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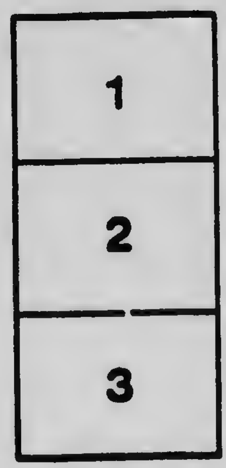

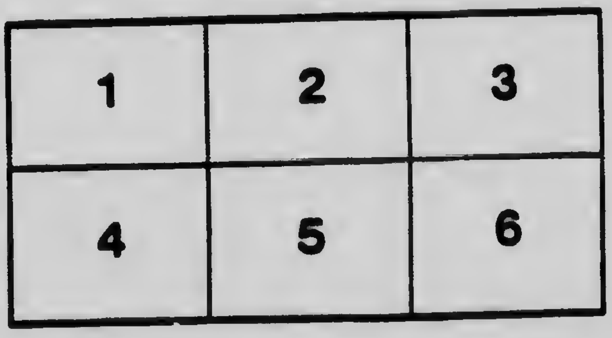

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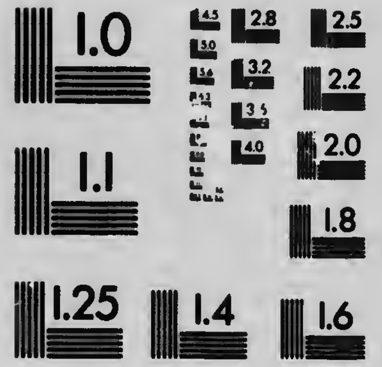

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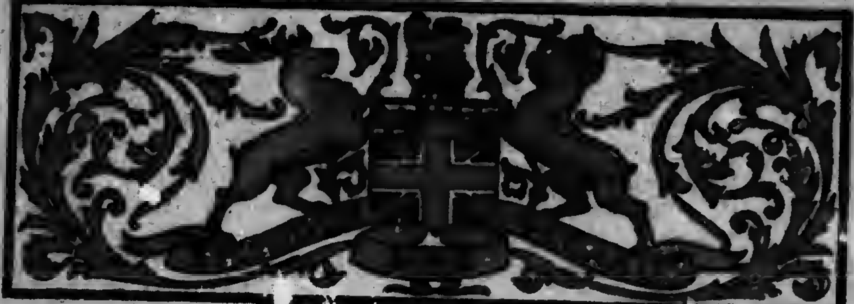

ALBERNI·DISTRICT
BRITISH COLUMBIA CANADA

OFFICIAL BULLETIN №24
UBLISHED BY AUTHORITY OF THE
LEGISLATIVE ASSEMBLY

STAMP FALLS.

A grand waterfall capable of producing a great power.

BUREAU OF PROVINCIAL INFORMATION.

BULLETIN No. 24.

ALBERNI DISTRICT, BRITISH COLUMBIA,

— BY —

HERBERT CARMICHAEL,
Assistant Mineralogist.

THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B. C.
Printed by Richard Wolfenden, I.S.O., V.D., Printer to the King's Most Excellent Majesty,
1908.

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14/5/76

VIEW ON THE SOMASS RIVER.

ALBERNI'S EXHIBIT OF AGRICULTURAL PRODUCE.

A HAY FIELD IN THE VALLEY.

A HAY FIELD IN THE VALLEY.

Captain the Honourable R. G. Tatlow,
Minister of Finance and Agriculture,
Victoria, B.C.

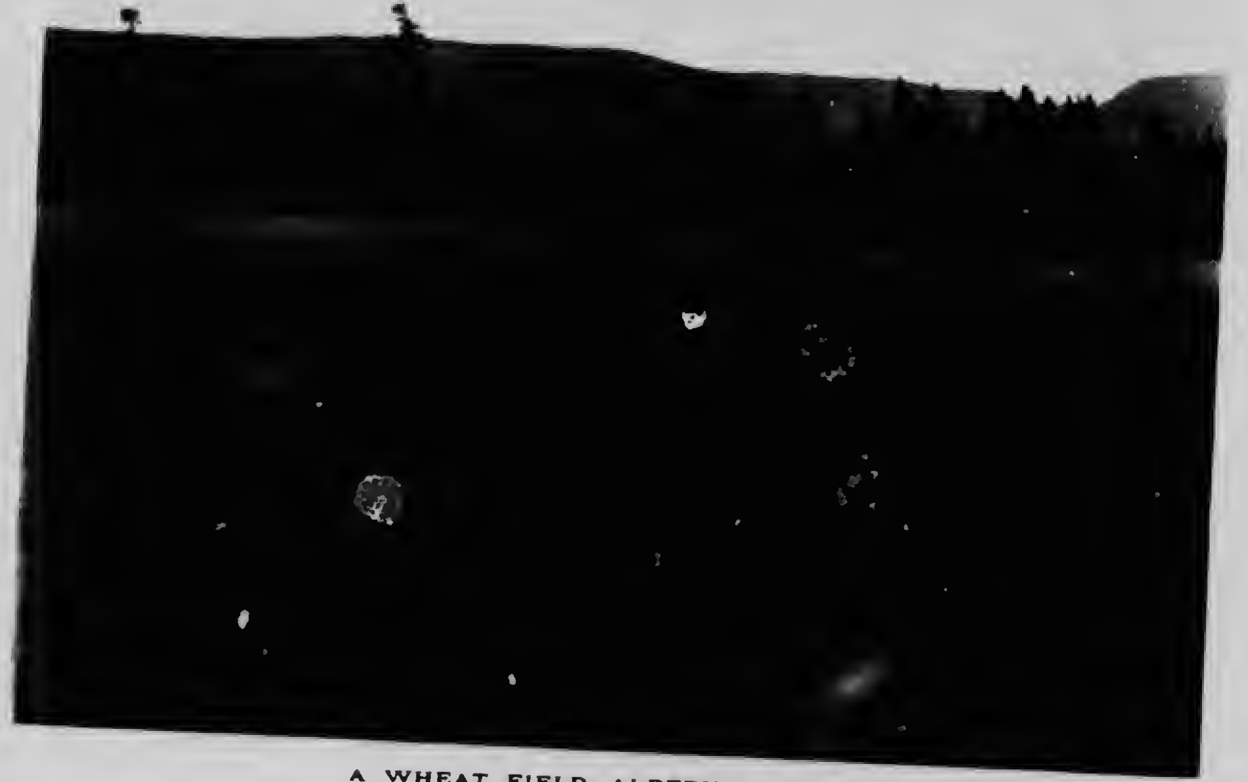
Sir,—I have the honour to lay before you Bulletin No. 24, Alberni District.

It is deemed advisable to publish this Bulletin in order to satisfy the numerous enquiries regarding the agricultural, forest, and mineral resources of Alberni District, to which a great deal of attention has been attracted by the decision of the Esquimalt & Nanaimo Railway Company to extend its road from Wellington to Alberni.

I have the honour to be,
Sir,
Your obedient servant,
FRANK I. CLARKE,
Acting Secretary Bureau of Provincial Information.

Victoria, B.C., February, 1908.

A PRETTY BIT OF FARM COUNTRY IN THE VALLEY.



A WHEAT FIELD, ALBERNI VALLEY.

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ALBERNI DISTRICT, BRITISH COLUMBIA.

THE Bureau of Provincial Information, realising that the opening up of Alberni by railroad connection meant not only the development of that district alone, but assured renewed activity over the whole of the West Coast of Vancouver Island, determined to get such general information as would be useful to settlers who were thinking of making that section their home. As a result of such action this Bulletin has now been prepared.

VANCOUVER ISLAND.

Vancouver Island is situated on the south-western seaboard of British Columbia, separated from the mainland by a narrow channel. The general direction of the island is north-west and south-east; it is 280 miles long by an average of 50 miles wide. There are no great stretches of level land, the general features being mountains and valleys, with a general main ridge forming the backbone.

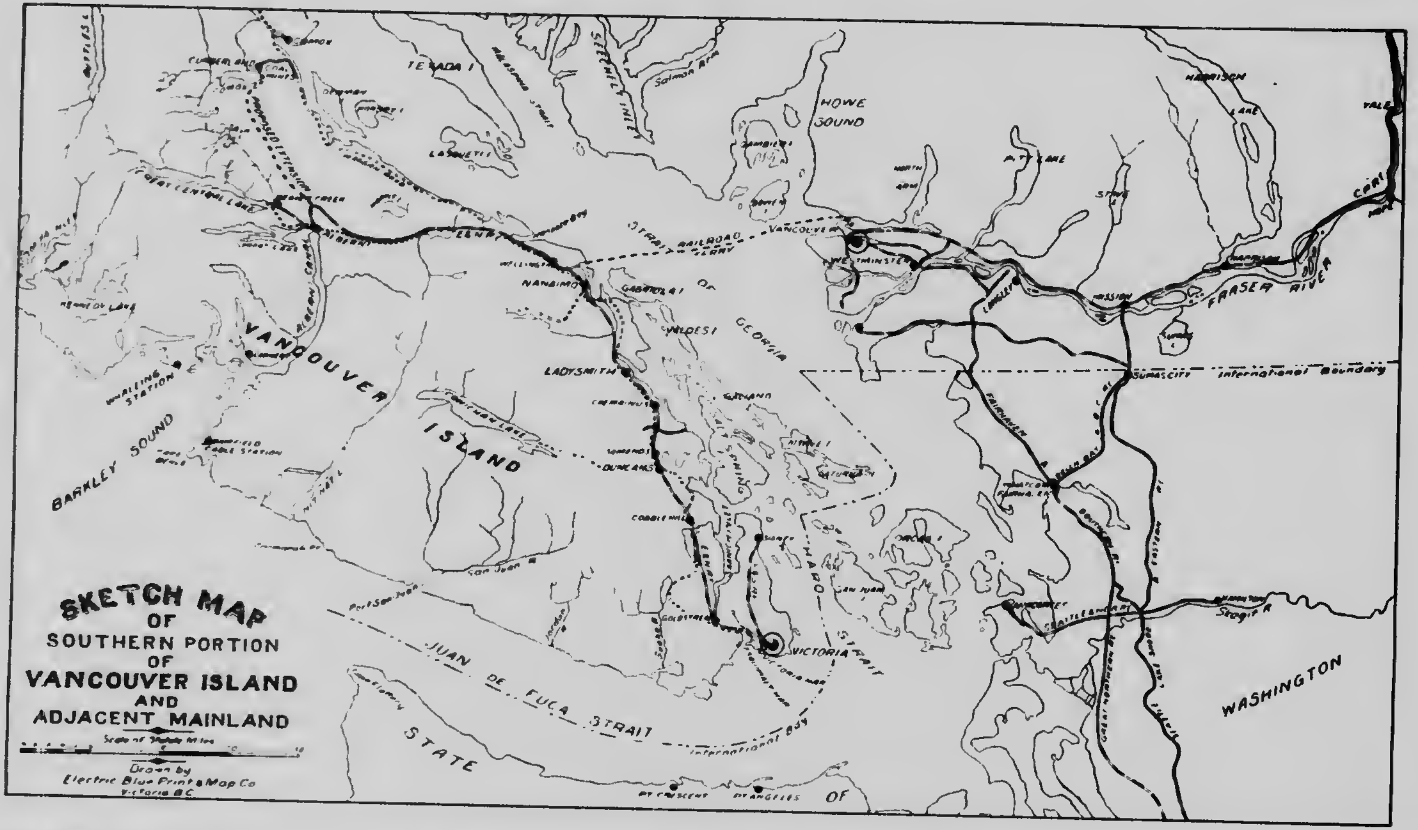
The eastern shore, bordering as it does an inland sea, presents a comparatively unbroken shore line; while the west coast, lashed by the fury of the Pacific Ocean, has been cut up by a number of long arms or fiords, penetrating deeply into the land. From this peculiarity it is astonishing to find that, while the island is only 280 miles long, the coast-line of the western shore has a length of 1,300 miles, exclusive of islands.

These long arms of the sea, navigable by the deepest draught vessels, form splendid waterways and are a great factor in the opening up of the island.

Of these long fiords, only two penetrate through the main mountain range, viz., Quatsino Sound to the north, and the Alberni Canal, a little south of the middle of Vancouver Island. The latter inlet nearly cuts the island in two, being only 14 miles from the eastern shore. The town and valley of Alberni is situated at the head of this stretch of water.

HISTORICAL.

The Alberni Canal was named after a Spanish officer, Don Pedro Alberni, who was in command of a company of volunteers in the



A FARM, SHOWING HOW THE LAND IS CLEARED AND THE FENCES GRADUALLY PUSHED BACK.

A THRESHING SCENE, ALBERNI VALLEY.

expedition to Nootka. It is probable that this inlet was known to the Spaniards as early as 1790; the entrance is marked on their charts and called Archipelago de Nitinat. From the time the Spaniards left Nootka nothing is heard of Alberni, or, in fact, of the whole of the west coast of Vancouver Island until comparatively recent years.

Messrs. Anderson, Anderson & Co., of London, England, besides their business of ship-owners and ship-brokers, had an interest in a ship-building and ship-repairing dock and yard at Rotherhithe, on the Surrey side of the Thames. About the year 1855 it was brought to the notice of this firm that there were in Vancouver Island large tracts of forest land containing Douglas pine and other valuable timber suitable for masts and spars and for general ship-building purposes. In 1860 they sent out their agent, Captain Stamp, to Vancouver Island, and he selected Alberni as the most suitable place to erect a saw-mill, not only on account of the great wealth of timber, but in view of the ease with which it could be shipped to foreign markets.

In August of 1860, Mr. Gilbert M. Sproat was sent by the Government of the Province with the armed vessels "Woodpecker" and "Meg Merrilies," to take over from the Indians the land which had been granted to the Andersons in consideration of their building a saw-mill and opening up the district. The negotiation with the Indians was satisfactorily arranged, and a saw-mill of very considerable capacity was built, and cargoes of spars, masts, and lumber were shipped to all parts of the world. The business became a large and important one, and was continued for some years until the mill was burnt down, which, owing to a depression in trade occurring shortly afterwards, was never re-built. The operations of the Company were for some time in charge of the Mr. Sproat referred to, who is well-known in British Columbia, having written a book on the Indians of the west coast of Vancouver Island.

While the mill was in operation a small steamer, "The Thames," was sent out, and for some time made regular voyages between Alberni and Victoria, and also towed the Company's vessels up and down the canal.

A period of stagnation marks the time from the shutting down of the mill until the year 1886. In that year the Andersons decided to survey a portion of their land into a townsite, which was called Alberni, and from that time till the present there has been a slow but gradual development of the district.

To facilitate their transactions in land and other matters, the Andersons decided to incorporate their Vancouver Island interests into one company. This was done, and the Alberni Land Company, Limited, was licensed under the laws of British Columbia in the year 1906.

In view of its large undertakings in Alberni, the Esquimalt & Nanaimo Railway Company has acquired a substantial interest in the Alberni Land Company, thus giving the railroad access to a splendid deep water ocean harbour. The operations of this Company will, in the future, be largely controlled by the railway company, which will push the development of the town with the vigour that has characterised its actions in the past.

DESCRIPTIVE.

Captain Vancouver, referring to Alberni, has written in his journal, 1792:—

To describe the beauties of this region will, on some future occasion, be a very grateful task to the pen of the skilful panegyrist. The serenity of the climate, the innumerable pleasing landscapes, and the abundant fertility that unassisted nature puts forth require only to be enriched by the industry of man with villages, mansions, cottages and other buildings to render it the most lovely country that can be imagined, while the labours of the inhabitants would be amply rewarded in the bounties which nature seems ready to bestow on civilisation.

The Alberni Valley is 25 miles long by five broad, extending in a north-westerly direction. To the east it is guarded by the Beaufort range of hills, while to the west it is bounded by a sea of yet unnamed mountains. It partly includes two large lakes, and is well watered by numerous rivers and streams.

The townsite of Alberni has a most happy situation. It rises with a gentle slope back from a spacious harbour, a mile wide by a mile and a half long, with good anchorage, free from dangers and reached by a deep fiord from the ocean, called the Alberni Canal.

Referring to this inlet, the Admiralty sailing directions give the following description:—

" Alberni Canal runs in a northerly direction for 22 miles, with a breadth varying from two cables to one mile, and terminates in a fine spacious anchorge at its head. The shores on either side are rocky and rugged, rising abruptly from the sea to mountains, 2,000 and 3,000 feet high. At the head, however, the land becomes low and fertile, a large extent being fit for cultivation. The depths to within one mile of the head vary from 160 to 40 fathoms, and the shores of the inlet are everywhere free from danger."

A PORTION OF OLD ALBERNI, LOOKING UP THE SOMASS RIVER. BEAUFORT RANGE IN THE BACKGROUND.

With regard to the approach from the sea, Captain Walbran, lately in command of the Dominion Government lighthouse and revenue vessel "Quadra," writes with authority in the following letter:—

"Victoria, B.C.,
"14th November, 1907.

"I know Alberni Canal and the new townsite on Stamp Harbour extremely well, having made a survey of the harbour in 1892, as you will see by a glance at the Admiralty chart, 'Clayoquot and Barkley Sounds,' No. 584, on which the plan of my survey is shown. Commander Bowman. R.N., (N.) of the flagship 'Royal Arthur,' used my plan when anchoring there with the flagship, and he afterwards informed me he found the plan most satisfactory, and the harbour an excellent one.

"When I sent in my survey of the harbour I also showed on the plan the new townsite of Alberni, and the Admiralty had it placed on the chart, as you will see. This was entirely done on my own initiative, as there were no signs of a town there in 1892, only the wharf and the ruins of the old saw-mill. I have always thought most highly of Alberni (Stamp Harbour) as an ocean port. The waterway from the ocean, entering at Cape Beale, being clear of all danger for the largest vessels, even such as the Lusitania. The landfall is excellent, there being no off-lying dangers in the track of shipping, and the shore and waters of Alberni Canal are both bold and honest throughout, with very deep water. As an ocean port Alberni will compare most favourably with Portland and San Francisco.

"Portland is a long way up a swift river, the Columbia, at the entrance of which is a most dangerous bar, with ever-shifting sands, which cause the navigable channel to be constantly changing, and, therefore, though most carefully buoyed by the United States Government, can only be safely navigated by the most experienced pilots. Records show that many vessels have been lost on the bar of the Columbia, with great loss of life. One of the reasons, many years ago, for the change of the headquarters of the Hudson's Bay Company for their deep-water merchant ships from Fort Vancouver on the Columbia to Nisqually, in Puget Sound, was owing the many disasters their vessels met with on the bar of the Columbia.

"San Francisco has no dangerous bar to cross, but the entrance to the harbour is contracted, subject to strong tides, and is also subject to extremely frequent and dense fogs.

"Therefore, from my intimate knowledge of this coast, having been in command of the C.G.S. "Quadra" for many years, and having entered Barkley Sound under all conditions of weather, I can state with confidence that Alberni Harbour as an ocean port is an extremely safe one for all classes of vessels.

"J. T. WALBRAN."

The following reference is also made to Alberni by Commander R. C. Mayne, R.N., in 1862:—

"The Alberni Mills possess several advantages over similar rival undertakings in Puget Sound, which are now beginning to be appreciated by merchants, and still more by the masters of ships. One of the chief of these lies in accessibility, for Alberni, being situated on the outside coast of the island, the navigator avoids all the journey in and out of the Straits of Juan de Fuca and Admiralty Inlet, which occupies ordinarily a week, so that a vessel bound to Alberni, making Cape Flattery at the same time with one bound for Puget Sound, would be half-loaded by the time the other reached its destination. Again, when loaded, the tug takes him to the entrance of Barkley Sound, where he can wait for a fair wind, while the owner, in consequence of the more prevalent winds blowing into the Strait, has to beat for two or three days to get outside. In winter this is by no means a desirable spot to beat about in, for the squalls from the Olympian Mountains are sudden and heavy, and fogs come on very rapidly."

The Esquimalt & Nanaimo Railway Company, which is controlled by the Canadian Pacific Railway, has announced its intention of extending its line of railway from Wellington, their present northern terminus, to Alberni, and forming a connecting link with Vancouver by a car-ferry of large size.

Tenders for clearing the entire "right of way" and for a large portion of the grading have been let, and it is expected that the main line will be completed in less than two years. No effort has been spared to make this line as efficient as possible by lessening the curves and cutting down the grade.

With railway connection to the East Coast, Alberni occupies a unique position as a distributing point for the entire West Coast. With the exception of Quatsino, Alberni seems the only point where it is commercially feasible to build a line of railroad to the Pacific seaboard of the island. Everywhere else a range of mountains make a reasonable grade impossible, and Alberni, occupying a central position, is able to distribute and collect freight both to the north and to the south.

TIMBER.

The hillsides and smaller valleys leading into the main valley are clothed with a wealth of the finest timber in British Columbia, yet

A BEND IN THE SOMASS RIVER FROM WHICH MANY TROUT HAVE BEEN TAKEN

untouched by the axe of the lumbermen. Douglas fir forms by far the largest percentage of the timber, together with the so-called hemlock and small bunches of white pine. There is more of the latter seen here than is the average on the coast. Towards Barkley Sound fir gives way to spruce, hemlock and cedar.

The railway company has leased mill-sites and agreed to provide terminal facilities which will insure a very large output of timber for many years to come. The product can be shipped by through cars to the North-West, or by water to the markets of the world.

AGRICULTURE.

The lumber industry will stimulate agriculture in the district by providing a large home market for farm produce, and as the land is cleared of timber it will be taken up for farming. Agriculture has languished in the past, owing to the lack of communication or a home market. Soon it will have both of these defects remedied. The soil is generally a red loam underlain with gravel and sand, well suited to fruit growing. As far as noted, clay was not much in evidence, though it occurs in the valley. The average depth of soil is about 18 inches on the higher ground, and in isolated places he gravel subsoil comes near the top with only a few inches of soil. Toward Comox there are a number of marshes and cranberry swamps which can be comparatively easily drained and got under cultivation. As a whole, the valley has been much enriched by deposits washed down from the mountains.

The following analyses were made from the average light red oam and from the dark coloured soil:—

Analyses Made on the Dry Sample.	Light Red Loam.	Dark-Coloured Soil.
Loss on ignition	11.7%	19.2%
Insoluble mineral matter	70.9%	60.2%
Magnesia	Trace	Trace.
Lime	1.05	1.22
Iron oxide	6.2	5.7
Alumina	9.1	11.8
Phosphoric acid	0.6	0.3
Potash	0.1	0.2
Nitrogen	0.22	0.46

The analyses show these soils to be well supplied with plant ood.

CLIMATE.

The climate is mild, subject only to light winter frosts. The ainfall taken up the valley gave a record of 80 inches, but it was noted during the summer that it was often raining up the valley, whilst it was quite fine lower down, so that 50 inches would probably be a fairer average, most of the rain falls during the winter months giving ample sunshine and good growing weather, as shown by the tomatoes, peaches, and grapes which readily ripen in Alberni.

An atmospheric phenomenon occurs every day with great regularity during the fine summer weather. At eleven a.m. of every day of bright sunshine the valley begins to heat up, and the hot air rising causes a partial vacuum. To fill this vacuum cool air rushes in up the canal from the ocean, causing a strong breeze up the canal and a pleasant wind in the valley. Towards six p.m. the land has cooled, the breeze ceases and calm prevails, which is not disturbed until the following day.

BAROGRAPH RECORD.

It is interesting to note these atmospheric changes of pressure, as recorded by a barograph, a portion of a week's record being shown on the adjoining page. As will be seen, the line starts falling about eleven a.m. and falls till five or six p.m., when it starts rising again during the night and early morning of the next day, and does this with unfailing regularity.

SCENERY.

Alberni district is one of the prettiest portions of Vancouver Island, more especially so in the diversified nature of the scenery. Through the valley flows the largest river on the island, the Somass. Taking its rise in two fine lakes, it tumbles over in grand waterfalls and dashing cascades, and rushing through a dark rock-bound canyon with walls of basalt 100 feet high, merges lower down in a broad and tranquil river. The lower portion of the river shows nature in her more tranquil moods, affording many a typical pastoral scene, while to the north and west we have her in her rugged phases, with the snow-capped mountain and the blue glacier.

Great Central Lake has steep slopes rising abruptly to high mountains with a prominent peak on the northern shore, well-named Thunder Mountain. It is the favourite theatre of nature's electrical displays; its black top, covered with a still blacker cloud, flashing lightning, followed by thunder claps which reverberate from across the lake and back again till they die away in a long, low growl.

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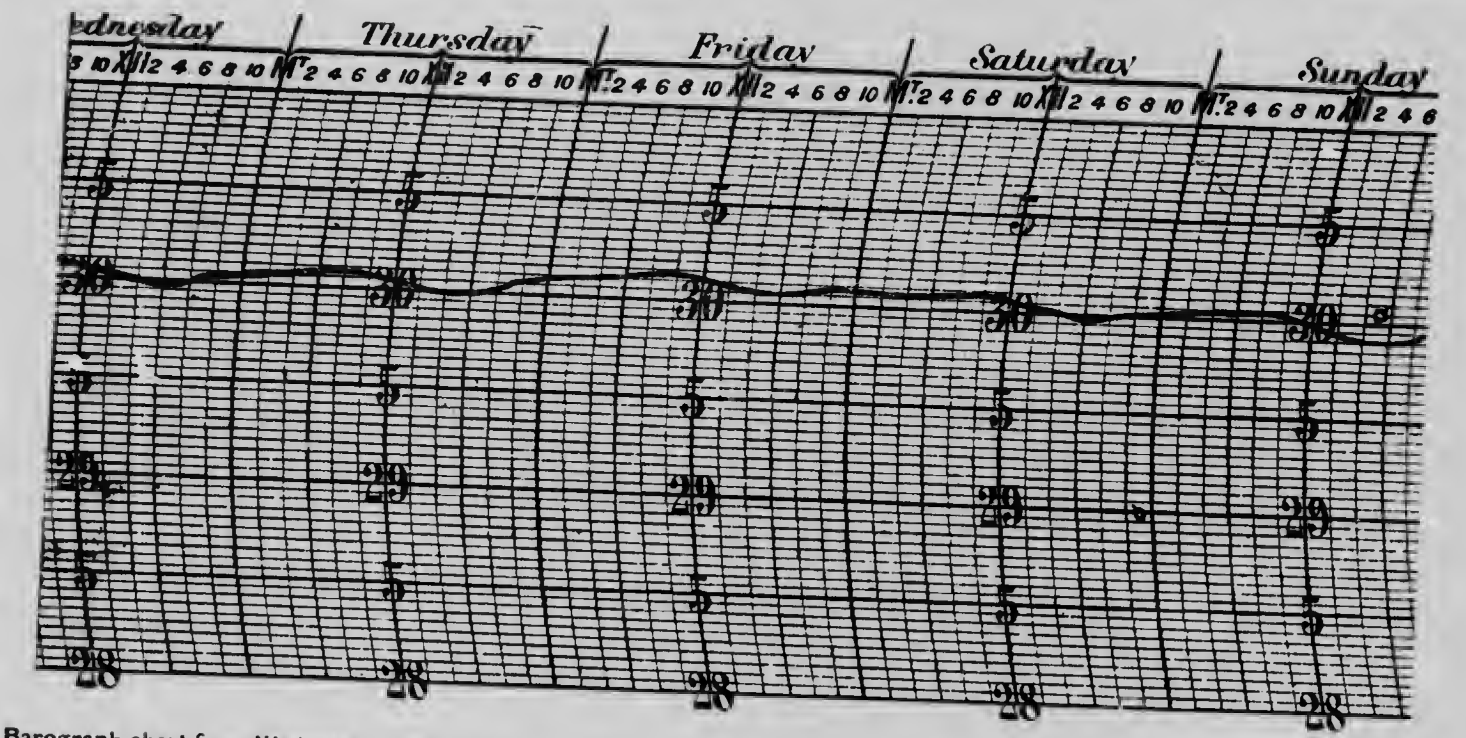
A SALMON CANNERY AT BARKLEY SOUND.

A WATER POWER ON THE SOMASS RIVER.



Barograph chart from Wednesday, 24th, to Sunday, 28th July, 1907. The wavy line shows the daily rise and fall of the barometer.

Thunder Mountain, Great Central Lake.

SPROAT LAKE.

Sproat Lake presents a more peaceful scene. This beautiful lake may well be called the Lucerne of Vancouver Island—it resembles the Swiss lake in many ways.

The great majority of the lakes in British Columbia occupy depressions or excavations in a single line of valley. This is not the case with Sproat Lake, which branches from a central point, sending out four arms, like a star-fish, occupying four distinct valleys exactly as does Lake Lucerne; portions of the latter lake are in four cantons, while Sproat Lake is partly in Clayoquot and partly in Alberni Districts. The western arms are bounded by rocky and often precipitous shores, rising up to high mountains on which the snow stays till late in summer. Some of them are purple with heather towards their summits, whilst others are red with the rust of decomposing mineral. The eastern branch of the lake has shores which rise at a gentle slope with a shingle or sandy beach, and is an ideal spot for summer homes for the residents of Vancouver or Victoria. Here, too, is a dark rock on which are some old and weird Indian carvings. In passing them the Siwash stills his paddle and makes the canoe glide silently past this mysterious spot. where he doubts not a spirit lurks with evil intent.

SPROAT LAKE,
THE LUCERNE OF VANCOUVER ISLAND.

WAPITI IN THEIR HABITAT, WEST COAST, VANCOUVER ISLAND.

Photo by Pagitt.

The Esquimalt & Nanaimo Railway Company has surveyed a branch line to the lakes, which, when completed, will bring it within five hours of Vancouver or Victoria.

A view of the lake, as shown in the accompanying photograph, was a scene not readily forgotten. Looking through the trees, this sheet of water appeared as a mirror reflecting the dark hills behind, o which the fleecy morning mists added another element to the harm of the scenery. Then, behind, one could hear the roar of he falls as the lake found outlet in a series of dashing cascades to he Somass River below.

AUTOS.

The trunk road from Nanaimo to Alberni offers a fine run for utos, and a view of the giant firs to the west of Cameron Lake will vell repay the ride. The road winds through a narrow valley hickly planted with firs, eight and twelve feet in diameter. These harmingly symmetrical trees, in their effort to get to the light, ave pushed their crowns often 300 feet high.

When Alberni is reached, Stamp Falls and canyon, Sproat Lake nd Roger Creek, should all be seen; the latter stream cutting hrough shale and sandstone banks 100 feet high and covered with wealth of maidenhair fern, forms a pretty picture. When the ailroad is completed View Mount should be selected as a place om which to get, unobstructed, a general view of the valley. It 400 feet above the railroad and 1,400 above the sea. Away to the orth the valley is seen extending to Comox; to the north-west a limpse of Great Central Lake is caught, also an arm of Sproat ake. To the south-west the head of the canal is clearly in view, hile the Somass River can be seen meandering through the valley om the lakes to the sea.

GAME.

Alberni and its hinterland has many charms for the sportsman; ild geese and ducks frequent the lakes and marshes, blue and illow grouse are fairly plentiful; there are great numbers of black-iled deer, whilst the wapiti, black bear, and giant timber wolf ll roam in the vast forest recesses to the north-west. In the vers, speckled trout tempt the angler's fly, and many a delightful ening can be spent loading up a basket with shining beauties. ere are, of course, stretches of the rivers which are better than hers, and a photo of a catch is shown, taken in an hour and a arter with the fly, the largest fish weighing 3 pounds 3 ounces.

Very good fishing may be had with the dry May fly in the early part of the season. There is good fishing in both Sproat and Great Central Lakes, in which there are some exceedingly large trout. These latter, however, are wary and hard to take. At the mouth of the river, in the fall, splendid salmon fishing can be had with the rod and spoon.

BARKLEY SOUND.

Barkley Sound offers yet another change in both landscape and climate. It is reached by a pleasant steamer trip of three hours down the canal, at the mouth of which Barkley Sound lies, fronting on the Pacific Ocean. This is a large inlet, 14 miles wide at its entrance, and running inland some 12 miles, with numerous fiords like the Alberni Canal extending off from it. One of these inlets, Henderson Lake (erroneously called Anderson), is fresh water, the entrance being blocked by rocks so that salt water does not get in, but at high tide it is quite easy to pole a canoe into the lake. Other inlets, like Pipestem, are very deep, but narrow and long, the shores rising abruptly to 1,000 and 2,000 feet above the sea.

Barkley Sound includes hundreds of islands, some large and some small, and nearly always having deep water between them. There are three main ship channels, the Western, Middle, and Eastern. The Western channel is especially picturesque, and a trip through the Hundred Islands in a launch is to be looked forward to.

From Ucluelet, one of the arms of Barkley Sound, the ocean beaches are easily reached, Wreck Bay Beach being a small, sandy stretch, three miles long. Here the Pacific Ocean rolls in unceasingly, roaring like a veritable fiend in the height of a storm, but it is a delightful change to come from a hot inland town, sit on the beach, drink in the pure, cool air, and feel the dash of the cold, sal spray.

Barkley Sound is the location of a very profitable whaling enterprise. The whaling station is at Sechart, in the western channel and a large number of whales are caught annually, both in th Sound and out in the ocean.

FISHING INDUSTRY.

There is another industry lying dormant ,which will undoubtedl spring to active life with the completion of the railway to Alber It is the catching of fish on the banks off Barkley Sound and Clay quot and shipping them fresh direct by refrigerator car fro Alberni. It is a well-known fact that there are immense and prac cally untouched fishing grounds off the west coast of Vancouv

ALBERNI CANAL, LOOKING SOUTH.

PACIFIC WHALING STATION, BARKLEY SOUND.

ACKGROUND.

PANORAMIC VIEW OF ALBERNI TOWNSITE AND STAMP HAR al.

IP HARBOUR, MOUNT ARROWSMITH IN THE BACKGROUND.

A SAW-MILL, ALBERNI.

SUNSET ON GREAT CENTRAL LAKE.

THE VALLEY TOWARDS COMOX.

is stated that they have been in the habit of staying in this quiet little spot all summer.

Head of Alberni Canal.

Sproat Lake.

A GENERAL VIEW OF THE ALBERNI VALLEY FROM VIEWMOUNT, L

Great Central Lake.

Beaufort Range.

UNT, LOOKING NORTH AND WEST UP THE VALLEY TOWARDS COMOX.

Island, where halibut, cod, and other white fish abound. With an unlimited supply of fish, a short haul to the railroad, a through refrigerator car system, and a ready market in the East, we have combined the elements of a highly profitable industry.

There is a fine stretch of level land at Ucluelet on the north-west side of Barkley Sound; there are also some comparatively level stretches on the eastern shore. All are heavily timbered, but as the timber is cleared off, the land will become available for agricultural purposes.

The climate of the Sound is much wetter than at Alberni. The moisture-laden winds, as they come in from the ocean, deposit a large proportion of this moisture when they first strike the mountains which fringe the western side of Vancouver Island.

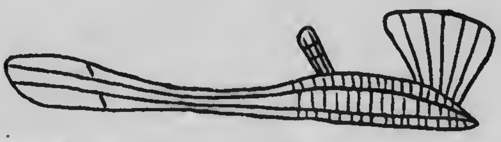
GREAT CENTRAL LAKE.

Great Central Lake lies to the north-western end of Alberni district; the general direction is nearly east and west, and it extends far into Clayoquot Land Division. It is reached by a waggon road from the town of Alberni, the distance being eleven miles, rising 261 feet above sea level. The lake is 22 miles long by two wide in its widest part; it keeps the same general direction, but two turns prevent the whole of the lake being seen at one time. At the lower end the lake empties itself by Stamp River, down which the water rushes in a continuous series of water-falls, cascades, and rapids, till it merges with Sproat River and is called the Somass from that point down. At the lower end of the lake there is a shallow lagoon of considerable extent, shaped like a boot, from which it gets its name. For the first two and a half miles the lake is little more than a quarter of a mile wide, but from this point it widens out till it reaches its widest part at six miles, where it has a width of two miles. At one and a half miles from the lower end it is crossed by the western boundary of the Esquimalt & Nanaimo Railway land grant. Where the lake is widest, the only islands which it encloses are situated, the largest, named Cartwright, being only a few acres n extent, and no great height above the lake level.

No rivers of any large size flow into the Great Central Lake, he two largest being at the upper end, and named McBride and Drinkwater Creeks. Where the former creek debouches is a amous spot for trout. There lie some beauties of great size waitng for some angler who has the charm and tackle to land them. They have resisted the temptations of many a wary fisherman so ar. Here, too, mongst the reeds, a few geese are to be found. It is stated that they have been in the habit of staying in this quiet little spot all summer.

As will be seen from the map, the lake shores rise rapidly, an few points is there land which will ever be fit for cultivation; b the slopes are steep, they are covered with the finest merchant timber to be seen anywhere, and practically all the land adjoin the lake has now been taken up as timber limits. The timbe principally fir, with some hemlock and a sprinkling of white p which usually occurs in small bunches. The Esquimalt & Nana Railway Company has surveyed a line of railway to the lower of the lake, so that when it is built there will be no difficulty getting logs to salt water. There are no dangers to navigation the lake, the shores being steep, and the four small islands eas seen.

There are two main passes on either side of the lake; Ash Pa on the north, at the base of Thunder Mountain, leads to Ash Riv and the Alberni Valley; it is only 500 feet above the lake. On t south side, towards the upper end, is Taylor Pass to Taylor Riv which flows into Sproat Lake. The pass is 1,800 feet above the la level. At Indian Point are some very old Indian rock carvin which seem to represent a mythical fish.



A Mythical Fish Carved on the Rock, Great Central Lake.

Following Drinkwater Creek from the head of the lake is a trai to the Big Interior Mine. The trail has a gradual assent, bein steeper towards the end, till just below the falls from Della Lake a height of 1,500 feet above Great Central Lake is reached. Beyond this point the narrow valley rises rapidly till at a mile further on the head of the pass to Buttle Lake is reached at an altitude of 4,570 feet above the sea. At the falls referred to, the trail turns to the left and rises up a nearly precipitous mountain side, which is only made accessible by the bushes which cling to it; the height of the bluff is 2,075 feet above the trail below. When the top is reached the view will well repay the exertion of getting there.

Della Lake lies like an emerald surrounded by lofty and rugged mountains, its mirror-like surface reflecting back their wild beauty. The waters of the lake find their way through a cleft in the rock and shoot out over the top of the bluff, falling a thousand feet before reaching the rocks below. Following with the eye the narrow

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THE CANYON OF STAMP RIVER, WITH BLACK BASALTIC WALLS.

A CATCH OF SPECKLED TROUT TAKEN IN AN HOUR AND A QUARTER WITH THE FLY ON STAMP RIVER.

valley up which the trail winds, Great Central Lake can be seen, perhaps covered by a slight mist in the early morning. Standing at the edge of Della Lake, one is in an amphitheatre of mountains; to the south-west, high above, the Nine Peaks glisten like minarets in the morning sun, whilst lower down is seen the blue of the glacier. The tops of the highest mountains of this Big Interior Range are about 6,000 feet above sea level and 2,500 feet above Dalla Lake.

The mountains of the Big Interior may be called the backbone of Vancouver Island, shedding the water to the south down the Alberni Canal, to the north-east down Buttle Lake and the Campbell River, and to the west by Bear River into Clayoquot Sound. Standing on the Big Interior Range, as far as the eye can reach is a sea of snow-clad mountains, with here and there one grander than the rest rising to a height of seven or eight thousand feet. To the south from Della Lake is a pass leading to Bear River, flowing into Clayoquot Sound. The height of the pass is 4,000 feet.

For those who enjoy mountain scenery, the trip to the Big Interior Basin is strongly recommended. Great Central Lake can be reached by saddle-horse or buggy from Alberni. The journey up the lake can be made in a launch, and some enterprising individual will no doubt provide saddle-horses to do the nine miles trip up the trail. The last steep climb must be made with strong legs and arms, and can be easily done in two hours or less, with practically no danger, and when once at Della Lake the view and change of scene will well repay the trouble.

GEOLOGY OF THE ALBERNI VALLEY.

The Alberni Valley may be considered as originally a part of the cretaceous area on the east coast of Vancouver Island that has been broken through and separated from the east coast by the large igeneous mass known as the Beaufort Range of mountains. *This range is mainly a fine-grained, dark-coloured diabase, but

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*The following report is by Dr. Dresser, of Montreal, on a microscopic examination of this rock:—

No. 4,583.—*Country Rock, Beaufort Range.*—A fine-grained green rock having a rusty weathering. By the aid of the microscope you can see it is found to be so highly altered that no primary minerals remain. It is now composed of chlorite, epidote, calcite and a little iron ore. Remnants of the original structure show it to have been originally a coarse-grained eruptive rock. It differed originally from No. 4,580 in degree of crystallisation, but not greatly, if at all, in chemical composition, and so they may be parts of a single intrusion; No. 4,580 representing an original diabase, No. 4,583 a basic gabbro.

there is evidence that at some points it has penetrated a limestone strata. This is especially seen on that portion of the divide which lies between the Nanaimo Road and the Qualicum Pass, where limestone is seen in places, and where there are numerous limestone caves. While the main mass of the Beaufort Range is a diabase or a basic gabbro along the rim of the cretaceous area, there is in places schist and agglomerate.**

At numerous places the diabasic flow has penetrated the edge of the cretaceous area with its overlying strata of sand and gravel, forming at points masses of agglomerate. The cretaceous area is bounded on its eastern border by the Beaufort Range, and to the west the Somass and Stamp Rivers seem to mark its extent in that direction, shale and agglomerate being noted on the eastern banks of the rivers, while only diabase is seen on the western, with the exception of small basin-shaped areas on Sproat Lake, which survived the period of glacial errosion. To the south the sedimentary area probably does not extend more than three or four miles south of the Nanaimo Road, while to the north it extends up the valley till the divide separating the district from Comox is reached. A mass of diabasic rock has broken through the sedimentary strata of the valley. It is known locally as the Kitsuxis Ridge,* and is some two miles long by three-quarters wide, and rises to an average height of 150 feet.

The lower portion of Roger Creek runs entirely through shale banks, 100 feet or more in thickness; towards the mouth of the

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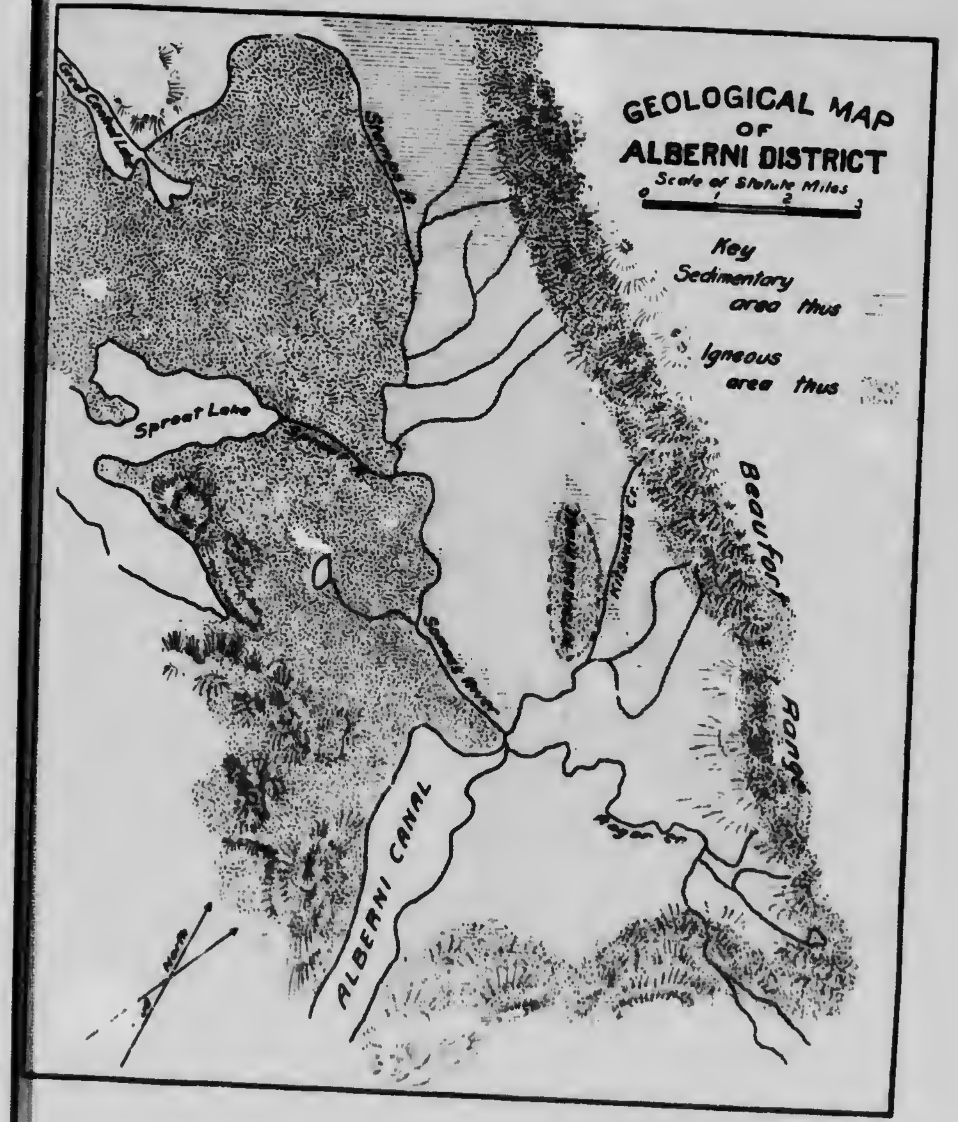
**No. 4,584.—*Schist from Niagara Creek.*—A fine-grained schistose rock having a gray colour and a slightly unctious feel. In the slide it is found to be a finely laminated schist consisting essentially of chlorite, biotite, sericite, with smaller amounts of magnetite, feldspar, quartz and probably a little talc. It is best designated as chloritic mica schist. The chlorite and sericite, at least, are decomposition products of the biotite.

No. 4,581.—*Conglomerate cast of Niagara Creek.*—This rock is conglomerate carrying pebbles of chloritic schist and quartz, enclosed in a muddy ferruginous cement. The pebbles are sub-angular or rounded. The cementing material, or matrix, is a fine-grained sediment freely stained with iron oxide. The rock is a conglomerate and so could not form an intrusion, but has probably been formed from the gravel bed in which it is reported to occur by the cementing action of iron- bearing water, perhaps from a recent spring.

*No. 4,580.—*Country Rock Kitsuxus Ridge.*—This is a fine-grained greenish gray rock which has a brown rusty weathering. Fine white seams of calcite appear on a freshly fractured surface. The rock effervesces readily when treated with cold dilute hydrochloric acid. In the microscopic sectio it is found to be a highly altered rock with no primary minerals remaining it now consists essentially of epidote, chiefly zoisite and calcite. It is a decomposition product of some fine-grained basic eruptive rock. The origina structure, as well as the mineral constituents, has been obliterated in the metamorphism which the rock has suffered. In general aspect it closely resembles much of the altered diabase of the Keewatin formation in the northern part of Quebec and Ontario.

WRECK BAY, WEST COAST, VANCOUVER ISLAND, FOUR MILES OF WHITE SANDY BEACH.

DELLA LAKE, BIG INTERIOR BASIN.


GEOLOGICAL MAP
OF
ALBERNI DISTRICT
Scale of Statute Miles
0 1 2 3
Key
Sedimentary area thus
Igneous area thus
Great Central Lake
Stamp R.
Spreat Lake
Somass River
Kitsuksis Cr.
Beaufort Range
Rogers Cr.
ALBERNI CANAL
North

creek the strata is contorted, but at two miles from the mouth it lies nearly flat; in fact, this prevails in the middle of the valley, but towards the edge the strata is tilted up by the upheaval of igneous rock.

A six-inch seam of coal was discovered at the town of Alberni in digging in a well, and another small seam has been uncovered by a creek higher up the valley. Whether workable seams of coal exist could be inferred from a careful comparison with the strata on the east coast and by boring, the most likely areas being the basin of Roger Creek and north of the Kitsuxis Ridge. Here the strata is less disturbed than at other points.

There is evidence that a glacier traversed the valley from north to south, gouging its own way down the Alberni Canal and melting at last where it met the warm waters in Barkley Sound, there depositing a moraine. This is seen by the shallow depth of the Sound (40 fathoms), compared with the depths in the canal (100 to 150 fathoms).

GEOLOGY OF GREAT CENTRAL LAKE REGION.

The eastern end of Great Central Lake is entirely bounded by basaltic rocks. Thunder Mountain, on the north side of the lake, is one of these, and rises boldly to a height of 3,200 feet above the lake. The top has rather a stratified appearance and portions of the rock might be taken for agglomerate; but this is only due to the peculiar manner of cooling. The rock would have been a diabase had it cooled under suitable conditions; it is now best classed as a basalt.* The same general rock continues down to the lake shores till Clark Point is reached. Here granitic rocks are first seen and continue pretty much the same on both sides of the lake.** On a

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*No. 4,586.—*Rock composing Thunder Mountain, Great Central Lake.*—A brown fine-grained rock, having an uneven fracture and showing stains of iron oxide. In the thin section the rock shows a porphyritic structure. The phenocrysts are soda-lime feldspar and pyroxene in a base of devitrified glass. The feldspar crystals extinguish symmetrically on the albite twinning plane at an angle of 32 to 35 degrees, thus indicating the composition of rather basi labradorite. The pyroxene is light-coloured, non-pleochroic and belongs t the diopside or augite varieties of this mineral species. In several cases the pyroxene encloses lath-shaped crystals of plagioclase, showing the latter t have been the earlier minerals crystallised and that the rock would have bee a diabase had it cooled under suitable conditions. It is now best classed a a basalt.

**No. 1,578.—*Country Rock from Clark's Point, Great Central Lake.* This is a coarse-grained light-coloured rock. The principal mineral constituent are feldspar, hornblende, biotite and quartz, with a little epidote. The feldspar consists of both orthoclase and plagioclase, the latter being nearly equa in amount to the former. The hornblende is green in colour, somewha pleochroic, with the common absorption scheme. The biotite is not in lar

ALBERNI FRUIT.

TOMATOES.

PEACHES

cliff at Red Gulch, on the south side, very prominent red stain is seen, and this ground might be worth prospecting. Also at Indian Point some float mineral was noted, where the country rock is granite. A short distance up Whittaker Creek nothing but granite was found, and McBride Creek was not examined at all. but there are reasons for believing that it offers a fair field to the prospector.

On going up the Big Interior Trail for the first three or four miles nothing but granite rocks are seen, but at about four miles from the lake, limestone, both as float and in place, was noted. In all probability, on the mountains to the north of the trail, there is a limestone and granite contact which may extend over to the McBride Creek County, and experience has shown that on this coast it is a good field in which to find ore. The ore body of the Big Interior Mine occurs on such a contact.

There is evidence to show that on Vancouver Island granite is the later rock, and where it penetrates the basaltic rocks of the Vancouver series, or, better still, a limestone strata, there we may expect to find ore, sometimes in paying quantities and sometimes not. The entire Big Interior Basin is on a limestone and granite contact.

While there has been a fair amount of work done, mining in Alberni has not got beyond the development stage, but a number of shipments have been made, the ore being taken out during the course of development. The ores down the canal and off Barkley Sound are largely copper, the mineral being chalcopyrite in a rather basic gangue, sometimes carrying a good deal of magnetite, which makes them very suitable for smelting with the silicious ores of the East Coast.*

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amount and is often intergrown with hornblende. Quartz occurs both in large individuals and interstitially. The structure of the rock is granitoid. It is therefore a rather basic hornblende granite. On breaking this rock, in order to make the section, a fine-grained, dark-coloured nodule, about an inch in diameter, was disclosed. It separated somewhat easily from the rest of the rock, and as it appeared likely to give further information of the character of the rock, a section (No. 4,587A) was made from it. It was found to be composed of the same minerals as the main rock, but to have a much finer structure. The bisilicates, hornblende and mica are probably a little more abundant in it, and orthoclase forms a larger proportion of the feldspar. It is, therefore, a "kugel" or nodule formed by some process of differentiation during the cooling of the original magma, and is not an inclusion of one of the other rock varities, as appeared from the hand specimen.

**No. 4,588.—*Country Rock from Slide, Indian Point, Great Central Lake.*—This is a gray, massive rock, having a rather fine texture. In the thin section it is found to be composed of feldspar, chiefly orthoclase, biotite and quartz, the quartz being very abundant. The structure is granitoid and the rock is therefore a rather acid biotite granite.

*For a detailed description of the different mining claims, see the Report of the Minister of Mines.

There are several mineral claims which have very good prospects, and, given better transportation and a fair price for copper, there is no doubt as to their being worked. As the timber is cleared off, new mineral deposits will in all probability be uncovered, such as has often been the case in the past.

If the smelting of iron ore by electricity reaches the commercial stage, Alberni offers a very favourable point for operation; there are good iron ores on the West Coast with suitable flux, there are large water powers in Alberni, and with railroad communication coal can easily be had from Comox.

OTHER INDUSTRIES.

Alberni will undoubtedly be the seat of many other industries: the combination of cheap power, cheap fuel, unlimited water and easy transportation will not long be overlooked by the manufacturer.

A word might be said for some point on the west coast of Vancouver Island becoming the port for rapid transit to the Orient: this will some day be a factor with the big transportation companies, and it remains with them to decide where such port shall be; but the development of the natural resources of the West Coast will build up one or more towns which will go a long way towards settling up the country and peopling this Island with a happy and contented community.

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ALBERNI FRUIT.

GRAPES.

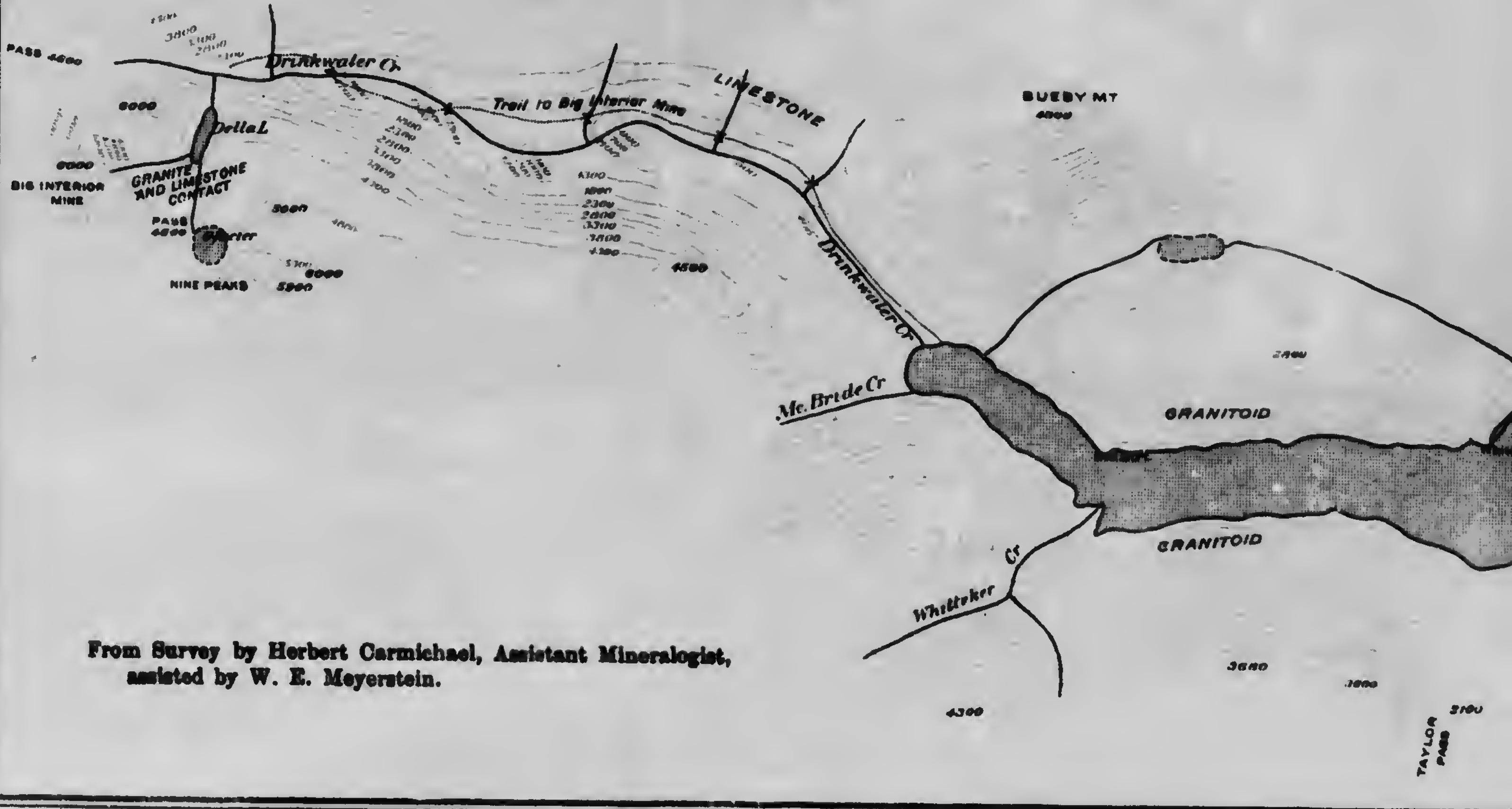
APPLES.

GREAT CENTRAL LAKE

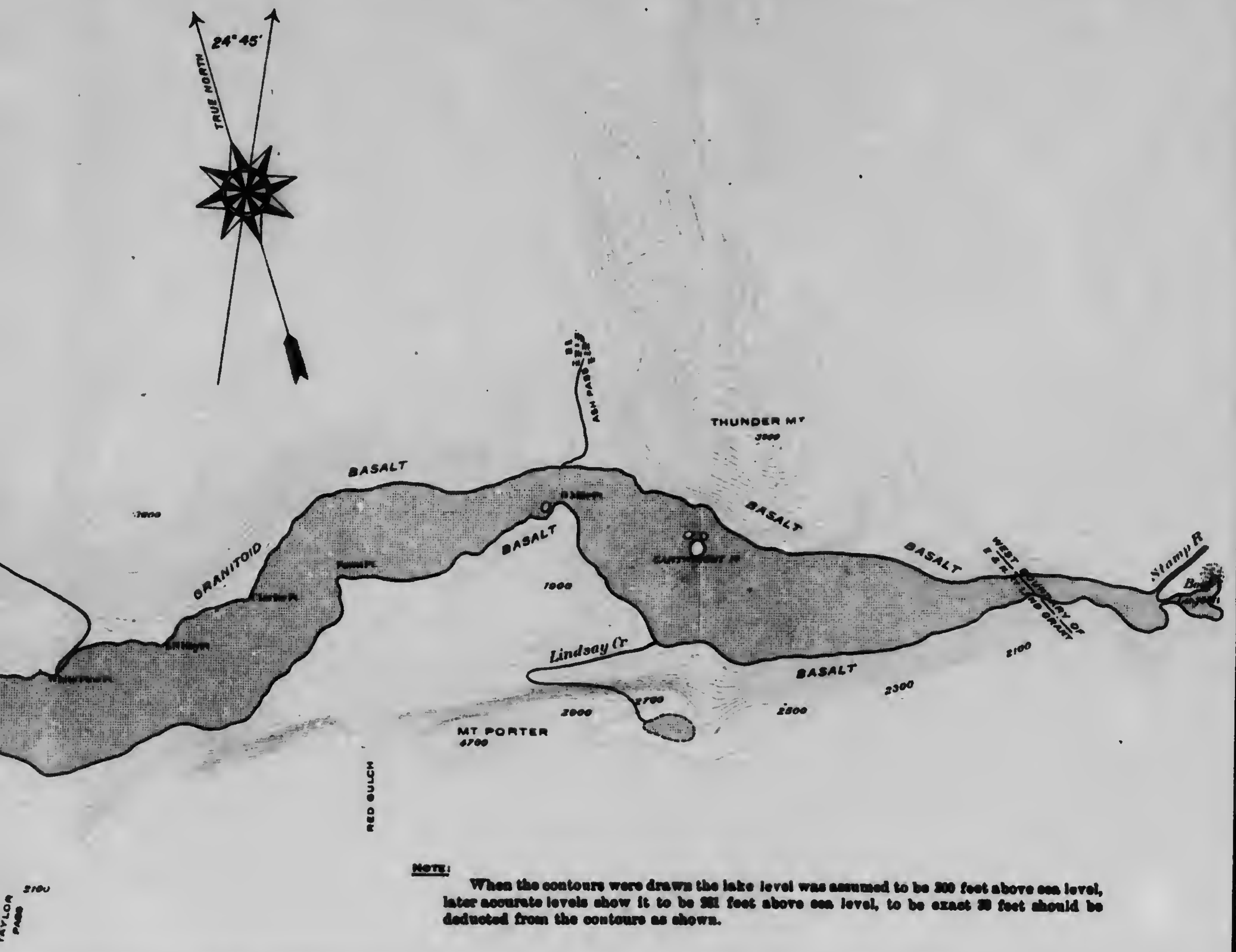
VANCOUVER ISLAND

SCALE: ½ INCH = 1 MILE

CONTOUR INTERVALS ROUND LAKE 200 FT.
CONTOUR INTERVALS BIG INTERIOR 500 FT. } **FOOT NOTE**
DATUM, MEAN SEA LEVEL



From Survey by Herbert Carmichael, Assistant Mineralogist,
assisted by W. E. Meyerstein.



NOTE:

When the contours were drawn the lake level was assumed to be 300 feet above sea level, later accurate levels show it to be 261 feet above sea level, to be exact 39 feet should be deducted from the contours as shown.

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