties whatever in the way of the transportation of trains by ferry from Vancouver and other points in the southwestern mainland to points on the Island shore. By the present route of the Canadian Pacific the shortest possible distance from Edmonton to Yokohama is by way of ferry to Nanaimo and thence to Alberni and the distance would only be slightly over 5,000 miles.

Ladysmith and Sidney on Vancouver Island afford excellent termini for car ferries from Vancouver, the mouth of the Fraser, English Bluff and the Semiahmoo Bay. The length of these ferry routes has been given already and need not be repeated.

It has been pointed out to me that if the Knight Inlet route were adopted by a railway company, it would perhaps be found advantageous to continue the line along the shore of the Inlet further than Glendale Cove, as has been hereinbefore suggested, crossing the narrow and shallow channel separating Chatham Island from the Mainland and the canoe

channel between that island and Cracroft Island, making the terminus on Baronet Passage, whence a ferry could run to Beaver Cove, a distance of five miles. This is the furthest point north on the Island to which it is suggested that a ferry could be advantageously run. It is not far south of the mouth of the Nimpkish river, from the mouth of which a feasible route for a railway can be found to Hardy Bay and Quatsino to the north to use the colloquial expression, although the direction is not very much north of west, and southward to Nootka, Nanaimo and Alberni. I find this note on my chart of Cracroft Island: "About 20,000 acres of good farming land."

Resources of the Island

Before passing on to the consideration of the arguments in favor of the railway development of Vancouver Island, it seems desirable to consider in some detail its resources, its capabilities as a home for settlers and for the development of industries and the creation of traffic for railways. Railway connection with the Island may come about owing to the exigencies of the growth of west-bound traffic from the interior of Canada; but if it can be shown that local business of magnitude can be built up here, the desired connection will come about more quickly than otherwise. It seems important that we should place ourselves in a position to show to the transcontinental railway companies that the agitation for Mainland connection is not inspired only by a desire of the people of the Island to bring to their ports traffic which would otherwise come no further than Mainland ports, but by the conviction that the Island is of vast importance from the traffic-producing point of view. I believe it is so much so that, if the matter would be thoroughly understood, it would no longer be necessary for us to seek to persuade the railways to come here, but that there would be competition between them to be the first to take advantage of the available opportunities for creating traffic. In what I am about to say there may not be much that is new, but I am not aware that it has ever been put together in a form available for convenient reference.

Vancouver Island has, as already stated, an estimated area of 15,000 square miles. Nothing conveys a better idea of magnitude than comparison with other countries, so a few are appended.

The Island is substantially of the same area as the Province of Nova Scotia, exclusive of Cape Breton.

It is substantially of the same area as Switzerland.

It is twice as large as Wales.

It is as large as Denmark.

It is 25 per cent. larger than Holland.

It is 30 per cent. larger than Belgium.

It is 60 per cent. larger than either New Hampshire or Vermont.

It is nearly twice as large as Massachusetts and larger than Massachusetts, Connecticut and Rhode Island combined.

It is only a little smaller than New Jersey, Delaware and Maryland combined.

It is nearly half as large as the Oklahoma, nearly half as large as Indiana and one-fourth as large as the neighboring state of Washington.

From Victoria to Cape Scott is as far as from Montreal to Toronto; as far as from Montreal to the mouth of the Saguenay river; as far as from Quebec to St. John.

In acres the Island is not much under 10,000,000, including the adjacent smaller islands, which may properly be taken into account in this connection.

Here let me correct a very common error. It is often said that the E. & N. Railway owns nearly one-half the Island. This is an error and a very serious one, because it has led many people to suppose that the development of the Island means chiefly the development of the lands of a private corporation. The E. & N. grant originally contained approximately 2,000,000. Of this a considerable part has been alienated. It is doubtful if more than one-sixth of the entire area of the Island is the property of that company.

The above comparisons are full of significance. The people of British Columbia have grown so accustomed to great areas, and the people of Canada have thought in terms

on continental dimensions so long that they have overlooked this compact, yet extensive treasure house, lying off the coast. I have given the several comparisons as above for the purpose of concentrating attention upon the really great work which the Vancouver Island Development League has undertaken.

I will continue the comparison a little further so as to show the relative magnitude of the Island in comparison with certain parts of the Mainland.

Measuring in a straight line it is as far from Victoria to Cape Scott as from Vancouver to Rossland or as from Vancouver to Revelstoke. It is only about one-sixth less than the distance between Yellow Head Pass and the International Boundary. At its greatest width the Island is as wide as from Sicamous to Penticton, or from Vancouver to Chilliwack. These facts show that simply from the territorial point of view Vancouver Island is worthy of the best consideration that can be given it by those upon whom rests the responsibility of promoting the development of the country.

I do not think it any exaggeration to claim that in point of existing sources of unexploited wealth, Vancouver Island is unsurpassed by any corresponding area anywhere on the globe and is equalled by very few, if any. Its wealth is present, awaiting utilization. Some of it, that is such as is hidden in the rocks, is the product of ages of geological action. That which encumbers the soil is the product of centuries of growth. The vast products of the forces of nature stand ready to hand. The world wants them. It seems to be our duty to provide ways and means of supplying the world with them.

Reference has been made to the by-products of Island timber. One of the leading lumbermen of the United States, who is a large holder of timber lands on the Island, said to me recently that the by-products of our forests would prove a source of great wealth. He laid special stress upon the value of the hemlock bark for tanning, and said that he himself was inclined to urge the introduction of extensive tanneries in connection with the development of his own properties, as he had done in the state where his operations have

hitherto been carried on. Very little consideration has been given to the potential value of our hemlock bark for tanning purposes.

The manufacture of turpentine is carried on upon almost an unlimited scale on the Island. Experiment has demonstrated the fitness of our wood for the manufacture of this article, and in the course of its production other valuable by-products are formed.

It is not strictly correct to speak of the manufacture of pulp and paper as a by-industry, because in certain lines of pulp-making the timber is taken directly from the forest; but for certain other lines only refuse is used, and this kind may be called a by-product. The amount of wood on Vancouver Island suitable for the manufacture of pulp and paper, without materially entrenching upon the growth adapted for milling purposes, is incalculable, but it is known to be very large. The market for pulp and paper is growing with amazing rapidity, and there is no line of manufacture which is more certain to yield great profits. In addition to the markets of Canada and the United States, the Orient makes a great demand, and it is one that is certain to increase. All the world over the consumption of paper is advancing at a remarkable rate. There are other uses to which the refuse of saw mills can be put, such as the manufacture of certain utensils. Indeed the variety of purposes to which wood pulp can be advantageously applied is becoming steadily greater. Vancouver Island has in this line of industry a field for exploitation which will become the basis of great prosperity, and will furnish traffic to transportation lines, building up cities and towns on the Island and leading to the utilization of every available acre of agricultural land.

Agriculture on the Island

Perhaps no part of the world has been the subject of greater misrepresentation in respect to its value from an agricultural point of view than Vancouver Island. In the last issue of the *Encyclopaedia Britannica* it is thus described: "While limited areas in the southeast of the island and in the inland valleys are well adapted to agriculture

(about 300,000 acres in all) and while farming is carried on to some extent, the country is too mountainous ever to develop agriculture on a large scale. Cereals of all kinds, all fruits of the temperate zone, pulse and vegetables flourish on the patches suited to agriculture, while cattle and sheep can easily be reared in small numbers." The same work, describing Nova Scotia, says rightly enough that it is a "valuable agricultural country and enters into great detail as to its productiveness, yet Vancouver Island is fully equal to Nova Scotia in this respect. The New International Encyclopaedia in its description of the resources of the Island wholly disregards agriculture and describes the climate as "damp and raw." Chambers' Encyclopaedia says the Island is barren. These descriptions are not a matter of surprise, for it is not very long since the residents of the Island themselves declined to believe it had any agricultural capabilities worth mentioning. When I first visited Victoria, which was in 1892, I came for the express purpose of ascertaining what the character of the Island was in respect to its development by railways, and I found no one who would say much in its favor from the standpoint of farming. One of the most important things to be done in the interest of Island development at the present time is to dispel the erroneous ideas prevalent regarding its agricultural capabilities.

We are without as much information on this subject as could be desired, but more and more is being accumulated from time to time, until even the most skeptical are convinced that the cultivation of the soil will become one of the most valuable of all our industries. I shall first, in the description that I am about to undertake, give such official information as is within my reach. If any who reads what is herein said can supplement what is published, I hope they will do so. I take excerpts from the Report of Messrs. Hermon and Hawkins, to be found in the Sessional Papers for 1892, page 395.

Speaking of the country lying in the extreme northern part of the Island, they say "To the north of this range of hills is a belt of grazing land." The reference is to hills near Quatse Lake. In township 20 is "an extensive valley," and

in townships 23 and 35 another similar valley containing 1,000 acres of good land. "A large valley extends westerly from West Arm to San Josef river, which may be found suitable for agricultural purposes." The opinion expressed in regard to this valley has since been confirmed by settlers. From Township 37 the land slopes gradually to the sea and is level. On Township 32 is a large valley similar to that between West Arm and San Josef river. On the south side of Quatsino Sound "what appeared to be large fertile valleys extending into the interior were observed." Township 8 and a part of Township 9 are "covered with a sparse growth of scrub timber, giving them a park-like character with a fine growth of grass suitable for grazing purposes, with here and there swamps and ponds that could be easily drained." Township 28 consists of low rolling hills covered with a scattered growth of scrub timber, supporting a luxuriant growth of succulent grasses, eminently suited for pastoral purposes." I quote from the report in extenso in relation to the area north of Quatsino Sound:

"The surface presents a beautifully diversified appearance when viewed from the high lands in the southwest portion of Township 21, and which is aptly described by Mr. Forbes in his essay on Vancouver Island:

"Stretching into the heart of the country, lying along the bases of the parallel ridges of trappean rock, are numerous lakes, in some cases forming a continuous chain. Others, solitary, lie embosomed among the mountains and form a beautiful feature of the landscape, among the rocky pine-clad hills they lie, clear and calm, fringed by the willow, the alder and the trembling aspen, the tender green of the foliage brightly, yet softly, reflected in the sunshine from the watery mirror, while reaching across, as if to grasp the light, the dark purple outline of the shadow of the frowning peak, envelopes the farther side in gloom.'

"From the highland above noted a very extensive view of the country, lying to the west and north was obtained, and it appeared to be a low, rolling country, as far as the eye could reach.

"From our observations it is estimated that a very large and valuable tract of land, highly suitable for pastoral purposes, requiring only a comparatively small expenditure to render it fit for immediate occupation, lies in this part of the district, the area being well watered and easy of access.

"The soil on the portion described is a vegetable loam, having a depth of from one to three feet and resting upon bed rock.

"The snowfall is probably less on this portion of the Island than farther south, owing to the influence of the Japan current and the low altitude of the country.

"In recapitulation we would place the amount of arable lands explored at 50,000 acres, pastoral lands explored, 50,000 acres; pastoral lands unexplored, 100,000 acres.

"Further developments will probably reveal mineral wealth, which combined with the particularly favorable facilities for ocean shipping, will give to this section of the province an importance little thought of at present."

This description is of the part of the Island which I do not suppose one person out of a hundred has ever considered in connection with agricultural development.

I shall not attempt to make any estimate of the standing timber on Vancouver Island, and the value of our forests as the basis of great industries and the origin of an enormous railway traffic. For this there are several reasons, and reference to them may be advisable because they have a bearing upon the future. No one can estimate within several hundreds of thousands of acres what part of the area of the Island carries merchantable timber. Speaking in a general way it may be said that the whole Island, where it has not been cleared for the purposes of settlement, or where fires and lumbering operations have not denuded the land, is timbered, but there are certain barren areas as well below as above the snow line. The average growth to the acre greatly varies. There is a wide margin between the classes of timber which cruisers consider as merchantable, and experience of all countries shows that in proportion as timber is cut away the grades that were rejected in the first place become more valuable. It is also impossible to form any useful estimate

of the addition to the timber of commerce, which will result from growth. I have at hand a memorandum prepared for the Victoria Board of Trade by the promoters of a railway from Victoria to Barkley Sound parallel to the Strait of Juan de Fuca. This estimate says that here would be tributary to such a road 652,165 acres of timber land, carrying an estimated quantity of more than 19,000,000,000 superficial feet of merchantable timber. The estimate does not say what is the minimum size of timber considered in making it. This is sufficient to supply saw mills cutting 1,000,000 feet a day for about 70 years and would supply sufficient manufactured lumber to load three full trains daily for that time, without taking into account any articles manufactured out of the sawn lumber or any by-products which might result from its manufacture. It also takes no account of the growth of the timber, nor of the results of reforestation, natural or artificial. It simply takes the situation as it exists today and is based upon the supposition that the supply will never be added to by any means whatever.

There are other areas on the Island where the timber is quite equal, and possibly in some of them for smaller areas superior to that growing in the district just mentioned. I only take this one as an illustration because the estimate happens to be available. In this connection I quote from the address of Mr. W. J. Sutton, delivered before the Vancouver Island Development League on January 22, 1909:

"Vancouver Island was covered with a heavy growth of timber. This was one of the reasons why development has been slow at first. The timber, while a great asset, had delayed settlement. The soil was very fertile. Vegetation grew rankly and trees required but little soil upon which to thrive. The woods of the island, in order of their importance, were as follows: Douglas fir, red cedar, hemlock, spruce, balsam, yellow cedar, alder, white maple, oak, white fir, white pine, arbutus and dogwood. But the principal wood of the entire island is the Douglas fir and its habitat was from Victoria at the extreme south to the neighborhood of Karmutson Lake. From there north the red cedar is predominant, though it is also common amongst the fir in the district at first referred to.

It goes up as far as San Juan and from there the spruce is found most frequently. Along the coast of the Pacific cedar and balsam is the chief tree as far north as Barkley Sound and Quatsino. Fir reaches its maximum size up to an elevation of 2,000 feet, but then grows smaller and the hemlock comes in.

"He did not wish to appear to be discriminating in favor of any one district, but he might say that the finest area of fir was in the neighborhood of Cowichan Lake. There is no place in the world where finer timber than the timber of this district grows. He knew of a clump in the neighborhood of Robertson river amounting to 12,000 acres which went 300,000 feet to the acre. Fine straight timber, it grew so tall that it wearied the eyes and neck to look up at it and it was of bole so great that, as the saying went, it took three men and a boy to see the top. He believed that the average of the island's good timber would go about 50,000 feet to the acre.

The wanton destruction of the island's timber resources is lamentable. The lumbermen had taken only the choicest portions. In one case near Cowichan pre-emptors had set fire to a tract of cedar carrying 100,000 feet to the acre—and called it "improvement." The public little realized the value of these magnificent trees, that had taken centuries to mature, ten centuries, some of them. A large cedar might take 1,000 years to mature, five hundred years to decrepitate, and even after it fell it would take hundreds of years to decay.

The principal habitat of the red cedar is the west coast. As one receded from the coast this wood decreases and the fir is more extensive. The climate had much to do with this. At Barkley Sound it is rainy, while Alberni is much more dry. The nature of the underlying rocks also was a feature in determining the nature of the timber. As a rule limestone goes with cedar.

A Vast and Exhaustless Supply

Assuming that a reasonable conservatism is exhibited in the cutting of the Island timber, that adequate steps are taken to protect it from fire and foster the growth of new trees, it may be said with confidence that the supply of timber is not only vast but exhaustless. In considering this matter the custom

has been to regard the timber output of Vancouver Island only in the first stage of its manufacture from the logs. Little has been said, and possibly very little has been thought about this rough lumber as it comes from the mills being made up into some of the many varied forms in which it will afterwards be used. I am unable to believe that Vancouver Island will continue indefinitely to ship rough lumber; or a manufactured product only one stage in advance of it. The many water powers existing on the Island will surely be utilized to the full bye and bye. With great deposits of iron adjacent to the greatest timber lands in the world, it is certainly not unreasonable to contemplate the establishment of great industrial plants for the production of those articles, into the composition of which iron and wood largely enter. Concerning the value of the Island timber, I quote from an interview with Mr. T. W. Paterson, a man of experience in railway matters and lumbering, published in the *Colonist* on July 9th, 1907. Speaking of railway connection with the Mainland, Mr. Paterson said:

"It is demonstrable that a line of railway from Vancouver Island to the Northwest would pay from the start if it did not carry a pound of freight east except timber nor a single passenger."

The wide distribution of the timber is a notable feature. It is difficult to say where it attains its greatest size. Messrs. E. B. Hermon and A. H. Hawkins, provincial land surveyors, in their report of a survey near the north end of Vancouver Island say: "Red cedars 11 feet in diameter were frequently seen; yellow cypress, 4 feet; hemlock, 6 feet, and spruce in one instance 11 feet in diameter by measurement.

Messrs. Hermon and Hawkins continued their survey of Vancouver Island in the year 1892, and their report will be found in the Sessional papers for 1893. Their investigations were confined to the region around Shushartie Bay, which is very near the northeastern end of the Island. In their report they speak of the slope of Shushartie Saddle Mountain, an elevation 1,900 feet in height, the slopes of which are gradual, lightly timbered and beautifully grassed, while on the summit

there is a fine open plateau covered with luxuriant grass. In their detailed description that speaks of a rolling country with valleys of good grazing land, of other valleys of farming land, and summing up their observations for the year they say that they have examined 143,180 acres of grazing land and 12,740 acres of farming land.

Some Useful Comparisons

Here it may be advisable to make a comparison, which readers can have in mind in considering this and the other parts of the Island to be hereinafter referred to. In their two reports Messrs. Hermon and Hawkins speak of 62,740 acres of farming land and 343,180 acres of pastoral land, either explored or unexplored, the explored area of the latter being 243,180 acres. This land, be it remembered, is all or nearly all in the region north of Quatsino Sound. As has already been said it is a part of the Island to which very little attention has been given by those persons who have interested themselves in its future agricultural development. What proportion of what is classed as pastoral land will be found suitable for farming, I will not undertake to say. I notice that the surveyors themselves contemplate that much of it will be to some extent at least, but I will confine myself to the consideration of what is reported as farming land, that is an area of 62,740 acres. On referring to the Census of 1871, which went much more fully into details than any subsequent Census, I find in the province of Nova Scotia the following counties with a similar or less acreage under crop than is available in the part of Vancouver Island referred to:

Hants: In crop 50,252 acres, in pasture 69,391 acres. Population 21,301.

Annapolis: In crop 66,741, in pasture 75,804. Population 18,121.

Digby: In crop 60,273, in pasture 37,571. Population 17,037.

Yarmouth: In crop 22,491, in pasture 26,826. Population 18,550.

There are indeed only four counties in Nova Scotia out of nineteen that had in that year an acreage in crop as great

as is available in the very northernmost section of Vancouver Island, and none of them had anything like as great an area of available pasturage.

Of the fourteen counties of New Brunswick only five had a greater area in crop than 60,000 acres, and none of them had 100,000 acres in pasture. Some of the counties of that province with very considerably less arable land under crop than 50,000 acres and very little more in pasture, had in that a year a population of upwards of 25,000.

The majority of the counties in Quebec had about the same acreage in crop as the majority of the counties in Nova Scotia and New Brunswick and about the same relative area in pasture, and their population ranged from in many cases from 15,000 to 20,000.

In Ontario twenty counties had only as much or less land under cultivation than is fit for agriculture in the Island area now being considered, and very much less in pasture, and yet sustained agricultural populations of 12,000 and upwards.

To me these comparisons are full of interest and encouragement. Just here a few words as to what is usually taken into consideration by explorers in new countries, when they are estimating available farming land. They almost always confine themselves to bottom lands or lands lightly timbered, and hardly ever take into account the slopes of the hills. I asked Mr. Mohun, whose exploration will next be referred to, what he took into account in his estimate, and he gave me a statement very similar to that which I have just made.

Farther Explorations

Mr. Edward Mohun's exploration was made in 1872, and was almost forgotten by the Crown Land Department, so much so, indeed, that an official, who went over the ground later, said that he supposed they were in a region where no white man had ever penetrated, until one evening they saw, what looked like an old "blaze" on a tree, and upon scraping it off, found Mr. Mohun's name. Mr. Mohun went over the region north of what is now the Esquimalt and Nanaimo

Railway land and south of the Nimpkish river. He found very considerable areas of good land. Thus he speaks of 6,000 acres on the Karmutzen river, above the canyon, which would be easily cleared and readily drained, extending along the river for 35 miles. What there may be in the way of land suitable for tillage, after the timber has been cut off at a distance from the river, Mr. Mohun was unable to say. He found good land around Alooza Lake, although it is subject to floods, which possibly could be remedied by opening the river channel. On Tsoulton creek he found "a beautiful little valley of 1,500 acres" being a chain of grassy prairies separated from each other by groves of light timber, and the soil very fertile. On the Adams river he found detached alluvial flats of from 100 to 350 acres each, about 4,000 acres in all, very fertile and readily cleared. Of the valley of the Salmon river he says it is 20 miles long, and about a mile and a half wide, "containing at least 40,000 acres of land of very superior quality," with good pasturage on the lower elevations. Mr. Mohun says that he has in all cases been careful to underestimate the arable area.

I find that Mr. D. T. Thompson surveyed Township 1, near the Nimpkish in 1892. His reports will be found in the Sessional papers for 1893, and it shows that the Township is substantially all excellent land for farming. A Township contains 36 square miles, or 22,040 acres, but Township 1, referred to by Mr. Thompson, is reduced by the trend of the coast line to about 10,000 acres. Before passing on to consider other parts of the Island reference may be made to the land on which the Cape Scott Danish colony was located some twelve years ago. The report of Mr. Ernest A. Cleveland, made in 1897, shows that here is a considerable area of good farming land in that locality. He says that the section of the Island examined by him is "better adapted for dairying and stock raising in connection with the development of deep-sea fishing, than for any other purpose." In the report of Mr. J. H. Grey on a line of railway to Port Rupert, he says that there would be tributary to it about 140,000 acres of arable land. I am loath to make estimates, but it seems not unreasonable to suggest that from Salmon River to Cape Scott,

and including only that part of the Island, south of Quatsino Sound, which lies east of the central highland, there has been ascertained to be an area of not less than 200,000 acres of land suitable for farming and 250,000 acres suitable for pasturage, not including any of the heavily timbered land on the slopes of the mountains.

The area granted to the Esquimalt and Nanaimo Railway Company having been set apart in 1884 no provincial surveys have been made within its limits for the purpose of reporting upon the value of the land. There is some information to which I shall refer later in regard to this part of the Island, but at present I am confining myself to the reports of persons who have been sent out officially.

The Southern End

So far I have given the official information available in regard to the northern part of the Island, and I think have shown that from the standpoint of the farmer and the stock raiser it presents many very favorable features. I will now speak of the southern end of the Island, namely the part of it which lies along the Strait of Juan de Fuca and as far west as Barkley Sound, but south of the summit of the watershed in which the rivers flowing into the strait have their rise. This area may be stated approximately to be 80 miles long with an average width of possibly 15 miles. In referring to it above in connection with the timber, I spoke of an estimate which stated that 652,165 acres would be tributary to a line of railway. This is only an approximation, and I am told was purposely placed within the probable maximum. A few comparisons may be interesting in this connection. The area now under consideration is considerably larger than the State of Rhode Island, two-thirds as large as the State of Delaware and considerably more than half as large as the Province of Prince Edward Island. There have been several exploratory surveys of this area.

Mr. S. P. Tuck in 1891 examined the country drained by the Nitinat, which is a river flowing into a lake of the same name, the latter being united to the sea by a short stream,

coming to the coast about 20 miles east of Cape Beale at the entrance to Barkley Sound. Of the land at the confluence of Vernon Creek and the Nitinat, he said:

"At this point the land is fairly level and good, with a growth of very fine timber, and presents a fine situation for building purposes, and a good water power, with an ample supply for all seasons for lumbering and other manufacturing purposes and a large quantity of good timber." Mr. Tuck said that up the valley of the Nitinat the land continues to be fairly good, the valley being a mile and more in width in some places, but in other places very much narrower. It is to be noted that Mr. Tuck, like all other explorers of a decade and more ago, rejected everything but the lands in the valleys. This was the practice on this coast at that time. I remember being told by a leading farmer of the State of Washington that there was no farming land in that state or this province except in the valleys, and I have since seen, as almost every one else has seen, fine farms established on the lands that were thought to be useless for agriculture. When Mr. Tuck was exploring the upper Nitinat, he heard of some intending pre-emptors going into the lower part of the valley and having obtained permission from the government, he discontinued his work where he then was and went there. Of the land in that locality he says: "These lands of the Nitinat, while not of great width nor very extensive, are very rich and productive, and offer many inducements to prospective settlers. The soil is a sandy loam of considerable depth and richness and apparently very productive."

Mr. T. S. Gore in 1891 examined the land in the San Juan valley. He estimated that there were 8,500 acres of excellent land there and about 800 more in the Gordon, a tributary of the San Juan. Mr. R. Gallop, who examined this valley last year, said in a letter to the Colonist: "The valley of San Juan is one of the largest on the Island, being two miles wide and ten miles long, containing about 10,000 acres of the finest land in the world. The soil is a rich black loam, from six to ten feet deep, all irrigated by numerous mountain streams." A number of settlers went into this valley some years ago, but the absence of means of communi-

cation caused them to abandon their holdings. This region can only be satisfactorily opened by a railway.

Some time about 1891, Mr. Henry Fry explored the San Juan country. He reported generally that "it slopes gently towards the coast and can be easily cleared and drained. The country is flat and marshy." Between San Juan and Providence Cove the land is flat, and he says that the Indians reported a considerable area of good land six miles up the Sambrio river. He adds that the country along the Jordan river does not contain much good land, but thence to Muir Creek the land is flat and the section "will prove one of the most thriving communities on Vancouver Island."

Earlier Explorers

I find in the Legislative Library a number of very interesting pamphlets bearing on the natural conditions of Vancouver Island, which the Librarian has been diligent in collecting. There is one which ought to be in the collection, but is not. It is quoted by several of the surveyors as "Forbes' Essay on Vancouver Island." If any reader of these articles has a copy of it, he would confer a favor by allowing me to see it. Nearly forty years ago a great deal of interest was manifested by the people of Victoria in the possible development of the Province and prizes were offered for the best essays. I find much of interest in these essays, but nothing that has not been repeated and augmented in subsequent official reports. It may be noted that the Vancouver Island Development League had a prototype in an organization called the Vancouver Island Exploration Committee. It was organized in 1865, and at the head of it was Dr. Robert Brown. I make a few extracts from the report of this exploration. Mr. P. J. Leech, after whom Leech river is named, says that he found considerable good land on the Nitinat and a tract of 1,000 acres of excellent land at Sarita. He also speaks of "a large plain heavily timbered between the Nanaimo and Chemainus rivers, and adds, "I have no doubt but there is good agricultural land in this plain." Dr. Brown went from Comox to Alberni by way of Ash Lake. He says: "On this trip we passed over much timbered land

fit to be brought into cultivation and a new and easy route for a wagon road connecting the east and west coasts of the Island." Dr. Brown was greatly impressed with the valley of the Courtenay, which he described as likely to be, as it has since become, a veritable garden spot.

With the following extract from Mr. William Ralph's report on the survey of the western line of the E. & N. Railway grant, I concluded what official information I have as yet been able to obtain concerning the agricultural resources of the Island. More may be available, and if so I shall use it later. Mr. Ralph, speaking of the view from an elevation near Buttles Lake says he saw a level country lying towards Seymour Narrows, Campbell River, Cape Mudge and Comox. He also notes "a continuous low pass across Vancouver Island, from the mouth of Campbell river to the waters of Nootka Sound by Elk river, a branch of the Campbell."

Some Settled Districts

The following description of the agricultural capabilities of Sooke district in the southern part of the Island is from the pen of Mr. Thomas Murray and is reprinted from the Colonist of December 13, 1908:

"Having touched briefly on the scenery and some of the potentialities of the place we now come to its chief attraction in the eyes of the agriculturist, viz., the land. Beginning about half way up the Harbor, at a place called Kaplor's Bay (where the Sooke oysters come from) and extending in an unbroken tract to the shores of the Straits, a distance of six miles, lies a stretch of land amounting to over four thousand acres, which for richness of soil cannot be excelled on the Island. Much of this land is cleared and cultivated and where proper methods have been employed and the necessary care taken, the results have been such as to satisfy the most exacting, the rich soil being well supplied with humus and having a clay subsoil retains the moisture so that when the pasture on lighter and gravelly land is burned up with the drought of summer, the grass and clover in this district remains fresh and green, thus making dairying a profitable industry here, though the long distance from the nearest creamery is a great

drawback to the dairyman. The ease with which clover is grown and its presence over the whole district makes this an ideal place for bee-keeping, the excellence of Sooke honey being well established by the prizes awarded to it at several agricultural shows."

Lying between Sooke and Victoria are the sections known as Metchosin, Happy Valley and Esquimalt. I have no available data from which to estimate accurately the area of arable land in this part of the Island, but it is very considerable and admirably adapted to fruit-raising and general farming. At this point it may be useful to quote from a pamphlet by Mr. Gilbert Malcolm Sproat, written in 1872, in which he gave some statistics said to have been compiled from the *Colonist* of August 7th, 1872. (The date must be a misprint, for I do not find any such statistics in the *Colonist* of that date):

Estimate of agricultural land on Vancouver Island:

Near Victoria.....	100,000 acres
Saanich.....	64,000 "
Sooke.....	3,750 "
Cowichan.....	100,000 "
Nanaimo.....	45,000 "
Comox.....	50,000 "

Mr. Sproat's estimate of Saanich is somewhat indefinite because it does not give any indication of the boundaries of the district included in it. The Saanich Peninsula is really, geographically speaking, that part of the Island which lies east of Victoria Arm, Finlayson Inlet and Saanich Arm. It is about 22 miles long and has an average width of perhaps 6 miles. Its area is probably under 90,000 acres, and out of it must be taken the city of Victoria and its residential suburbs. What proportion of this is fit for agriculture in one form or another cannot be stated with accuracy, but substantially the whole of it can be utilized either for cultivation or pasture. I quote from a writer in the *Colonist* of last December 13th:

"In fact, for fruit-growing in all its branches Saanich ranks high among the districts of southern Vancouver Island. On account of its great area of tillable land and the large number of progressive farmers who have settled there,

Saanich alone produces a very great proportion of the fruit grown in this end of the Island. Not alone in fruit, but in all sorts of agricultural produce as well the district gives place to none."

I quote the same writer's description of Cowichan, which is one of the most interesting parts of the Island:

"Cowichan Valley, or district, is situated on the eastern slope of Vancouver Island, and generally speaking, it includes all the country lying between and including Chemainus on the north and Shawnigan Lake on the south, and all the region drained by Cowichan Lake and river, as well as that drained by the Chemainus and Koksilah rivers.

"It will thus be seen that the valley is very extensive and diversified, the western portion around Cowichan Lake being very rugged and mountainous and covered with a heavy growth of the finest timber to be found in British Columbia. But even among those wooded mountains there are many grassy glades and glens, now roamed over by deer and elk, that will eventually make the finest fruit and dairy farms imaginable, and all around the shores of the lake and along the upper part of the river are many fine tracts of land that are only awaiting the coming of the railroad bringing the settlers to develop as fine homes as any to be found along the line of the E. and N. with the added advantage of beautiful surroundings and close proximity to those haunts of wild game that will never be invaded by civilization, as well as nearness to the finest body of water for fishing and boating to be found the wide world over—the famous Cowichan Lake.

"Cowichan Lake is the largest and deepest lake on Vancouver Island, being twenty-two miles long.

"The natural wealth of this part of Vancouver Island is beyond estimation, for beside the heavy growth of timber with which the mountains are covered, it is well known that many valuable mineral deposits exist in that region which, like the timber and the agricultural land, are awaiting the coming of the railroad."

This splendid district has never failed to elicit the admiration of all persons who have visited it. Dr. Forbes in his Essay lays great stress upon its future value. Mr. J. Despard

Pemberton, Surveyor-General of Vancouver Island, writing in 1860, had this and other areas in mind when he said: "Plains at intervals are found extending to Cape Mudge, that is 150 miles measured along the coast," and after speaking of their fertility added: "The capabilities of the Island to support a large population is admitted." The agricultural area directly tributary to Nanaimo is put by Mr. Sproat at 45,000 acres, but I am satisfied that it is considerably larger. A very interesting experiment has been tried in the neighborhood of that city in the clearing of "five-acre farms," for the miners employed in the coal mines there. These small farms have proved to be everything that was expected of them. They demonstrate not only the value of the soil of Vancouver Island, but also show how comparatively small an area will prove sufficient for the support of a family. On this point I again quote from the writer in the Colonist:

"No mention of Nanaimo would be complete without reference to the district round about it. On the outskirts of the City are what is known as the Five-Acre Homesteads, well laid out, tracts of five and ten-acre lots originally taken up by miners. So productive is the Island soil that many of those who took up these tracts of land have now retired from the mines, and are making a comfortable competency from the cultivation of these plots. The district contains much acreage yet uncultivated."

From Nanaimo northward extends a scattered settlement but there is a good deal of land suitable for agricultural purposes. When Union Bay is reached the beginning of an exceptionally fine agricultural district is encountered. This is usually referred to as Comox, but the name properly applies only to a part of the region. There is perhaps no farming land in North America superior to that of Comox and the Courtenay valley. Its excellence has long been known. All the writers on the agricultural resources of the Island, whose descriptions were printed some forty years or more ago, were eloquent in their praise of this remarkable district, attention having been concentrated to it by what were described as "prairies" which were land more or less open. Mr. Sproat's

estimate was that of farming land there were 50,000 acres there, but subsequent investigation and a better appreciation of the land suitable for farming has shown that this is a great underestimate. The best information that I have been able to get leads me to suppose that for a distance of forty miles northwestward of Comox a very large proportion of the land will be converted into farms, when once the timber has been cut off, so that the change from a lumbering to a farming community will be gradual. This is all within the E. & N. Railway grant, and speaking generally the area is about half a million acres. I shall not undertake to say how much of it will ultimately be utilized for some line of agriculture. It extends from the shore back to the upper waters of Campbell river and the sources of the streams flowing into Great Central Lake. One of the best known timber cruisers in the province, speaking to me of that part of the area which lies along the western line of the railway land, said: "It contains the largest and best timber in British Columbia, and the soil when the trees have been cut away will be found for the most part suited to farming."

On the West Coast

Not many people have been accustomed to think of the West Coast in connection with agriculture. It is rock-bound and while exceedingly attractive from the scenic point of view, and while giving many evidences of being richly mineralized, it has not appealed to many persons as likely to become of any considerable interest from the standpoint of the farmer, and, so true is it that "agriculture is the true basis of a nation's wealth," the future of the West Coast has always been looked upon as problematical for lack of any information as to its value from this standpoint. Information is even now only limited, for there are extensive areas of which no investigation has been made, but there is one tract that has been explored and surveyed, but no official report concerning it has ever been compiled. Only the surveyors' field notes are available in the Land Department, but from these it is apparent that out of the land surveyed about 30,000 acres are suitable for agri-

culture. This area lies just northwest of Barkley Sound and begins at Amphitrite Point on the south and extends to Cox Point on the north. Where it fronts the ocean there are Long Bay and Wreck Bay with their magnificent beaches of hard sand. I am informed by those who have examined this tract that the arable land extends further inland than the surveyors went, possibly nearly all the way to Kennedy Lake, and that it is perhaps no exaggeration to place the arable area at 100,000 acres. The quality of the soil has been abundantly demonstrated by actual cultivation. Connection can be made between this tract and Alberni by way of Kennedy and Sproat Lakes, on the shores of which there is some arable land. At Alberni we have one of the finest arable areas in the province. It extends from the head of the Canal for a long distance. Indeed my information is that there is not much interruption of the tract between the head of the Canal and Comox Lake, which in a straight line is about 25 miles. Dr. Brown mentions this in his report above referred to, and I have independent information to the same effect. One cannot speak too highly of the Alberni valley. A recent writer in the *Colonist* has described it as 25 miles long and 5 miles wide, and says: "The soil is generally a red loam underlaid with gravel and sand, well suited for fruit growing. The average depth of the soil is about 18 inches on the higher ground, and in isolated places the gravel subsoil comes near the top with only a few inches of soil. Towards Comox there are a number of marshes and cranberry swamps, which can be comparatively easily drained." The area already cultivated demonstrates the great value of this valley for fruit growing and general farming. I am without any detailed information concerning the arable areas along the West Coast north of Clayoquot, although I am told of several extensive level tracts, which in the course of time will undoubtedly come into use, as industries develop in the neighborhood of them.

General Review

It is now possible to make an approximate review of the agricultural capabilities of the Island. Beginning at Clayo-

quot Sound on the west coast, and proceeding from thence to Victoria parallel to the shore of the Strait of Juan de Fuca; thence proceeding up the East coast as far as Seymour Narrows, thence by way of the valley of Salmon river towards the northern end of the Island we have a belt of land which is to a very large extent arable. From Alberni across country to Comox there is another area of the same nature, and from Muchalat Lake, which lies inland from Nootka Sound, to the Nimpkish Lake is another. I do not wish to be understood as suggesting that all the land embraced within the limits thus generally described can be utilized for farms, for it cannot be; but the very conservative estimates to which I have access, warrant the general conclusion that the ascertained arable area of Vancouver Island may be placed at from 750,000 to 1,000,000 acres, besides a large area available for pastoral purposes. Compare this with the total area of improved land, including land in crop and in pasture, in the provinces of Nova Scotia and New Brunswick in 1871, which was as follows. Nova Scotia, 1,627,091 acres; New Brunswick, 1,171,157 acres. With some knowledge of the progress of agriculture in those provinces during the last forty years, I venture to say that there is nearly, if not quite, as much land available for agriculture and pasturage on Vancouver Island as is at present utilized in either of the provinces mentioned. When we take into consideration the remarkable fertility of Vancouver Island soil, the suitability of the climate for fruit raising and dairying and all the other considerations, which must be taken into account in considering this subject, the agricultural possibilities of the Island are seen to be very great. In the nature of things the development of this source of prosperity will not be very rapid. It will proceed hand in hand with the development of lumbering, mining and fishing, with an additional stimulus due to the growing markets for the fruits, which can be produced here in such perfection. It is not desirable that the forest should be recklessly destroyed in order that farms may be made, but the fact that so large a part of the surface is suitable to farming is of immense importance from the transportation point of view, because it ensures a growing

prosperous population for all time to come, even after the timber and minerals are exhausted, if ever such an epoch need be contemplated.

The difficulties in the way of ascertaining with any degree of accuracy the potential mineral wealth of Vancouver Island are great. Geologically the condition of the Island is very favorable to the discovery of mineral deposits, for the rocks are largely free from accumulations of glacial drift. On the other hand vegetation is so dense that the difficulties in the way of the prospector are often almost insurmountable, especially in those parts where it is reasonable to suppose from geological data that minerals are most likely to be found. This density of vegetation has rendered anything like a comprehensive geological survey of the Island impossible, except at an expense which the Dominion authorities have not yet felt warranted in incurring. It is true that a geological survey is only likely incidentally to make known the existence of mineral deposits of value, but it is of great value as a guide to prospectors, for it shows them where minerals may probably be discovered. There is happily good reason to expect that there will be such a degree of co-operation between the provincial and federal authorities that trails will be made of which geological explorers as well as prospectors can avail themselves. Notwithstanding these difficulties, a great deal is already known of the mineral wealth of the Island, sufficient to warrant the opinion that it will prove in the future, as it has in the past, in respect to coal, the scene of great and prosperous industries.

Minerals Found Here

In regard to the coal mines of Vancouver Island I feel that it is almost sufficient to quote from the British Columbia Year Book, issued in 1903: "The east coast of the Island has so many producing collieries, having a joint yearly output of over a million tons, that mention of the district here is scarcely necessary." When considering the Island, as I am now, from the standpoint of railway development, a simple statement that the deposits of coal are many, are widespread and of ex-

cellent quality is perhaps enough, but mention may be made of the fact that it is not only in the region around Nanaimo, Ladysmith and Cumberland that extensive deposits exist, but they are known to be present in other and widely separated places. There is coal at Quatsino Sound and other points near the northern end of the Island. It is found near Sooke and at other points near the southern end. It is found near Alberni, which is near the centre of the Island. The coal of Vancouver Island is a great and permanent source of prosperity.

In regard to iron the general statement may be made that the deposits are numerous and apparently extensive. The ore is chiefly magnetic. There is one notable exception. On the northern side of the West Arm of Quatsino Sound there is a large deposit of bog iron ore, which has been formed by seepage from the hills, where what is popularly called white iron abounds. The quality of this bog iron is high. Magnetic iron is found in the neighborhood of Quatsino Sound, at Head Bay or Nootka Sound, on Kennedy Lake, at Sarita, Copper Island and Sechart on Barkley Sound, at Jordan River, at Sooke, near Chemainus, near Crown Mountain and elsewhere. An analysis, officially made, of the ores on Barkley Sound will serve to indicate the general character of the Vancouver Island magnetites: Iron from 64 to 69 per cent; silica from 1.5 to 7.3 per cent; alumina from .14 to .52 per cent; sulphur from a trace to .008 per cent; phosphorus from .003 to .01 per cent; lime from .250 to .376 per cent, with traces of manganese and magnesia. I quote again from the Year Book: "Up to the present the iron areas have been held by men unable through lack of the necessary means to develop them." In the same work I find a report from Mr. W. M. Brewer, M.E., on iron, from which I make the following extract: "As a matter of fact, attention has only been drawn to the iron ore deposits on the Island for such a short time, so far as concerns their value for the manufacture of pig iron, and incidentally steel, that prospectors who are searching for metalliferous lode mines have given very little attention to locating occurrences of iron ore, unless such holds sufficient copper and gold value to make the ore important in their eyes." There is every reason to

suppose that further prospecting, which is unlikely to be undertaken until there arises a demand for iron ores, will disclose many other valuable deposits.

Concerning the copper deposits of the Island it can be truthfully said that they appear to be innumerable, and some of them are undoubtedly of high value. The mines most prominent as shippers of ore have been the Tyee and the Lenora, but there are others which have shipped considerable quantities. It would be a waste of time to give a list of the various prospects, which have been more or less developed. Perhaps as much as need be said here is that copper ores are found in almost every part of the Island that has been prospected, and that is reason to believe they exist in great quantity in the unexplored portions. A few years ago there was every reason to anticipate the extensive development of some of the various deposits, but the fall in the price of copper checked investment, and a revival need not be expected until prices go up again. There is no room for doubt that copper is an abundant mineral on the Island.

Gold is also a widely distributed metal. It is found in the sands on the beach at the north end, and in the gravels which front the Strait of Juan de Fuca, on the south. It occurs in the sands of Wreck Bay on the West Coast and is found in combination with other minerals on many of the small rivers flowing into the Pacific ocean. It has been washed in paying quantities from the sands of Leech river, not very far from Victoria, and free milling quartz containing it has been discovered in more than one locality. It would be injudicious to express any opinion as to the future prospects of gold mining on the Island. It is yet an unknown quantity, but makes a good promise for the future. The same observation, although to a much more limited degree, applies to silver, platinum and mercury, which have been found, but concerning the value of which in connection with the development of the Island it would be folly to express any opinion whatever. I only mention that these metals have been found.

The Marble mines of Nootka Sound are supplying some of the most beautiful marble now on the market. The deposits

that are being worked are extensive. More of apparently the same character is known to exist in the same neighborhood, and I am told of excellent marble being found on the Klahan river and elsewhere. Limestone is abundant, and some of the beds are admirably adapted for the manufacture of Portland cement. Brick clay, fire clay and building stone of high grade are common. In short the mineral resources of Vancouver Island are not only very diversified, but are of such value that they will supply the basis of great industries, thereby in the course of time furnishing a market for the products of the thousands of farms, which will then be found all over this "Treasure Island."

The fisheries of Vancouver Island do not play any very direct part in connection with railway development for obvious reasons, and yet the fact that the coast waters teem with herring, halibut, salmon, codfish and other varieties has an important bearing upon the general question, because the greater the number and variety of industries that can be built up here, the greater will be the aggregate of trade, and hence the larger will be the traffic which railways can secure. Fishery, except the taking of salmon, has not attained anything like the proportions in the Pacific Northwest that it may be expected to assume. Its expansion is likely to be much more rapid in the future than in the past. The recent growth of the herring fishery at Nanaimo, is an indication full of promise, but it has not reached anything like the magnitude possible. The markets of the Prairie Provinces may be expected to take a great many herring, fresh or salted, as well as other varieties.

The Scenic Attractions

The part which the scenic attractions of Vancouver Island will play in building up tourist travel over the transcontinental railways will be very great indeed. Needless to say that this is a very profitable line of business for the transportation companies. It is difficult to mention any part of the Island which has not very much to commend it in this regard. In a newspaper interview, published several years ago, Rear Admiral Palisser, R.N., who in his long years of service had visited many parts of the world, expressed his hearty appreciation of

the coastwise scenery, which he said was unsurpassed by anything that had come under his observation. Vice-Admiral Sir Lewis A. Beaumont, who cruised along the West Coast for a short time, when in command of the North Pacific Squadron, described the scenery as unparalleled and as certain at no distant day to attract thousands of tourists. A little north of Barkley Sound is what is marked on the map as Long Bay, but is more commonly spoken of as Long Beach. Between it and Amphitrite Point, which is at the northern side of the entrance to Barkley Sound, is Wreck Bay, practically a prolongation of it, but somewhat shorter. The two bays together form one of the most remarkable sea beaches in the world and are without rivals on the whole Pacific coast. The sand has been hammered by the ocean waves through countless centuries, until it is almost like a pavement. Here is certain to be one of the greatest summer resorts. The people from the inland parts of Canada and the United States will come to this matchless spot in great numbers when once hotel accommodation and suitable means of travel have been provided. This beach can be reached from Alberni by way of Sproat and Kennedy Lakes, through a country of an exceedingly beautiful character. From the information at my command I am led to believe that there is no part of the country that will prove more attractive to tourists than this. Kennedy Lake is a beautiful sheet of water with fine sandy beaches and considerable arable land on its shores. Several streams flow into it and the fishing is good. Alberni is the central point of a large and wonderfully beautiful country. Great Central Lake, a splendid body of water in the very heart of the Island, can be reached by wagon road. It is ideal as a place of summer resort, and if something more rugged is needed, it can be found at Buttle's Lake, not many miles further on. Here are rugged peaks, which adventurous climbers can scale, great glaciers to be explored, an abundance of game and fish, in fact, everything to delight the eye and refresh the jaded nerves of the dwellers in cities. From the point of scenic attractions alone this Central part of the Island will repay railway construction at an early day.

So much has been written concerning the attractiveness of Victoria and its surroundings, of the wonderful beauty of the archipelago, which lies along the eastern shore of the Island, of the charm of Cowichan, Nanaimo, Comox and other points, that any detailed reference to them here would be needless. It may be sufficient to say that the whole Island contains so much that is charming to the eye, and presents such a variety of attractions to sportsmen and tourists that it is certain to enjoy a very great degree of prosperity from this cause alone. In order that its advantages in this respect may be fully utilized the country must be fully opened by modern means of communication. When this is done there will be many resorts by the side of the sea, along the many beautiful lakes and on rivers flowing through valleys, flanked by mountains well worth climbing. The principal lakes are Cowichan, Great Central, Buttes, Nimpkish, Nitinat, Sproat, Kennedy, Nahmint, Sooke, Shawnigan, Nanaimo, Cameron, Comox, Upper Campbell, Lower Campbell, Mohun, Muchalat, Vernon, Upper Bonanza, Alice, Kathleen, Victoria, besides others too numerous to mention, many of which have not yet found a place on the map. Very many of these bodies of water are of considerable magnitude. Cowichan, which is the largest, probably has an area of 75 square miles. In many instances they are surrounded by mountains, with here and there level spots along their shores, where homes could be established amid beautiful surroundings. As a rule they do not freeze over. In practically all of them there is good fishing. The rivers on the island are very many, but only in one or two instances are they to be taken into account in connection with the transportation of anything except saw logs. To the fisherman they present many attractions. Summing up the scenic advantages of Vancouver Island in a few words, I may say that, from every point of view from which it is regarded, it has very much to commend it, and that as a resort for tourists and sportsmen, and as a home for people of leisure, who prefer natural surroundings, coupled, if they wish, with opportunities for interesting themselves in the cultivation of the soil, it cannot be surpassed, and is hardly equalled.

The Climate

Speaking generally of Vancouver Island, the climate may be described as one where extremes of heat or cold are unknown. It is perhaps important for the information of persons, who have never had their attention directed to the subject, to point out that the latitude of places on the opposite sides of the North American Continent gives no idea of their relation to each other in the matter of climate. For example: The Forty-ninth parallel of north latitude on the Atlantic Coast passes through northern Quebec, where the winters are exceedingly severe, and the summers are short and hot. It crosses Vancouver Island, where there is little snow except on the highest levels where a few degrees of frost is all that need be expected in the coldest weather, where the summers are never very hot, although grapes and peaches flourish in the open. In no part of the Island are the winters severe as far as temperature is concerned, and the snowfall is rarely heavy except in the higher elevations. The rainfall is abundant in most parts, although for local reasons there are a few localities where the summer precipitation is less than is desirable. Speaking generally, the west half of the Island receives much more rain than the east side; but in no part is the precipitation too great or too little for successful farming, dairying or fruit growing. Doubtless certain localities are better adapted to one line of agriculture than another, but this is true of all the world. I have made inquiries and have learned that fruits, large and small, thrive equally as well in the extreme northwest of the Island as in the extreme southeast. There is no winter in the eastern Canadian sense of the term, but a rainy season, with occasional snowfalls towards the southern end of the Island and more frequent ones towards the north end. Often in the settled parts of the Island cattle can be allowed to run in pasture the whole year round. I think I am safe in saying that in no part of Canada are there as many days in the year when a man can comfortably work out of doors as on Vancouver Island. Building operations of all kinds are carried on without interruption throughout the year. The summer nights are always comfortably cool; the harvest season

is rarely broken by bad weather. From the point of view of healthfulness it may be said with confidence that there is no part of all the world that stands higher than the Island. Anything like malaria is absolutely unknown, nor are there any diseases which are at all prevalent. From the point of view of the person, who wishes to bring up a family in a genial and healthy climate, the Island fears no comparison.

The Settled Areas

The only large continuous settlement on Vancouver Island may be said to be on the southeast coast, extending from Sooke on the south to the Courtenay valley on the north, a distance in a direct line of 120 miles. It has an average width of less than ten miles. When I say "continuous settlement" I do not mean that farm succeeds farm with little or no interruption, but only that this part of the Island is settled in some places fairly thickly and in others less so. In the 1,200 square miles approximately included in the district there is a very great deal more land unoccupied than occupied; at the same time settlement succeeds settlement with no very great interruption. Probably nearly 70,000 people are resident within it. Here are the only cities on the Island. The largest is Victoria, the capital of the Island, situated at the extreme southeast, the others are Nanaimo and Ladysmith. There are other centres of population to which brief reference will also be made.

Centres of Population

Victoria.—In speaking of Victoria, the Municipality of Oak Bay and the unorganized district of Esquimalt are to be understood as included. Victoria is situated on the southeast end of what I have called the Saanich Peninsula, with Oak Bay lying immediately to the east of it. Esquimalt lies West of Victoria on what is known as the Esquimalt Peninsula. From Esquimalt Harbor to Oak Bay in a direct line is six miles. The length of the electric railway line between the two points is somewhat longer. There are three harbors. On the east is Oak Bay, which can be used for small vessels. In the centre is Victoria Harbor, with accommodation at its entrance for the largest vessels engaged in the commerce of the Pacific Ocean, and in its inner harbor for the largest coasting steamers. Esquimalt harbor is on the west and is one of the

finest ports in the world. The population of Victoria as above described is about 40,000. It is the capital of the province and the seat of several important industries. It has a large number of people of means resident within its borders, and the private homes are in many cases very attractive. Esquimalt was the depot of the North Pacific squadron of the Royal navy. There is a large navy yard, a graving dock and other appointments necessary for such a station. There are fortifications. A detachment of the permanent force of the Canadian Militia is maintained at Work Point on the western side of Victoria harbor.

Nanaimo is situated on the east coast of Vancouver Island, on an excellent harbor of the same name. It is the headquarters of the operations of the Western Fuel Company, which carries on coal mining on an extensive scale. There are other industries. The harbor is capable of accommodating vessels of any tonnage. It has connection with Victoria by the Esquimalt & Nanaimo Railway, the distance between the two cities being about 70 miles. This railway is being extended to Alberni at the head of Alberni Canal on the west coast of the Island. The estimated population of Nanaimo is 7,000.

Ladysmith is on the eastern shore of the Island on Oyster Bay, an excellent harbor. It is one of the shipping points of the Wellington Collieries Company. The Tyee Copper Company's smelter is located here and there are other important industries. Ladysmith is 16 miles from Nanaimo and 60 from Victoria and has connection with both places by the Esquimalt & Nanaimo Railway.

Cumberland is situated about 13 miles inland from Union Bay, on the east coast of the Island, with which it has railway connection. The principal industry is the coal mining carried on by the Wellington Collieries company. It is about 60 miles north of Nanaimo. Its population is estimated at 2,700.

Comox, Courtenay, Sandwick and Grantham may be considered together. Comox is on the harbor of the same name on the east coast of the Island, and the other points named are in the valley which extends northward from the harbor. Comox is some six or eight miles from Cumberland. It is without railway connection.

Duncan is a small town in the Cowichan valley on the line of the Esquimalt & Nanaimo Railway, 40 miles from Victoria. It is the centre of a farming district.

Chemainus is a saw mill town on Horseshoe Bay on the east coast of the Island and on the line of the E. & N. Railway.

Alberni, New Alberni and Beaver Creek are points in the Alberni Valley, New Alberni being at the head of steamer navigation on Alberni Canal, which is some 35 miles long and is navigable by vessels of any draught of water. Railway connection is being established to connect with the E. & N. Railway. The connection will be 50 miles long.

Clayoquot is a saw mill and mining settlement on the west coast of the Island, 150 miles from Victoria. It is on an excellent harbor.

Crofton is near Osborne Bay on the east coast. It is the seat of a smelter, which has not been recently in operation.

Departure Bay, Wellington, Northfield, Chase River, Cedar Stovely and Brechin are points near Nanaimo. Wellington is the present terminus of the E. & N. Railway.

Extension is a settlement at a coal mine about 12 miles from Ladysmith.

Fort Rupert is an old Hudson Bay post and at present a trading point on the east coast near the north end of the Island.

Port Hardy is the terminus of the trail from Quatsino Sound, and is on Hardy Bay, an excellent harbor on the east coast.

Gordon Head is a fruit growing district on the east coast about 5 miles from Victoria.

South Saanich is a municipality adjoining Victoria on the north. It is almost exclusively a farming community, but the part closely adjacent to Victoria is being built up as a resident suburb.

North Saanich adjoins South Saanich and is similar in character.

Sidney is a village on the Saanich Peninsula, about 17 miles from Victoria with which it is connected by the Victoria & Sidney Railway. It has a large saw mill and is the headquarters of the surrounding farming country.

Tod Inlet is the site of the Vancouver Portland Cement Company. It is on an arm of Saanich Inlet, and is 12 miles from Victoria.

South Wellington is on the line of the E. & N. Railway and is a coal mining village. The mine is not at present being operated.

Union Bay is a village on Baynes Sound on the east coast of the Island, 60 miles north of Nanaimo and 12 miles from Cumberland, with which latter place it has railway connection. It is an important shipping point for coal.

Uclulet is a settlement on the northwest side of the entrance to Barkley Sound. Uchucklesit is a point on Barkley Sound. Banfield is on Barkley Sound and is the terminus of the Pacific Cable.

Somenos, Cobble Hill, Cowichan, Koksilah and Goldstream are points on the E. & N. Railway.

Shawnigan Lake is a farming settlement, saw mill village and tourist resort on the line of the E. & N. Railway.

Sechart is on Barkley Sound, and is the headquarters of the whaling industry.

Nootka is on the west coast, and is the site of marble quarries.

Sooke is a farming and fishing centre on the Strait of Juan de Fuca, 25 miles southwest of Victoria.

Metchosin, Happy Valley, Strawberry Vale, Rocky Point, Royal Oak, Cadboro Bay, Parson's Bridge, Millstream, Colwood, Colquitz, Albert Head and William Head are farming settlements near Victoria. The latter is the Quarantine Station.

Milne's Landing is a farming district near Sooke.

French Creek, Parksville, are settlements on the east coast north of Nanaimo.

Port Kusam is a farming and logging settlement on Johnstone Strait on the east coast, at the mouth of Salmon River.

Quatsino is a settlement on Quatsino Sound.

Saanichton is a station on the V. & S. Railway in the centre of a farming district.

Alert Bay is on Cormorant Island just off the east coast of Vancouver Island, 280 miles northwest of Victoria. It is a farming settlement and trading post.

Ahousat is on the west coast, 15 miles north of Clayoquot.

Campbell River is a settlement 33 miles north of Courtenay.

Cape Scott and San Josef are settlements near the north end of the Island.

Coburn is near Ladysmith. It is a logging camp.

Corfield, Cowichan Lake and North Cowichan are near Duncans.

Independent is a farming settlement at Nanoose Bay on the east coast.

Kyuquot is a whaling station 90 miles north of Clayoquot.

Nanoose Bay is 16 miles northwest of Nanaimo. It is a farming district.

Port Renfrew is midway between Victoria and Cape Beale and on Port San Juan.

Sidney Inlet is a mining camp on the west coast 30 miles north of Clayoquot.

Transportation Facilities

Vancouver Island has three lines of railway, which engage in general freight and passenger traffic. They are: The Esquimalt & Nanaimo Railway, the Victoria & Sidney Railway, the railway from Union Bay to Cumberland.

The Esquimalt & Nanaimo Railway extends from Victoria to Wellington, a distance of 78 miles, and is in a general way parallel to the east coast and removed from it not many miles at any point. It is owned by the Canadian Pacific Railway company. This line is being extended to Alberni, a distance of 50 miles, and will then connect the east and west coasts of the Island.

The Victoria & Sidney railway is on the Saanich Peninsula. It extends from Victoria to Sidney, a distance of 17 miles. It is owned by the Great Northern Railway company.

The railway from Union Bay to Cumberland is 12 miles long and is owned by the Wellington Collieries company.

Connection is maintained with more or less regularity between these railways and Vancouver and other points on the lower Mainland by car-ferry. The ferries in use are barges towed by tugs. The ferriage is safe and easy.

Steamship connections between the Island and Mainland are maintained from Victoria and Nanaimo. From Victoria connection by steamer is maintained with Seattle. The steamers employed in these services are of the best type.

There are regular steamer sailings to all points on both coasts of the Island.

Alberni has stage communication with Nanaimo. Cowichan Lake has communication with Duncan in the same way. There are stage lines between other points.

Suggested Railway Routes

I suggest the following routes by which railways might advantageously be built for the development of the province.

From Alberni, an extension of the line from Nanaimo, to Comox and thence towards the northern end of the Island, following the general course of the east coast, but not along it.

From a point on the line from Nanaimo to Alberni, northward to Comox on the eastern side and towards the north end of the Island.

From a point at or near the north end of the Island to Nimpkish Lake, thence by way of the Klah-anch river and the western side to the head of Alberni canal, with a branch to Nootka.

From a point on the east coast at the mouth of Salmon river or Campbell river across the Island to Nootka.

From Victoria to Barkley Sound by a route parallel to the Strait of Juan de Fuca.

From Alberni to a point on the line just mentioned.

From Duncan to Cowichan Lake.

From Hardy Bay to Quatsino Sound, with a branch line to the northwest.

I suggest that communication can be established with the Mainland by either or all of several ways, as follow:

By car-ferry from a point at the north end of Vancouver Island to Prince Rupert, the terminus of the Grand Trunk Pacific.

By car-ferry to a line coming from the interior by way of Bute Inlet or Knight Inlet.

By bridges at Seymour Narrows and the other channels in that vicinity.

By a car-ferry from the head of Bute Inlet.

By car-ferry between Nanoose Bay and Vancouver.

By car-ferry between Nanaimo and Vancouver.

By car-ferry between Ladysmith and Vancouver.

By car-ferry between Sidney and Vancouver, New Westminster or some point on the Mainland south of the Fraser river.

By car-ferry from a point near Victoria to Port Angeles, Washington.

The suggested railways and ferries would permit of the loading of timber on cars at the mills and its shipment without breaking bulk to any point on the Continent.

For example, cars could be loaded at mills on the west coast, be carried on barges to Alberni and sent forward by rail to car-ferries on the east coast plying to Vancouver.

The area of country to be developed and the variety of points through which connection with the Island can be maintained show that there is scope for the enterprise of all the transcontinental railways in efforts to secure a share of the business.

Some Concluding Observations.

The following extract is from an essay on Vancouver Island written by John D. Owen, F.R.G.S., previous to 1862, and called "A Guide to British Columbia and Vancouver Island":

"Independently of the adjacent territory, the favorable position occupied by Vancouver Island, with reference to the China and Japan trade and the islands of the Pacific, renders it peculiarly situated to be the emporium of a great commerce and from the fact of its possessing most excellent harbors, there is no reason why it may not at some future period command the principal portion of trade between the Archipelago of the Pacific and the Continent of America."

In an address delivered previous to 1862, Col. Colquhoun Grant made similar observations. In 1862 Alexander Rattray, M.D., R.N., said in a published essay: "Vancouver Island will unquestionably become a great commercial island unrivalled in the Pacific. It may emulate England in commerce and manufactures."

Montgomery Marsh, who wrote about 1860, said:

"The position and resources of Vancouver Island eminently adapt it to be the Britain of the Northern Pacific. Its commanding position justifies the expectation that the Island will become, not only a valuable agricultural settlement, but also a commercial entrepot for British trade and industry."

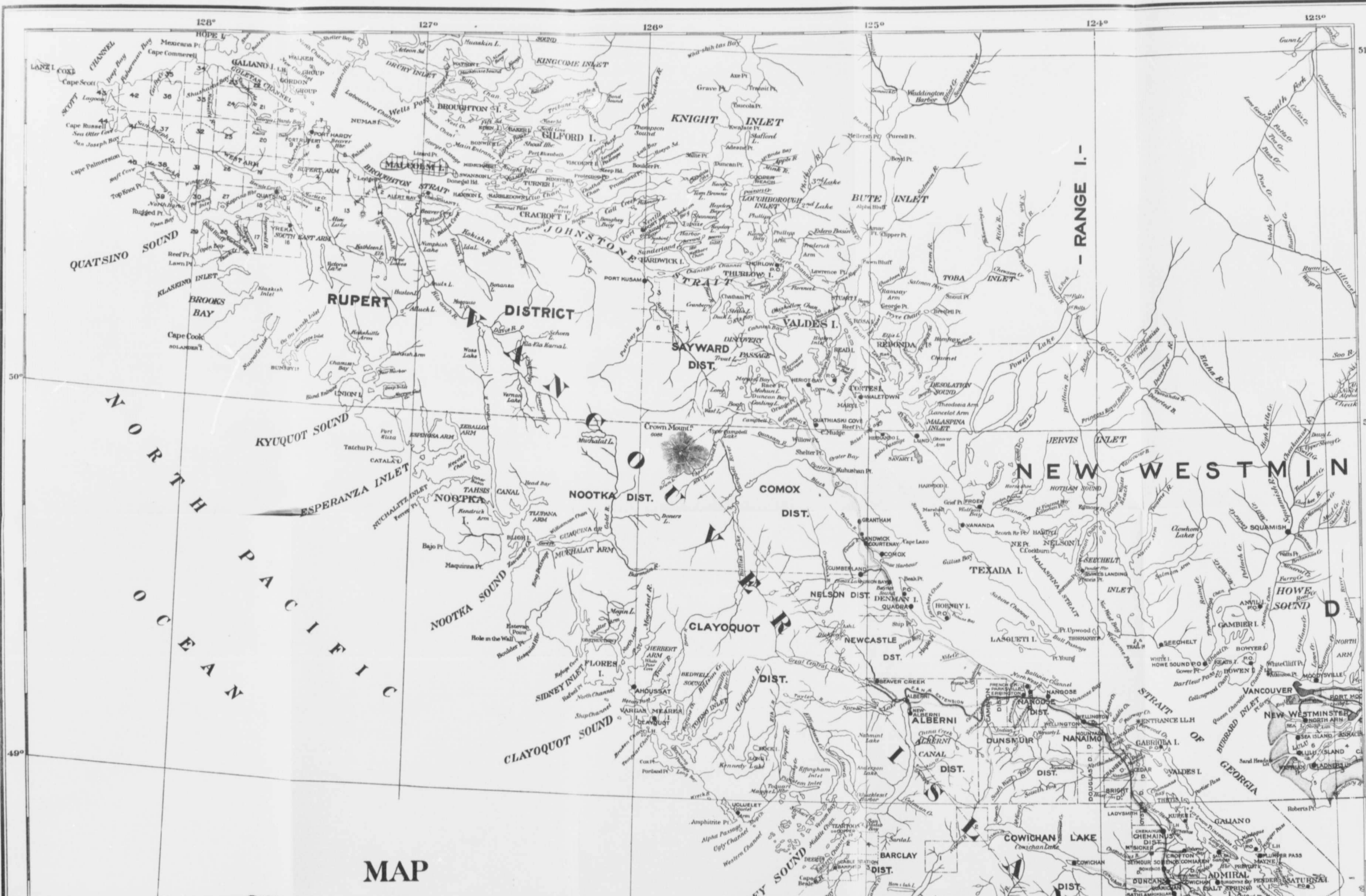
Dr. Charles Forbes, R.N., to whom reference has hereinbefore been made, writing in 1862, foretold the construction of a transcontinental railway across British North America and a transcontinental line across Siberia and was greatly impressed with the strategic importance of Vancouver Island from a military point of view. I quote from his essay:

"Vancouver Island, in her commercial relations, has a noble mission before her. As an outpost of the Mother Country this favored island offers to the enterprising emigrant, to the true colonist, who will make it his home, an ample field for his energies. The centre and focus of trade for the west coast, the natural outlet for the stores of wealth produced and accumulated by the industry of man in the Canadas, Vancou-

ver Island will in the coming time radiate the light of civilization across the whole Northern Pacific, and illuminate the dark and barbarous shores of China and Japan."

In the half century, nearly, which has passed since Dr. Forbes wrote these stirring words, conditions have greatly changed. Japan and China are no longer barbarous in the sense in which he employed the term; the trade of the west coast of America has vastly expanded both northward and southward; Canada has been extended from ocean to ocean; the railways which he foresaw have been built and others across Canada are in course of construction; we know more of the richness of Vancouver Island than we did then; but the development of the Mainland of British Columbia has withdrawn public attention to a certain extent from the Island, and in the natural sequence of events new and influential centres of population have been established on the Mainland. Nevertheless what he and others anticipated of the Island then is within the grasp of its people today, only in a larger sense than the most vivid imagination fifty years ago could have conceived.

In concluding this necessarily imperfect review of Vancouver Island, considered from the standpoint of railway development, I would be unjust to myself, to the readers, who have been interested in what has been herein set out, and to one of the best known and most distinguished of the Island pioneers, who is happily yet with us, if I omitted to refer to the admirable series of letters contributed to the *Colonist* in 1886 by the Hon. J. S. Helmcken, and republished in the *Sessional Papers* of the provincial legislature for 1890, in which he advocates the construction of a railway from Victoria to the north end of the Island and shows how admirably the country is adapted for development and the great strategic advantages of such a railway. In the *Sessional Papers* the letters are entitled: "Correspondence relating to the Northern Railway." They are full of a strong hope for the future of the Island and of appeals to the people to arouse themselves to the necessity of action. I heartily recommend them to all persons, who desire to investigate that aspect of Vancouver Island development.



MAP



MAP
OF
VANCOUVER ISLAND

1909
Scale of Statute Miles.
THE COLONIST LITHO VICTORIA, B.C.