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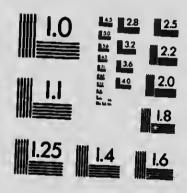
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# The Resources of British Columbia in



By C. CLIFFE, Editor of the Mining Review, Sandon.

Approved by the Government of British Columbia.



Minerals, Agriculture, Lumber,

and the

Fisheries.



.. 1901

To the Deputy Minister of the Interior, Ottowa

SIR:-

Mr. C. Cliffe, of Sandon, has submitted to me the MS, of a proposed pamphlet on the "RESOURCES OF BRITISH COLUMBIA," which, I understand, is to be subscribed for by the Dominion Government on the understanding it meets with the approval of the Provincial Government. In so far as facts and figures are concerned, it is substantially correct. I have much pleasure in stating, for your information, that I have gone carefully over the MS, and find that so far as I can judge, without checking the figures as to their absolute accuracy, it is well and carefully written, and is on the whole an accurate exposition of the capabilities of the province.

I have the honor to be Sir, your obedient servant?

(Signed) J. D. PRENTICE,

Minister of Finance and Agriculture

# BRITISH COLUMBIA.

# ITS RESOURCES AND OPPORTUNITIES FOR INVESTORS AND SETTLERS.

This, the most westerly province of the Canadian Confederation, is bounded on the west by the Pacific Orean, on the aouth by the 49th parallel of N. latitude, on the north by the 60th parallel, and on the cast, for its southern portion, by the summit of the Rocky M. Intains, and the rest the 120th meridian. This gives it an average width of about 400 miles, a total area of 380,000 square miles, and constitutes it, by nearly 50,000 square miles, the largest province in the Canadian Confederation. Settled as thickly as the older portions of the older provinces are, it would locate from 5,000,000 to 6,000,000 of people, the present population of the whole Dominion. This conclusion can be easily reached by observing that with its naturel resources developed, the country would be very nearly self-sustaining, producing as it does produce, nearly everything that can be grown and cultivated in any temperate climats, with the industries native to keep such a population profitably employed. Although its present population does not exceed perhaps 200,000, or the one twenty-fifth part of whet it is capable of comfortably locating and profitably employing, that few have brought the province to a very high degree of advancement. It has several illus of railway reaching all points of advanced settlement and others projected to meet all the requirements of the immediate future, with lines of first-class steamers plying on all its navigable inland waters, with good wagon reads and trails connecting with even most remota settlements.

The government of the province is fully representative and always what the people make it through their representatives, selected by manhood antirege.

The school system is the freest and the most complete in the known world. It is non-sectarian, supported for the most part by the state. Schools are established in every settlement where there are upwards of ten children of school aga (from 6 to 16) and taught by duly cartificated teachers. There are a dozen incorporated cities in the

prevince, having populations varying from 2,000 to 20,000 people. Besides these there are towns and villeges in all centres of permanen, population. In all of these there ere chu ... of all denominations, schools and colleges, society lodges of avery description, execulent hotels with ell modern equipments, stores carrying large stocks of all supplies required by settlars, as well as permanent residents, shops, factories, newspapers, protessional people, etc., etc., establishing the fact that though the country is new, it is not lacking in the spirit of progress and ad vancement. The enlubrity of the climate and purity of its water supply for all domestic purposes are other conditions that especially recommend the country to the intending settler. The climate, being tempered by the winds of the Pacific Ocenn, the country possesses none of the extromce of heat in summer and cold in winter experienced by many countries of the same latitude. The latter may he shown by the fact that all of the inland waters are navigated the whole winter throu ': without interrupt:on by ice or its consequences. As all the rivers and creeks that afford the water supply of the country originate in the hije above possible contamination from any cause, there is no further proof required of absolute pority.

With the government having done its chare in opening the avenues of trade end commerce, cetablishing a liberal system of education for the benefit of the rising youth, a system of government for the protection of life, limb and individual rights and nature having done its ebare in affording opportunities for health and wealth unaurpassed in any other country on the face of the globe, it ramains for those desiring employment, permanent homes under favorable auspices, and anse and profitable investments, whether large or small, to fully consider what there is placed before them in the following pages, in a business-like, practical manner.

# ITS HISTORY.

The history of the province, including its settlement, is short, but as is outlined above, not uneventful. But little was done in the way of colonization until 1858, when the discovery of gold in the valicys of the Fraser and other rivers led to a large influx of population from the United States and other countries, for placer mining, Prelous to this the white population was confined for the most part to a few settlements on Vancouver Island, the Fraser River and the employes of the Hudson's Bay Co., scattered over a large area of country, engaged in the fur trade with the indians. It was an easy matter for the adventurous miner to take a few days' supplies up the

France and other streams, by boat or canon, and bring down in dust obtained in washings, and repeat his labors during the season most favorable to such operations. Discovery, however, soon disclosed the necessity for a change in mioing methods. When it cares to an expicration of the bills wheoce the placer dust was ground and washed down by glacier and other operations of nature, in the churse of ages, and transporting the mioeral bearing rock there found to points available for large versels, mining became a different proliem. Even though the inland waters were cavigable, adequately proportioned boats to remove the ora from the place of discovery, if at the water's edge, nr whoo packed to it when distant and the importation of supplies to the scene of operations, required wagon roads and railways. Until these were built but little progress could be mads. From these remarks avec the casual reader can see but little progress in mining could have been made before the construction of the main line of the Canadian Pacific Railway across the continent and the province from east to west and other systems and their ramifications in branches, during the last few years. Though tode mining in aliver and tend commenced in 1887, in limited areas and quantities, no quarta gold mining began hefore 1893. To that date, however, \$57,516,587 worth of gold had been taken from pincer worklegs, or washings, come noing with \$705,000 worth in the year 1858. It is a conservative estimate to place the tetal value of placer got induction to date (June, 1991) at \$64,000,000. As stated, sliver lode working began in 1887, with a record of 17,700 ounces, valued at \$17,331, nr about \$1.00 per ounce. It has fluctuated in value and nutput from that year 'n this, running about 55 1-2 cents in 1898, and about 31-2 cents higher this year. Lead production is inseparable from silver mining in this country, the two minerals being always found together, though varying in proportions in different properties. To 'he uninitiated we may say that it is to the fact of this inseparable union of the two minerals, and both fluctuating salue, that the peculiarities of varying profits in silver-lead mining may be traced. Thus if silver should be up in te while lead fa down, n mine funning high in aliver values might be operated profitably, or a property high in lead values might he worked at a round profit if lead was up in value, though sliver might be low. fo the year quoted (1893) lend was worth about 31-2 cents and silver 551-2 cents; this year silver is 58 and lead but about 11-2 cents. In the first year's operations sliver to the value of \$17,331, as stated, was mined and lead to the value of \$9,216, at about 41-4 cents n pound. The total value of silver mined to date may be placed at \$15,000,000 and that of lead at more than half that amount. The first record of copper operations was in 1896, in the Nelson and Trail Crock districts,



BRITANNIA MINE.

when \$190,000 worth was taken out, and to-day it premises to become among the foremost of our industries, the Bonndary country,—that is, the southwest portion of the province,—proving itself to be especially wealthy in that mineral. The total value of copper mined to date may be placed at something over \$5,000,000. Coal was first mined in 1836, with a very email output, and to the present (June, 1901) our total output cannot be short of \$53,000,000 all told. There are, as discovery has gone, almost inexhaustible helds on Vancouver Island, on the Crow's Nest branch of the C. P. R. just wast of the Rocky Mountaina, and the Similkameen, in the south-west portion of the province, to say nothing of aevaral other localities but partially explored. The province has also large deposits of Iron, zino, platinum, but these will be dealt with in later pages.

#### MINING-GENERAL.

The province is now known far and near as a mining country, but though mining is its leading industry, its productions are by no means confined to its wealth in the howels of the sarth. To have extensive mineral wealth a country must be mountainous. From this latter fact this province has immense hodies of inland waters—noble rivers and heautiful lakes. These abound in fish which, with our salt water supplies, leads to one of our leading industries—canning. These large stresms in turn have ir the course of ages brought down immense alluvisi deposits forming in many instances extensive areas of the richest soil to be found in the known world. This fact alone, without any practices assurances of the past, we ld mark the country for extensive and profitable agricultural operations; also the growth of immense forests of valuable timber. These three latter industries will, however, be dealt with under proper headings later oo.

Although lode mining is becoming the hranch of the mining industry that is fast forgiog the country to the front, placers are still worked in many districts with great profit, and, as exploration is prosecuted, it is safe to say many valuable placer diggiogs will yet he discovered.

#### PLACER MINING.

As is mentioned above, placer operations were the first commenced in the country, which in any event would naturally be the case. Without roads or trails, the importation of machinery for lode mining was out of the quas-

tion. The pick, shovel and a few other rude implements were all that were necessary to enable the hardy adventurer to make his first discovery in the bars of the Lower Frazer River, where the washings of ages had landed them from the country higher up.'. A glance at the map will show the observer that the country is traversed by four chains or ranges of mountains, from north-west to south-east, generally speaking. The close observer will see the "leads" or mioeral bearing seams in the rock structure of the country lead from west to east; and as the glacier movements of past ages were from north to south, the mineral bearing rocks were more or less pulverized by them in their downward descent, leaving it for the rivers formed later on to bring down the pulverised minerals picked up in their courses to the ocean to the west. This theory would show the remains of the mioeral bearing leads superficially speaking are still in the billis, and there the prospector finds them, while their hases may be found in lower altitudes below even the placer workings. As silver-leed, copper sod other mineralbearing ledges were pulverized by the glaciers, one would expect e mixture of metals in the gold dust found in the placers, god so it is, varying from 10 to 30 per cent. In some localities silver so predominetes in the admixture az to call the dust silver placers. As the dust was first found on the hers of the Fraser, nothing was more neture than that its entire length should be explored, and as its source in the Carlhoo country was located, there also were the famous diggings of thet name leid have to the eyes of the seeker efter wealth. So successful were the operations a few years after that in 1863 the output fell but a few dollars below four millions. Following up the old glacier track in succession, came the discoveries at Quesnel Forks, Telegreph Creek, Atlin. end, Instly, those of the Yukon country, ail in the one prodigious helt. So fer in the history of the province the Cerihoo country has been the most productive in placers, having yielded upwards of \$50,000,000 of the precious metel. The Atlin country has in one year run up its collections to shout \$400,000. The districts around Fort Steele, Ashcroft, Telegraph Creek, Menson, Berkervlile, etc., have also yielded their quota, swelling up the grend total of placer finds to about \$64,000,000 to dete. It is safe to say thet, as the velleys between the other mountain renges are hetter explored, more extensive placers may yet be found to exist, but the working of them, on eccount of the depth of the dust (covered deep by the washinge of later years) its extraction may call for better eppliances then the pick end shoveleven hydrauliciog, that is found so satisfactory now in the Carlhoo country. It is not, of course, the duty of a publication of this cheracter to explain the operations of any particular machinery in miniog. This is dealt with exhanstively in publications for the purpose. Suffice it, then, to say water is drawn from creeks by a system of

canals and pipes and employed by improved methods in washing the beds where the mineral is known to exist. Last year (1900) the plants at Cariboo were operated 171 days; they washed 1,843,938 cubic yards of sand, which yielded 18 cents per cubic yard in gold, giving the company gross \$2,041 per day, giving the company a total profit of \$350,000 for the year. There is, in mining, any more than in anything else, no "Royal road to wealth." It was patience and perseverance that ied to the discoveries in the country of the past and it is only the same virtues that can unfold the discoveries of the future. The prospector of to-day has, however, untold advantages over his predecessor. He has all the supplies he may require in his labors at his door at any time, at the lowest possible cost, and a market at hand for the ready sale of the product of his labor. While the prospector of 40 years ago labored under the most extreme privations, his successor of to-day can carry on his operations with modern comforts.



RUTH CONTENTRATOR

# LODE MINING.

GOLD.

At the outset, it must be remembered inds mining in this country is simply in its infancy, the first sliver and lead having been extracted in 1887 and the first gold at Roasland in 1893. To even anticipate, then, what the future may he, is premature. It is certain that, considering the disadvantages with which working had to contend in the lack of capital, fluctuations in the value of silver and lead, disturbances in the labor market, etc., the industry has made as much headway as it has made in any other country in the same number of years, and developed as many properties on a paying basis as has any other country on the face of the globe, in the few years mining has been in operation. In this short time it has developed upwards o. 50 divided paying metalliferous mines, that have returned upwards of \$8,000,000 in cash to their owners, to zay nothing of the immense total of profits expended in that time in improvements in machinery, buildings, and other necessary equipments. This is the eating that is proverblally "the proof of the pulding." Aithough these are the rewards of mining operations so far he would be a bold man indeed who would venturn an opinion on ever the results of the next half century, so few of the districts have even yet been but partially exploited. There are thren or four mountain ranges traversing the country from one end to the other, with more or less regularity, with minor billis intervening. In the valleys, wherever reasonable exploiting has been prosecuted, plots of unsurpassedly rich placers have been discovered and wherever reasonable prospecting has been done in the hills, seams of valuable minerals have been found. On these, wherever reasonshie work has been expended, a large proportion of paying properties have been developed. Nature has for ages been carrying out its unfailing operations in these mountain ranges, carrying down loose rock and other moveables to the greatest depths below, covering the seams in varying depths. As a result, many a property abandoned by one prospector as valueless, has been found to be valuable by the next man prospecting workings further. While, then, under past operations a large percen age of discovered ledges has been found to be mineralbearing, it remains for later working to increase the number.

In mining, as in everything else, nature has her peculiar methods of bestowing gifts. As has been stated, so far hut a small portion of the province has been even moderately exploited, hut in those, minerals go by localities. Yalo and Kontenay, on the main land, and Alberno, un the Island of Vancouver, are the only portions of the country that have been even moderately traversed by the prespector, and in these the minerals bave their favorite loestitles and rock formations. The Slocan country, between Lakes Slocan and Kontenay, south to Nelson and north of the Canadian Pacific Railway (main ilne) and parts of East Kootenay, are found to he the favorite localities for silver-lead ores, with their limestone and slate rock formations. The Boundary country or South Yale is found tn abound in copper, and gold is found to exist in varying proportions over the entire area, being in greatest richness in the Rossland, Lardson, Ymir, on the main land, and the western portion of the Island, Texada Island heing especially productive. But as bas been said elsewhere, in no portion of the province has any mineral been found absolutely pure. Silver and lead, with small values in gold and other minerals, are always associated, and the same is true of guld and copper. In speaking of any mineral, then, we mean that which predominates in the admixture. Silver and lead, differing from some of the States across the line, have a partiality in British Columbia for lime and alate rocks, while gold and copper are found in the older-the granite formation, but even this rule In this province has some marked exceptions. These poculiarities of this province are more or less a puzzle to old miners from other countries, but they soon become a quainted with nature's selections here. While to the mineralogist and the man of science these are matters of much interest, to the practical miner they are matters of nuch less consequence. What the latter wants to know is where the ledges are to be found, the grade of mineral, and what it costs to extract it and land it at the market. The successful prospector regards contacts of different kinds of rock as exceptionally favorable to the existence of large icages of mineral.\* To the present the largest and most satisfactory gold-copper lode mines on the mainland are found at Rossland, Phoenix, Greenwood and Camp McKlnney, and in the west, on Texada Island, the Van Anda property leading there, as the LeRol does on the mainland. The Lubbe Phair, the Ralph, the Marhle Bay, the New York group, the Monitor group and Mount Sicker also on that island, are fast forcing themselves into prominence. This Island Texada is small, but 30 miles long by 6 in width, and lies between Vancouver Island and the mainland. The geology is very primitar and especially so when the ledge of the Van Anda is considered. The rock is a highly altered crystalline limestone, associated with dykes of felsite, at the contact of which the ore is found impregnating the felsite, and as depth is reached, harnite

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PAYNE TRAM.

and chalcopyrite occur, carrying good values in gold and copper. The workings are very similar to those of sil ciber gold-copper properties in the country—a eeries of shafts, winzes, drifts and levels, all well known to men clexperience. It might be here stated that this slightly varied, is the working system of all the gold and gold-copper properties of the country, the shafts being necessary from the height at which operations are commenced. The sliver-lead properties are, as a rule, opened by tunnels lower down the hills, which are either cross-cuts from outside to reach the ledges, or drifts on the ledges direct. They range one above the other and are connected by winzes and upraises, for the facility of operations, procuring fresh air and other uses. All told there are in the province ten gold properties, paying regular dividends; shout 40 more that have shipped from trial lots upwards, and the number almost innumerable on which more or less work has been done. The prices asked for thase are as various as the extent of work done upon them. The number of hands employed on these properties varies from one to 600 at the LeRol, Rosaland. The values of the gold-copper ores vary from \$5 to \$35 per ton, and perhaps run an average of \$18 to \$20. So perfected has machinery now become that \$5 ora can be mined at a profit, the rule of the country being the lower the grade the larger the bodies, and vice versa.

Although there is a liberal mileage of raliways in the province for its population, more roads are very much needed, through the Boundary, the Lardeau, the Windermere and the northern districts. Some of these are already under construction and when they are completed they will open up in those parts mines and properties fully that equal of any now in operation. In some of these districts, such as the Boundary, the Windermere and the Lardeau, there are already several mines ready to ship the moment rail facilities are available. The mineral is on hand, but the cost of transport without raliways shuts out possible shipping. To show the growth of this gold-copper industry, an illustration from the LeRoi will suffice. In its first six years it shipped 93,000 tons of ore, averaging gross \$14 per ton. For the first four months of this year (1901) it shipped 72,000 tons. It now ships as much per month as it did in its earlier days per year, and the same holds true of all mines that are worked regularly and at their full capacity. We may here quote the shipments of the other large properties of the Rossland camp:—The War Eagle, £2,250 tons for the first four years of its existence, and 13,000 for the first four months of this; the Centre Star, 16,700 tone, as a total for its first four years, and 37,363 tona for the first four months of 1901. The entire value of the output of the Rossland mines to nate is computed to he \$14,000,000. Camp McKinney has the Carihoo Mine, which has

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Eagle, , 16,700 he outich has proved itself very profitable to its owners, having yielded dividends of nearly half n million. There are other mines there also of much promise; but of their magnitude the freels cannot be gathered until a railway is built through that country and they are further developed. Ymir has its Yn ir mine, that has paid nice dividends, and others that a little more development will bring wall to the front.

The growth of this branch of the industry cnn, however, be more satisfactorily shown to the public by giving the output of all the mines to data, with the dividends, as follows:—

	ı	oz. of gold	Value
	1893	1,170	\$ 23,404
	1894	6,252	125,014
	1895	39.264	785,271
	1896	62,259	1.244.180
	, 1897	106,141	2,122,820
	1898	110,061	2.201.217
	1899	138,315	2,857,573
	1900	167.153	3,453,381
	1901	221,000	4,125,000
	Totals	851.G15	\$16,937,860
Tota	al dividends to date of certain properties producing above values:-	301,310	
	LeRol		£1 205 000
	Carihoo	•• ••••	478.087
	War Eagle	•••••	210,081
	Vmir		E45,009
	Ymir	• • • • • • • • • • • • • • • • • • • •	. 192,000
	LeRol, No. 2		144,000
	Centre Star	• • • • • • • • • •	175,000
	Total		
	Total		\$2,839,087

The reader will understand that to anything said at cut dividends, no reference can be made to any properties held by close corporations or private parties, which embrace most of the placers and many of the smaller, or rather younger, gold, gold-copper and silver-lead mines. In elements of these are not compolled to make the same returns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of what they are doing turns to the government the large corporations are , and as a coosequence no exact estimate of the same of the same

As yet copper mining is but in its initial stages, but enough is shown by these to prove the province must become a great copper, as well as gold and sliver-lead, coal and iron, producing country. The first shipments were made in 1894, a year later than the lode gold start, with a tonnage of 324,680 pounds, valued at \$16,234, nr about 5 made in 1894, a year later than the lode gold start, with a tonnage of 324,680 pounds, valued at \$1,615,239. We are without the exact returns for this cents a pound. In 1900 the shipments were 9,997,080, valued at \$1,615,239. We are without the exact returns for this year, but from the activity displayed in the Bnundary country it is safe to say the shipments will much more than

What has been said of the sppearance of the other minerais may safely be said of copper. Where in the province it may yet he found will all depend on the assurances of later exploitation. En far, however, the only districted in which it has been met with are: Rossiand, the Slocan, Nelson, Lardeau, Coast points, and the Boundary, the later district yielding it in much the largest quantities. As copper ore is bulky for its value, it is considered sond tusiness foresight to creet smelters convenient to the mines to extract the values from the nres with as little transportation cost as possible. To this end all of the mine owners are creeting their nwn smelters, there heing now large portation cost as possible. To this end all of the mine owners are creeting their nwn smelters, there heing now large fortation cost as possible. To this end all of the mine owners are creeting their nwn smelters, there heing now large institutions of this class at Trail (near Rossland), Grand Forks and Greenwood, with others projected at the Coast and other points. The ledges (copper-gold) are always very wide, and the ore hodies very large, giving employment in every mine to a large force of men, and year after year is certain to witness a larger output of this metal, as not every mine to a large force of men, and year after year is certain to witness a larger output of the Round-the demand for it in the arts and sciences is continually on the increase and the producing areas limited. The yield not every mine to a large force of men, and coast points is from a small percentage with other metals. That of the Round-the demand for it in the arts and sciences is continually on the increase and the producing areas limited. The yield not every mine to a large force of men, and coast points is from a small percentage with other metals. That of the Round-the demand for it in the arts and sciences is continually on the line of the producing areas limited. The producing areas limited. The producing areas limited. The producing areas limited. T

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The yield the Bound-The mines ole Bay, re-Coast produesr in 1900. The shipments of the mines of the Boundary country for the first nine months of this year (1901) are given as below, and are sufficiently indicative of copper mining becoming a great industry in the province:

	1900	1901
Old Ironsides and Knob Hill group.		167,973
Mother Lode		62,099
B. C	19,494	34.701
City of Paris	2.000	*****
Golden Crown	2.240	
Winnipeg		600
King Solomon		600
Athelstan	1,200	600
Carmi		885
Snowshoe	238	439
Brooklyn	150	41111
Jewel	160	******
R. Bell.		480
No. 7	••••	695
Sundry shipments	1.000	
Sunset	1,000	600
	*****	400
Total	98,781	269,922

The Boundary district embraces a very large extent of country, ail of which, as far as prospecting has disclosed the facts, abounds in large copper bodies. Everything in this portion of the province is on a very extensive scale, large and rapid rivers, high mountains, extensive plains and immense mineral iedges. Partly because of its being out of the way of general travel, that district of country enclosed by the 49th parallel and the Similkamean Diver has been overlooked by the prospector, but recently it has been found to be one of the richest districts of



BOARDING HOUSE, PECO MINE.

the entire province, shounding in immense ledges of copper. In that territory are Cupper Mountain, Nickel Plate, J. J. L., Copper King, and many other properties recently coming into public notice. It is a common occurrence to find the ledges from 75 to 90 feet wide in several parts of this extensive territory. As in the other districts, gold predominates in some of the properties of even this district, though copper, the while district considered, is the principal mineral. It is not the duty of a publication of this character to particularise localities, but it cannot be out of place to say South-western British Columbia should be n most promising field for investments, as no matter what past prospecting may have exposed in the way of natural wealth, there is yet so much to be explored that "the half has not been told."

#### IRON.

Although British Columbia is not yet known as an iron producing country, that is for mannfactures, considerable quantities have been taken out for finzing purposes. The localities from which this output has been made are Kamloops and Texada Island. Recently, however, very large deposits have been found near Kitchenst, on tha Crow's Nest branch of the C. P. R., and a strong company is being formed to open up the property. Should the expectations become realised, the proximity of the locality to the immense coal ficids at Fernie, Michel and other points in that district, would undouhtedly lead to extensive manufacturing, as freights would be insignificant. It is also known that at Chemainus, on Vancouver Island, there are extensive deposits. In several ir stances the evidences have been traced for many miles. Wherever cuttings have been made along the ledges, ore has been ancountered at various depths, depending on the quantity of soil and gravel covering. In some instances cross-cuts have shown 20 feet and more of solid ore, the quality being equal to the highest expectations, as any showing as high as 65 per cent. of pure iron, quite free from suiphur, phosphorus and silica, so frequently found associated in other mines with high grade ore. As with the deposits at Kitchener, so with these—they are near the immense coal fields of the Island and tide water, which facts should assure extensive manufacturing later on. With present assurances o' Iron and the known quantities of exceitent coal. It is not too much to believe that eventually British Columbia will become the steel rall manufactory for many of the rallways of the continent, which means the suployment of much labor and a large consumption for the agriculturel and similar products of the country.

## PLAT. NUM.

Enough is not yet known of the resources of the country to give essurance that this metal will be found in any large quantities. So far the production has been almost wholly from placer mines in the vicinities of Quesnelle, North Bend and the Similkameen districts. It strongly resembles black sand when found, and therefore much may have heen thrown away as useless in the earlier operations of the country. As, however, it is worth ahnut \$21 per oz:, its value mey create more attention for its production later on. Even in lode mining, which is now hut little hetter then 10 years under wey, later on more attention may be given to this precious metal and procuring it mey be-

## SILVER-LEAD.

All authorities agree a knowledge was had of these minerele in ledges in the country at 2 very early day. Some credit David Douglas, a noted hotanist, with heving discovered the Blue Bell property, near Pliot Bay, in the early twenties, while searching the hills of that locality for hotannicel curiosities. Others say the existence of lead was known to the Indiane even earlier than that; that they used to use the mineral in making hullets, and communicated their secret later on to the Hudson's Bay authorities. Anyway, it is agreed this was the first property known to white men in the country, and the knowledge was general at an early day. Other properties were shortly after located in that neighborhood, and a smelter was erected, but the cost of fuel, the absence of suitable fluxes, etc., caused it to fall into dieuee. In the early eighties several properties were located, chiefly around Amsworth and throughout the Slocan country generally, but nothing was done in the way of shipping, chiefly because of the absence of facilities, until 1887, and that year \$17,333 worth of eliver and \$9,216 worth of lead was exported. Even though the export facilities were supensive, the prices, silver at \$1.00 per ounce and lead at 4 cents a pound, en-

In dealing with operations the twn names are used together for the most part, for the reacons the minerals are always found together in the ledges, differing in values and proportione in different properties, it is true, but always together, all the same. In some mines eliver value runs as high as 500 cunces and even much mure, to the ton,

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PAYNE OREHOUSE.

with lead as low as 10 per cent., and in others again lead gives 90 per cent., while sliver may not reson more that a few onnces to the ton. Various theories are also set forward for the deposit of these and other minerals in the isages, but they are as often destroyed by the assurances of later discoverlas. It is not, nowever, in these matter the prospector or the capitalist is metorially concerned. What he wants to know is when and how the minerals are found, what it costs to axtract and market them, and what their value when disposed of.

In the present the output of sliver-lead and lead is for the most part limited to the Kootanay district, the Slocan portion of it haing the heaviest shipper, with small chipments from the Osoynoos division of Yale and a few Cosst points. In fact, excepting the shipments of the North Star and the St. Eugene, in East Kootenay and the Sliver King mines at Nelson, the Siocan, a small district of country between Lakes Slocan and Kootenay, about 40 x 75 miles in area, has to the present exported over two-thirds of tha product of the country. There is every reason to helieve the Lardeau country, though possessing a fair proportion of gold and come copper, is very rich in allver and fead; and when the railways being constructed this year are in operation, that dietrict will become a heavy exporter, a many mines there are in a well developed condition, awaiting shipping facilities. As has been said hefore, nearly all the miner of the country carry values in all the precious matale; but they are invariably named after the predominat-

It has been intimated that the geology of the gold and copper districts of the province are a puzzie to acientific men of other countries, and that of the sliver-lead districts in certainly no less so. The lower or granite or granitoid rocks have been pushed up through the metamorphosed, mostly slate formations of later periods, and occupy much of the whole area. They differ in appearance and color, some of them being grey, others characterized by black mica, and frequently with much dark hornblende. In some localities, again, they are coarsely porphyritic, showing extreme ignecus action in long ages ago. Everywhere the evidences of eruptive agency are visible on avery hand, in many places volcanic. Generally speaking, the mineral is found in contacts of granite and slate, the latter heing the country rock or general rock of the districts. Numerous fauite, or breaks end elips in the fissures, are found in the state and limestone formetions, which occasion many impediments in the way of speedy development, and discouragements to the Inexperienced miner. They are doubtless the result of lateral and upward pressure to which the surface has been subjected in the cooling process of hy-gone days. To the experienced miner, however, they offer hut little obstruction in the way of continuous progress,

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There are two principal theories afloat for the formetion of silver-lead deposits, "the igneous" and "the lateral secretion"—In short, it may be added for the deposit of all the other metals as well as silver and lead; but as the results of practical operations seem to prove and disprove each by turn, but little is to be gained by referring lengthily to either in a work of this description. These are matters for men of science to deal with and not practical miners or men of capital.

For the information of the curious we here make a short reference to the terms that are continuously met with by the general reader on this subject. The direction of the fissures or veins across the country is called "the etroke"; the sides of these fissures are called foot and Langing walls respectively. The course of the mountain ranges to a large extent determines the direction of the strokes, and they are for the most part north-westerly and south-westerly. In other words, the suhterrsnean forces that threw up the mountain ranges determined the like of the fissures or fractures. As all the veins enclosing the minerals are irregular in width in given distances, the sides in some pinces coming together, forming "pinches," the metal ledges in the seams are irregular In thickness. The bodies of metal between pinches are called "chutes." Small hodies eeparated by quartz or other ledge matter than minerals are called "horsee." When the chutes are small thoy are called "l'ineye" or "nockets." The explanation of these pinches is that the sides in coming together again after separation by under forces, drop irregularly, one passing the other in movemente. This pinching out, to the inexperienced miner, is a puzzle, and often leads him to ahardon his claim as worthless, only to he taken up hy a successor more determined, who finds the ore again later on in his extended tunnel. Very often width of seam and grade of ore are characteristic of locality; but almost invariably the recompense of nature is observable throughout, that is where the ore is low grade it is abundant, and where small in hody it is very rich. It very seldom happens that the mineral or "pay streak" occupies the full wi2th of the seame, especially when wide. In such cases the associate matter is called "gangue," mostly quartz "talo" and such substances.

In allver lead mining the ledge is found by prospecting (explained elsewhere) on the alle hill. Cross cut tunnels of tunnels of the ledge are driven in at various distances apart. These are connected by upraises or winzes, and the ore and useless rock reparated and taken out by cars. When the grade is low concentratore (mills for the rarpost) are erected to remove all the rock and leave nothing but the pure metals for shipment to the emelters.



There are now some 25 concentrators attached to the largest mines of the province and six or seven smelters in the country, with a refinery projected, for separating the metals in the builton.

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As nearly as can be ascertained, there are about 250 silver-lead mines in the province that have shipped more or less are and the number of prospecte on which more or less work has been done would run well up into the thoursails. There is hur a moderate percentage of those capable of chipping regular exporters, the drop in values of late years, labor troubles of the country, litigation between partners, always inseparable from speculation, and deficiency of shipping facilities; but all of these are being fast overcome. It is a safe figure to place the regular shippers at 75 in number. "If the shipping mines in the province last year (1900) were 99, of which only 60 shipped over 100 tons.

In East Kootenay the most important shippers are the North Star and the St. Engene, at Moyle. These are very important mines and as the projected railways are built the districts of country surrounding will produce many more equally important. The St. Eugene carries a fair proportion of zinc, which induces the ownere to ship frequently to Beigium, where they find a good market for their product.

In the Nelson district, the largest sliver-lead property is the Hall mines, having a amelter connected with it that does a large husiness with many of the Slocan mines. Its annual output is about 30,000 tons of low grade ore.

As mentioned hefore, however, the Slocan le the great silver-lead producing district of the country, grouped according to the towns to which they are contiguous. Aliasworth, on Kootenay Lake, has six or seven that have shipped, and as many more in a high degree of development. The ores are mostly low grade, but with more concentrators to reduce the cost of transport, they will become valuable. The Highlander is the chief property.

Kasio has the True Bius and two or three other properties on the verge of chipping, with several tributory on Kasio Creek.

Whitewater has the Whitewater, Whitewater Deep, both good shippers, and a dozen others that have shipped smaller quantities.

McGulgan has convenient to it the Ramhler, the Washington, the Antoine, Suzaets, 1 and 2, and five or six others that have shipped profitably for the owners.



Cady, two miles from Sandon, has the Noble Five, with its concentrator and excellent promises, the Trade Dollar, the Vulture and seven or eight more in the experimental stage.

Sandon, the centre of the sliver-lead district, has grown to be a very important mining contre. Its leading only and exact the Payne (the largest dividand payer in the province), the Last Chance, the Reco, the Omencon Boy, only exact the Payne (the largest dividand payer in the province), the Last Chance, the Reco, the Omencon Boy, only exact the Payne and the Ivanhous have all got extensive in different degrees of advancement. The Slocan Star, the Ruth, the Payne and the Ivanhous have all got extensive improved concentrators.

The leading properties at Three Forks are the Idaho, the Alomo, with ite concentrator, the Manitou, grown greatly of late, and the Corinth; but like all the other points, this place has also many others that have shipped and are under improvement and development.

The chief property at New Denver ie the Boeun, with the California and the Hartney ac regular shippers.

Silverton has many noted mines—the Enterprise, Alpho, Emily, Edith, Hewett, Comstock. The next two or three years will see the place with a dozen or more regular shippers.

Slocan, at the foot of Slocan Lake, has the Oriington, Black Prince, Two Friends, Bondholder, Chapleau, Specult. It.tor, Phoenix, and perhaps a dozen more that have sent out more or less minaral.

At every one of these places there are scores of other properties in their first stages of development that, it is confidently believed, will rival any at present in operation. What it is most desirable to point out to prospectors and possible investors is: there can, in advance of expenditure in development, he so absolute assurance of them any property may eventually prove itself to he. There is the experience of the past, and that is all that can be obtained. The history of mining in the country has, however, proved that, for investments, there have heen as many profitable mines opened up in British Columbia as in any other country on the face of the globe, and this of itself is sufficient for capitalists familiar with the industry,

The productions of sliver and lead and their values, since the inception of mining in the country, in 1887, are given herewith;—

	est 1	700 .	EMAD	
Year. 1887 1888 1889 1890 1891 1892 1893	Oz. 17,690 4 79,780 53,190 70,427 4,500 77,160 227,000 746,379 1,496,522	Value. 17,331 75,000 47,878 73,948 4,000 66,935 195,000 470,219 977,229	Lbs. 204,800 574,500 155,100 nil nil 808,420 2,135,02- 5,862,523 18,475,464	Value. \$ 9,216 29,818 6,498 nil nil 82,864 78,998 169,875 638,255 721,884
1894 1895 1898 1897 1898 1899 1900	1,496,522 3,135,343 5,472,971 4,292;401 2,939,413 3,958,175	977,229 2,100,689 8,272,838 2,375,841 1,663,708 2,309,200 \$13,649,808	24,199,977 38,841,185 31,693,559 21,862,438 83,358,621 206,081,558	
Totals ····	22,570,953	\$19,019,000		nuis in diffe

The prices, condition of the labor market, have had materially to do with the outputs in different years. We now give helow the shipments of the Slocan mines for the present year (1901) to the 1st of November:—

	1,808
ayne	1,230
set Chance ****** ************************	0,401
locan Star	493
uth	1.00
ast Chance	400



	2,023
gewett	1,265
Merican Boy	1,117
hoe	682
Sunset (Jackson)	127
	64
MO - 33-1	5,048
A 50	40
Water Malanda	566
	140
	155
Disch Delno	215
Managements and a second secon	20
nettles Chanle	279
Dage	63
Bonnet (Can C. P.)	
William Water	
Water Tiere	
D.2 Town	
Andrina	
Once Boss	
Wentles	
Waitable	
Bondholder	. 26
Ramhler	. 2,500
Surprise	. 200
Kaslo Group.	. 10
Kaslo Group.	

	站
Chapleau	20
	10
	60
	40
Mary Durhaot	0
Buffalo	
Total	23,900
following are the dividend- of the silver-lead properties to date:—	
following are the dividend. of the salves to	Amount.
Mine.	1,438,000
Mine. The Payoe, Saudon	450,000
Slocan Star Ruth	\$56,000
Ruth Reco	292,000
Reco Idaho, Three Forks	
QV	



FREIGHT WAGGON AT YALE, B.C.

Whitewater, Whitewater	250,000
Whitewater, Whitewater	210,500
St. Eugene, Moyle	220,000
Hall Mines, Nolson	145,000
Last Chance, Sandon.	237,000
North Star, E. Kootsnay	1\$0,000
Rambler, Cariboo, McGuigca	50,000
Noble Five, Cady	50,000
Best, McGuigon	50,000
Goodenough, Sandon	40,000
Jackson, Whitewater	35,000
Gloss Boy Stades	30,000
Weshington, McGuigan	20,000
Two Triands, Siccap	
Athabages Nelson	20,000
Ones Bess Phres Forks	25,000
intelna McGuizon	20,000
Guerrina M	20,000
Bosum N. Denver	12,000
Warm Nelson	10,000
Monitor, Three Forks	20,000
Total of silver-lesd	<b>\$4,6</b> 09,500
Total of gold mines	2,829,087
Total dividends	<b>\$7,548,</b> 587

To these figures must be added the profits of properlies owned by closa corporations and private parties, who are not compelled to make returns to the government, which cannot be short of \$750,000, making a grand total of over eight millions of dollars to date.

What we desire most particularly to impress here upon the general reader is, that this has been done in a new country, with very ilmited capital and by hut shout 4 per cent. of the population the country is capable of comfortably and profitably locating. Every mnn cannot in any mining country he expected to strike rich properties; but as there are openings in Britiso Columbia for twenty-five times its present population, with its mining but just begun, it needs no further argument to show the intending settier and investor that no country offers better loducements than this.

#### HOW AND WHAT TO PURCHASE.

It goes without saying that any man can understand prices of properties must vary as the blades of grass in the field—that they must all depend on the locality and conditions of the property, having due regard to the avariciousness of the owner. As with everything else, every holder wants all he can get and often more, too. Generally apeaking, however, the hest time to huy is when ore is first reached in the property. The intending purchaser knows he has then the making of a mine of some magnitude, that all that is in it is before him, and enough wealth is not disclosed to turn the head of the holder. In every case an inexperienced capitalist should first fortify bimself with the assistance of a reliable experienced mining man and depend largely on his advice. There are eccess of such men in the country and their advice is always valuable. The writer knows of mines in this country that have been hought for less than \$3,000 that have paid over 100 times that amount in dividends; others again pay working expenses after a few hundred dollars have been expended, and of course some never pay. The country, however, has openings for all classes. The man who wants to take his \$5.00 outfit and some provisions, can find his field in the placer diggings; he who wants to prospect and sell his locations to the capitalist has plenty of field before him; the man with a few hundred dollars in hand who wants a property that will pay its way from the start can find his ideal in the silver-lead prospects; and, of course, the man with ample means can procure developed shipping properties in all coroers of the country.

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SCENE OF TRAIN ARRIVAL ON K. & S. RAILWAY.

#### PROSPECTING.

Our reference to metalliferous mining in the country cannot be better closed than of describing the methods of the prospector. He imagines, of coarse, he can find the indications he is after on the surface of the rock, and so he can; but for the long ages that have intervened between the depositing and the present, the seams are now for the most part covered with loose rock that have rolled down, the remaine of vegetation, end other such as cumulations. The nester to tho top of the hill he approaches, the less the accumulations, end as a result, when uncovered by snow, the summits are the favorite fields for the prospector. Evidences of the existence of minerals are not wanting at the hases of monntains, or even in the guiches traversed by the etreams. There are cometimes assurances, ledges extending from summit to summit of hitis, and thet in the veiley traversed by a summit fed stream broken pieces or float ore or even placer dust, when not washed too far down, mey be seen. Sometimes snow or land-slides and the uprooting of trees, expose iedges on the hill sides, where they are seen by the prospector. The most common means, however, is thie: The prospector, some distance down the hill, finds a piece of ore, changed and worn it mey be by the action of the elements through ages. The prospector knows this has been hroken from a creating or capping of a mineral lead. He considers the lie of the hill, to escertain whether it has been brought down through a regular or sinuous course, hy a slide or rolled down by the force of gravity. After fully measuring all these surroundings, he etarts up the hill, pick in hend, testing the rock at intervels, until, it fortunate, he discovers the original conrce of his find. He marke the spot, stakes out the area allowed by law. registers, and then he is the owner of a prospect or claim. Hie later operations under development, as explained elsewhere, show what he has discovered.

The government has divided the mining sections into conveniently sized mining divisions, in which there are Record Offices, at which the prospector or mine owner can transact all his necessary legal business. These of fices are so located that no prospector or miner is at any time more than from 5 to 15 miles distant from one.

## COAL

It is not alone in the metalliferous cres that British Chinmbia is especially wealthy, as its coal deposits are now known also to be among the largest in the world. Operations in the latter were commenced on Vaucouver Island as

the methods the rock, and eams are now ther such acsult, when une of minerals are sometimea mit fed etream imes snow or he prospector. plece of ore. this has been whether It hes gravity. After rvnls, until, if lowed by law.

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as explained

posits are now suver Island as amount quitn a percentage was converted into coke. The chief points on the Island at which large deposits are known, from workings, to consist, are Nanslmo, Protection Island, Wellington, Ladysmith, Union. Alexandria and Quataino. The principal markets so far opened up for the Island production are Australia, American West Coast and the Orient. The methods of mining are very similar to those in use in the mines of England.

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The lest couple of yssrs heve disclosed the fact that iccalibles on the mainland slso abound in "black diamonds." At the time of the first surveys for the construction of the C. P. R. through the Crow'e Neat Pass, immense beds were found to exist, where row the flourishing towns of Fernie, Mehel, etc., are growing in prosperity. Nothing, however, was done with these deposits until three years ago, when the Crow's Neat breach of railway was huilt in their vicinity. The pest yeer these mines heve turned out over 300,000 tons of coal, half of which was converted into coke. The smelters of the mining districts ers likely to become exiensive customers for the product of these minus, with the prospect of American smeiters leter on. These mines employ some 800 hends eltogether. Still leter prospecting has shown that immense heds of this mineral exist in the Nicola Vsiley, Peace River, Skeena River, Queen Charlotte Islands. Atlin and the Similkemeen country, in the south-west portion of the province. Though lightle, to a limited extent, eppears on the surface in ell the mines, the hest of hitumicous coal shows likely in all the lower strata. A new company has been formed to work the Similkameen heds and if the reliwey goes through then the coming summer it is safe to predict that portion of the country will be the scene of great mining activity. The total value of coel produced in the country to date runs to about \$52,000,000.

Prospecting for coal differs somewhat from searching for the other minerals, in that the heds of the creeks and abrupt hill-sides are chiefly examined. In these the evidences are easily discernable if coal exists. When coal is found the lands can be got on most alvantageous terms from the government, and they always turn out a profitable investment in being freer from chances than metalliferous mines.

To sum up, the value of the output of all the mines of the country from the first operations may be placed as follows:--

Coal and coke	\$ 52,000,000
Placer gold	64,000,000
Lode gold	
S.lver	16,000,000
Lead	10,250,000
Copper	6,500,000
Other minerals, say	1,000,000
Other minerals, say,	
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\$100,250,000

In some instances the values for the year ending June, 1901, are estimated.

In all there are 150 metalliterous mines in the province that have shipped more or less ore, and last year there were 3,800 men employed in the metalliterous mines and about 4,000 in the coal mines.

When saying British Columbia offers unequalled opportunities for the settler of capital and the man of resoin tion and energy, for proof it is only necessary to refer to the accomplishments detailed above of a population ranging are a a lew hundred in 1838 to less than 200,000 at the present.

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· AGRICULTURAL SELLA

## AGRICULTURE.

The general opinion of statesmen is that when the halance of trada is in favor of any country—that is when it is exporting more than it is importing—it is no a fair " by for commercial success. Under such circumstances, British Columbia has been on the road to eventual success from an early date in its history, its exports having long since exceeded in value its imports; and the indications are it will graw more and more so every year. It will al ways he a heavy exporter of minerals, and later, as manufactures become more developed, of their products; and will, when its agricultural resources become more developed, raise sufficient of nearly all the necessaries of life to make the country self-sustaining. Under such auspices an country cau help becoming wesithy and progressive. With the resdiness with which farms can be put under cultivation in Manitoba and the Territories, the surface being for the most part prairie, those parts will naturally attract the attention of farm settlers for some time to come, but the peculiar advantages of this province must tell in the end. Large farms can be put in shape on many portions of Vancouver It snd, the Vsiley of the Fraser and other large rivers on the mainland, the Okanagan, the Similkameen, Windermere, Chilliwack and many other portions of the mainiand; but it is not yet a settled fact that large larming requiring a large expenditure for heip is always the most profitable in this or any other country. When size alone is sought after the mixed principle, that ever enis in the hest profits, is always neglected. Even in Manitoha and the Territories, with all their advantages for grain growing on an extensive scale, it has ever been found most profit able to cuitivate cattle raising, dairying and the other b anches of mixed farming as well. In this province, as far as experience goes, no farmer hopes to realize the best results from farming operations without recourse in the mixed enterprise, adulng fruit growing as well. There are wrecks of attempts in this province as well as all corners of the Canadian Territories; but investigation proves this is no fault of the industry either here or eisewhere. Thousands of young Englishmen, and even young men of other countries, educated for the professions, come to this province as well as to other parts of Canada, or are sent here by experimenting parents, to cure them of idle habits, and

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set up in farming. No one could expect anything but failure from such experiments; it comes as naturally as the sun rises in the east and sets in the west, and farming gets a "black eye" in consequence. If such young men were first compelled to work on farms with good farmers at what they were worth, if observing they would become infinitely better fitted for working better ventures on their own account.

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As the province is geographically in two sections, Vancouver Island and the mainland, for convenience sake it may he as well to deal with each separately, remarking at the outset that, except in the extreme north of the mainland, wherever soil is found everything that can be grown in any temperate country on the face of the giohe can be grown luxuriantly in British Columbia, always hearing in mind the failures the results of inexperience and lack of energy found in ail other countries, will also be found in this. It is not enough that a man should even possess a laudable desire to succeed to make a success of farming any more than any other hasiness. Nothing can take the place of energy and experience, and men who fail in any husiness, farming as well as anything else, from their reports do a country aimost irreparable injury. The fact of failure is always advertised, but it is rarely or never overtaken by the cause. If reports of failure, in any husiness, only reached the ears of people of the same class as those who failed, the matier would be of little consequence; but as they as often reach the ears of those well fitted to take up the enterprise, who are left without proper explanations, acrious injury often follows. The failures of British Column his have locked up a certain area of country mostly on the Island, that should now be a heavy producer, supplying the mining districts of the country. Many of these abandoned farms have some improvements on them in the shape of spaces of cleared land and huildings, and in some instances young orchards. The successful and experienced farmer of any country, who is not very familiar with the experiences of the pioneer, will find these openings especially to his liking. They give him a much better climate than he is accustomed to, a richer and more productive soll, and the hest of markets, as there is home consumption aimest at his door for everything he can possibly raise, saving the expenses of heavy freights. A few years' work on such properties and they will ensure the ease and comfort so much losired by deciping life. There are, of course, many other districts that have never yet been settled even by the "experimenting farmer," and these in thir virgin state are rated as wild lands.

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As may be expected, the country around Victoria, on the Island, is well settled, highly cuitivated, and any farms that may be offered there command a high price; but in distances removed, in all directions, both government and railway lands may he had at very moderate figures, even some farma with improvements, from \$6 an acre up. Cow ichon, including the Cowichon, Camiakon, Quamican, Snmenes, Schalton and Seymnur districts, is one of the most flourishing helts nn tha Island, and therefore one of the most advanced in the province. Through it runs tha E. & N. railway. It is midway to Nanaimo, and centrally localed as regards markets. As in the most favored parts, 3 raises fina fruits, grasses, cereals, roots, vegetables, and in fact all other crops. Dairying is carried on very extens tvaly, a large creamery being in operation for some years. The municipal authorities have so economised that taxetion is very light. Further nn lies Chemaimis, an aqually good district, and then Nanaimo, which & includes many large actiements, presenting excellent openings for mixed farming. ' Improved properties in these parts command from \$15 to \$20 an acre, with government lands at \$1 and railway forms from \$1 to \$3. There is much good land on Hornhy, Denman and Lasqueti Islands, close by and easily accessible, on which cattle ranching is the favorite occupation. The Camox district, north of Nanaimo, ia famnua as well for its agricultural products as its coal flaids, By the latter the farmers have an easy market at hand for all products. Most of this land is arable, but little of it heing hroken hy hills or mountains. A tract of land 60 miles long hy some 10 in width forms a hench between the sea and the mountains, which is admirably adapted to agriculture in its various forms. The aurface is undulating, heavily timbered in places, with many marshes and meadows easy of reciamation. Several valleys are cnt through from sea to mountains and these are especially fertile. All of this bench land will produce as excellent crops as can be produced anywhere. In weight the soil varies and the cropping should range accordingly. Dairying is also carried on here, but to a more moderate extent than in other portions of the agricultural country. The Valdez group of islands in the Narrows embrace sufficient lands for many large-sized farms. All the grains are known to graw here, to the satisfaction of the agriculturist, and cattle and poultry raising and dairying are successful wherever tried; but so far none of these branches have been undertaken seriously by a thrifty class of white population. Alberni, at the head of Alberni Canal, is another very Important agricultural district, 40 miles from the Pacific, and a little less from the Gulf of Georgia. It is a valley of 200 square miles, having an exceptionally mild climate, with a very plentitul rainfall. Of lale, in addition to ite agricultural capabilities, it is known to possess large deposits of gold and

copper-hearing quarts. These discoveries invariably lead to the location of a large consuming population, where ates the ready markets. The country is also well supplied with roads and such other improvements as make the lot of the farmer one of ease and comfort, and his calling profitable. This is a district the man in quest of a comfortable home and a profitable farm should not be slow to examine.

The San Juan is in the southern portion of Vancouver Island. The soil, like that of most of the Island, is of al-Invial deposits, and is very productive; but withal the enterprise has not been prosecuted very systamatically. There are there perhaps 5,000 acres still for pre-emption.

It may be gathered from what has already appeared in the mining section of this pamphlet that the mainland is not as fully explored and settled as the Island ,and especially the interior and northern portions of it; but enough is known of it from the experience of settlers who have spent many years in even these, to suahle one to speak with absolute certainty as to their agricultural areas and producing capabilities. The most noted districts, as far as cultivation has gone, of this portion of the country, are Chilliwack, Okanagan, the Fraser River Valley, Peace, Blackwater, Nicola, Buikiey, Lower Skena, Belie Prairie, Similkameen, Naas Alin and other districts of lesser note. In fact the valleys of all rivers and plains among mountains or mountain ranges are for the most part of alluvial formation, and therefore rich in all the elements that make the most productive soil. Many of these are of sufficient area to admit of improved farming on a most extensive scale, and there is scarcely a town, even in the most mountainous parts of the mining districts, that has not around it sufficient areas for cattle ranching, market gardening and fruit growing, contiguity to consuming centres guaranteeing excellent markets for everything that can be produced.

The Frasor Valley, Chililwack, Okanagan, Belie Prairle and some other districts are in an advanced elate of cuitivation, with their large improved farms, large herds of thoroughhred horses, cattle and sheep, large orchards, as ricultural ancieties, creameries and such other improvements and institutions as can only he found in the most advanced districts of the older provinces. A trip through any of them would well repay the man who contemplates settling in thie province, as it would show him what could be done in many other improved districts in a few years with energy and enterprise. Of course, these extensive improved farms, when for sale, are held at a soug figure; hut in districts where the Provincial and Dominion governments and the railway companies and private parties and corpormake the

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AGRICULTURAL SCENE.

ntions hold improved Isnds they can be got at reasonable figures. Both governments, and the railway companies, have agents in all important towns ever ready to answer all enquiries of intending settlers. On most of the wild not unimproved lands there is large timber, one of the hest of evidences of fertility and depth of soil and rapid vegetation; but there are many grassy swamps and aider hottoms on even these of large extent, that prove themselves, under the band of the skilled agriculturist, to be the best farming isnd to the world. In the Atlin country there are immense tracts of grasing lands which will, as the country is fast settling up with a mining population, even using become lugrative to those who engage in the enterprise.

The Oksnagan district is of especial interest in the interior, because of its proximity to the Kootenay country, the access of auch active and extensive mining operations. This district is as much a wheat growing territory as any in the provioce, sithough in fruits, vegetables and roots it is unsurpassed. It is the intention of the settlers to increase the orcherd acreage in the near future ten-foll, and it is supposed that in a year or so the territory will meet all the demands of West Kootenay. Hay is very productive, but the farmer's experience is that other products pay better. Year by year the acreage under wheat is being increased, as the flour manufactured in the mills of the district finds a ready market hard by. The great obstacle in the way of further expansion is the want of a more direct railway with the Kootenay country, but this is being overcome in the construction of the Midway and Vernon road. With their completed the Kooteney should import but little from the United States or eisewhere. This locality is especially noted by having near its centro the large farm and orebard of Lord Aberdeen, one of the most comprehensive in the whole of Canada.

What has been seld of the Okanagan may be repeated of the whole of the Fraser River vailey, including the New Westminster district. Childwack, the Similkameen and Windermere countries, the two latter being but very imperfectly settled, because of the lack of reliways. The farmer who anceceds in locating in either of these, and economizes for a few years, is on the fair way to weelth and comfort.

All the cereals can be profitably grown on these fertile districts to perfection. Leguminous plants, roots and ragetables of all kinds that are grown in any portion of the temperate zones, grow here to a large size and of ex-

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nts, roots and ize and of excollont quality. All such fruits as applea, pears, plums, prunes, cherries, peaches, and all the amail fruits, after great perfection in nearly all districts of the Island, while nectarines, apricots and grapes can he raised most anocesafully it given ressonable care and attention. Many varieties of nuts, such as almoads, filherts, walauts, hazlenuts, eheafunts, atc., do well wherever cultivated. Flax of excellent quality has been grown, but no far applied to no special use except eattle food; but no doubt the western march of eastern ladustry will yet flad more advantageaus uses for it, the fibra helag long, allky and fine, yielding from two to three tone per acre. Some af the arguments against raising it for home consumption or export, are that the land on which it may be grawn can be more profitably employed under other products. Hope also grow luxuriantly and yield from 8 to 9 tons per acre. Cattle, sheep, swine and poultry do exceedingly well, the climats being specially favorable, grazing being available the year round and very little housing heing required. The yields of hay, wheat, asts and other grains are unsurpassed in any other portion of the continent, and many of the fields are of great extent. In short, under better clearing and cultivation the fields may be made of sufficient extent to profitshly employ the most improved agricultural machinery and in any portion of the world, not excepting our territorial prairies. A visit to the annual agricultural exhibition at New Westminster will conviace the most akept cal that, great as the province may be in minerals, timber and fish, its agricultural capabilities are a mine of untold wealth.

The Provincial and the Dominion governments are doing considerable towards the encouragement of the industry in the province. The latter has established an experimental farm at Agassiz, on which farming in all its breaches is apperimented with, and the records are kept for the information of farmers the province over. From these records information as to the most profitchle methods of carrying on the industry in all its details is available, without cost of any kind to the farmer. All kinds of grain and other products are grown in all soils and in all the methods known to the industry. All kinds of fruits are also experimented with in the same way. All animals raised on the farm are also raised here, and dairying is engaged in the some extent. It will readily be seen that from the records of this lactitution the farmer inexperimented in the methods of the country can get the knowledge necessary for auccess without trouble and expense, and hetter, without loss in experimenting.

The Provincial government, sgain, has organized a system of farmers' institutes, by which the agriculturists of

localities meet together at stated times for the interchange of ideas on practical operations. It has also create and maintains at provincial expense a Board of Agriculture, that receives annual reports from capable and experienced correspondents in all parts of the country. These deal with all farm operations and declare results. The are distributed to all who desire them, and do much to educate those who have neither the means nor the time experiment on their own account. They, of course, result in the adoption of the hest methods the country over the advancement all around from all causes combined, during the last five years, has been very marked, and the next five will show a decided gain even upon the immediate past. But withat there is yet much to be done. The country is very extensive, its population is aparse, and its opportunities for the industrious settler in whatever can ing. unsurpassed. The country is now exporting extensively from three of its industries—mining, immorring at dehing—and has made a commencement in agriculture by shipping to the territories large quantities of fruit agains the competition of the Western States and Ontario. Out of this will yet certainly grow a most extensive and putship husiness.

We cannot close this section bet'r than hy giving a few facts condensed from the four sections throughout The country has an area capable of locating profitably five millions of people, and the present population scarce exceeds 150,000, or one for every thirty who may find a comfortable home and profitable employment in the count as ail of its industries are fully developed.

That the country is wealthy and that the residents are prospering is amply shown by the Trade and Commerceurus of the Dominion government year by year. For instance, for the year ending December, 1900, the total operts of Canada were \$177,776,044, or, deducting the population and exports of this province, 150,000 and \$17,156.5 respectively, just \$29.47, while our 150,000, sending out \$17,156,281, exported \$114.37, nearly four times as much iman as the rest of the Canadian people. The meaning of this is simply that, man for man, the British Columbia got four times as much for their time as the rest of the Canadian people.

Out of the antire population about one-half are in the cities, towns and villages, many of the number bet miners and fishermen, and the remainder are engaged for the most part in agriculture and lumbering. cas siso crested capable and exre results. They nor the time to a country over, marked, and the bedone. The my whatever calllumbering and of fruit against tensive and pro-

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## THE LUMBER INDUSTRY.

Unlike the country to the east of the Rocky Mountains, British Columbia is well wooded. The frequent fires ignited by the Indians on a grassy soil strewn with dry leaves, and a dry climate, in mid-summer, must be either thanked or condemned, as the spectator looks at it, for the extensive prairies and the great absence of timber in Manitoba and the Territories. On the hills where prairie grass to encourage forest fires and on the skirts of rivers. lakes and ponds is absent in the east country-districts itss accessible to fires-timber of fair size is generally to be found. Again, in districts protected later by the white population, hluffs of timber spring up with great rapidity, all going to prove the country would have been wooded insiead of prairie but for the ravages of fires occasioned by the nomads of the pigles. In this province conditions were very different. The mountains and the hills, for ohvious reasons, were less the haunts of the red man, grass growth at elevations and among rocks was less luxuriant, and the climate was more humid, snow lying longer at ejevations and rains more frequent at lower aithtudes. These causes combined, led to the preservation of British Columbia forests. In places in the interior where the climate is more said and the land is comparatively level, patches of prairie are frequently to he found. In these, under cultivation, more or less irrigation is found necessary for the proper growth of agricultural products. It is easily obtained, however, from the many streams coursing down the hill-sides hard by. On the laisnd of Vancouver and the West Coast of the mainland, where the cilmate is moister and protection more general, the timber growth is simply immense. For the purposes of this description, however, it may be said that when white settlement was first commenced, British Columbia was from one end to the other one dense forest of the finest and most useful timber in the known world. The British Columbia cedar is now used in all parts of the world as the hest finishing timber available for the better class of buildings. Douglas fir, named after David Douglas, a noted botsnist, reterred to before, who explored much of the mainland in the early years of the past century, is easily the king of the forest. It is of very nearly the asme weight as the ash, but grows to an enormous size. It has often been used to the length

of 250 feet and is frequently found with a circumference of 50 feet at the base. A fair average is perhaps 200 feet ta height and from 8 to 10 in diameter at the base. It is much used in construction work end in strength, durability and workable qualities it stands midway between the belsam and the spruce. Experiments have shown it to be an excellent pulp timber which latter will be in great demand as soon as paper manufacture is commenced in the country. In point of abundance on the Island, the Coast and much more so in the interior, la the esdar, the red being quite plentiful on the Island and the white more abundant on the mainlend. On account of its rapid growth it is frequently found a larger tree than even the Douglas fir. It is especially valuable to the ploneer, removed from mills, because of its atraight grained growth, heing readily split in planks, hoards, shingles and fencing timber with the primitive tools at the command of the early settler-a saw, exe and wedge. With the addition of a piene and one of two other tools, the settler of a little mechanical skill can easily, with this timber, construct a comfortable residence without the aid of a sawmill or other machinery of more modern invention. This timber is found in other colorsysilow, perhaps, being the most important—that are highly prized in finishing, working very smooth and taking a mag nificent pollsh. The cypress is found in lerge quentities on the Island; the yew, the oak, juniper erbutus varieties of the meple, etc., are elso plentiful there, as well as on portions of the mainlend, while spruce, in quantity an utility, is perhaps the next wood grown in eli perts of thecountry. It is also an excellent pulp producer and is ex tensively used in huildings of every description, whether in frame work or in ordinary supplies. It makes the best of hody huilding meterial. Hemlock grows to a very lerge size, its hark heing used extensively in the tanning c hides; cotton wood, popler, one of the best of pulp producers, hirch, willow, etc., ere also found in great ahunc nnce. The hirch grown is a good cahinet timber end is very extensively used when herdwood is required for a fi ish. As has been stated above, though sufficient timber is found in ell parts of the country for home uses, the va leys of the West Coast of both the meluiend end the Island produce the most valuable quantities and as a result fu nish the most for export, leading to the operation of the most extensive milis. At the present time, taking in the smail as well as the large institutions, about 100 sawmills are in operation in the country; and, of course, as pop lation increases there will he a field in all parts of the country for many more. Considerable of the timber land held hy speculators, but much is held by the government. As the prairie country to the east, as well as Chine Japan, Australia, South Americe, and even Great Britain, furnish open markets for our production, to say nothing o 39

chaps 200 feet th, durability nown it to be penced in the the red being d growth it is ed from mills. mber with the ne and one or abla residence other colursi taking a magbutus varietles quantity and cer and la exmakes the best the tanning of n great abundulred for a fins uses, the valas a result furtaking in tha course, as poputimber land is vell as China,

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extensive home consumption in shiphuliding and general country development, there is a prosperous future before the iumbermen of British Columbia. Pulp is likely soon to become one of the greatest inductries of the world, and happy should this province he in its possession of so large a supply of pulp producing timber. The eastern provinces have some 40 pulp mills in operation, involving about \$20,000,000 of capital. The United States, a large consumer, as well as Great Britin, are without supplies and must become very heavy purchasers in this province. Frof. Macoun says our fir, hemically, applies, spruce, etc., are the very best material for the demand. The very refuse of these timbers, after the lumberman has made his selection in the forests, could be used to great advantage to supply this ever-increasing demand for pulp were economy directed that way. With good timber in supply and the industry yet so young in this country, these latter considerations have scarcely yet been taken into account; but the day is not far distant in which they will give employment to a large population and bring a mine of wealth to the province. The demand for paper is ever on the increase the world over, opening up new markets, creating a new impetus to shipping; and with the supply of material in this province, it ought to become a source of untold wealth to the country, to say nothing of the business as an employer of labor.

#### SAWMILLS.

The reader will hear in mind there are large supplies of huilding timber in all parts of the country; that towns and villages are springing up in all parts of the province, the agricultural as well as the mining; and therefore mills are needed in every locality to supply the demand. There is than a field for the sawmill of capacity for local supply in many parts, and room for the capitalist who is prepared to manufacture extensively for export. For the porpose of meeting the expectations of the curious, we will give a hrief outline of the working of the Victoria Lomber and Manufacturing Co's mills at Chemsnins, on Vancouver Island, one of the largest concerns of the kind on the American continent. It has a capacity of 400,000 feet of lumber per day and a timber limit of 150,000 acres of the best wood in the country. In short, the mill was located there because of the supply of superior timber in the vicinity. The company has a hranch rallway of its own into the centra of the hush, some 10 miles in length, bringing in whatever lengths of timber may be required from time to time to meet demands. All old appliances at ordinary mills have given way at this to a system of automatic working much resembling human hands, so perfect is it and times.

in its movements. Often when speed is required the tree that stands in the bush in its stately form in the morning is in iumber or timber to fill an order ere the sun soes down. In full operation, the mill employs about 400 men, one-haif about the mill handling the iumber and the other haif in the bush getting out the timber. To the mnn acquainted with handling timber at the country mill only, handling a stick 100 feet long and more and fram 6 to 10 feet in diameter would seem a novelty. Necessily compels the company to keep a machine shop of large proportions and a staff of competent machinists employed sharpening saws, repairing, refitting, etc., to save delays, if for no other purpose. Being at the edge of the ocean, the company has its own wharf and all wharfage shipping facilities. The mill has cost over \$100,000. The company ship regularly to Australia, many European countries, South America, China, Africa and the Fiji Islands, which countries will always he our customers. The average wages at the mill are 30 cents per hour. This is hat one of the large mills of the province; there are others at Nanalmo, Portmoody, New Westminster, and, in short, all the more important places in the country, on the Island and the West Coast of the mainland, with smaller institutions at inland points. No one can make mistakes in erecting mills at places without them where aultable timber is obtainable.

This vast extent of forest and the ever-increasing demands of a growing population, suggest the prosperous future of pulp mills and wooden were manufactories of nil descriptions. An outline of the law relating to timber limits is given elsewhere, so this chapter cannot better be closed than by saying the total cut of lumber last year (1900) on Crown lands, leasehold, private property and Dominion and railway lands was a little over 225,000,000 feet and this is scarcely appreciable when the entire forest wealth of the country is fairly considered.

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## THE FISHERIES.

Not among the least of the industries of the prevince are its fisheries. Nowloundland and Nova Scotia have their catches and curing establishments for nod end other varieties of fish that are quite exteoalve; but the varieties of fish in the waters of our coast and the rivers enteriog it from the Island, as well as the mainland, are much more numerons and varied. Our fishing industry has already given more than a continental reputation to the country, as our products are found in almost every corner of the globe. The industry is deep sea and shore and lands. To the inhabitants of the Atlantic seaboard the term "fish" almost invariably implies cod alone in its various apecies. For the same reason the term on the Pacific has been associated almost entirely with the saimon. The sait waters of the country abound in the finest food fish, in variety, to be found in any portion of the world. No doubt the most important of sait water fish is the true rod (Gadus Molrhua), but while the saimon lesds, our industry possesses interesting variety. It will be understood that with the finny tribe so abundant more or less fish had been taken on the coast from the earliest visits of the whiteman, to say nothing of the cetchee of his predecessor, the red man; still the first catches for export were not made until 1863, end three years later nearly 20 vessels were employed in the trade, capturing well on to 1,000,000 fish the first season. At the present, Australie, South America, Asie, China and Japan, to say nothing of Eastern Canada, are opening up large markets in the fisheries of our occan as inlend waters.

After our salmon or cod, probably our next fish in importance is the halibut; and hoth come in swarms into thore water. The average weight of a catch of cod is about 12 lbs. and hut en average catch to bring in 1,200. In appearance it is very similar to its namesake in the Atlantic waters, and the cod in hoth oceans strongly resemble one another. Clams are a favorite bait in the Pacific, and they can be got practically without cost, thus reducing the most expensive portion of the fishing enterprise in the east to a mere trifle in the west. The fishing season on

the northern banks usually lasts from the first of April to the first of November. it might be extended even much tenger, but that later weather is usually unfavorable. A crew for such a business numbers from 15 to 30 men.

The mainland, however, is the great field for the saimon—tha Columbia, Fraser and Skena rivers are literally alive with them during the fishing peason. The canneries, as a matter of convenience, are all on the mainland, though some of them are award by Island parties. Sturgeon and other fish are also found in abundance in most of our larger rivers. The saimon pack of last year was well on to 1,000,000 cases, going to all countries mentioned above as our regular customers. The magnitude of the industry may be understood by asying the total revenues of the industry in the province going to the Federsl government for licenses, etc., is yearly about \$50,000, with an expenditure of \$13,000, while the revenues of the rest of Canada from the same accurace only foot up to \$38,000, with an expenditure of four times that amount.

Proparly speaking, acading is also a portion of this industry. Usually from 25 to 35 schooners are annually employed in it, the average yearly catch being worth about \$75,000 in the London market. All told the province has at present some 75 versals annually amployed in deep water fishing, manned by about 250 men. No official figures are at hand showing the number of men employed in the industry in the inland waters, but it is very large—several thousand—distributing a large sum of money in the country. Like all the other industries of the province, this one is yet but in its infancy, and as the inland waters are axplored in this enterprise, and they are all found to be fully inhabited, the number of men eventually employed in it throughout the country will become very large. As with the other industries, so with canning. It offers inducements for capital and enterprise scarcely excelled by any of the alater anterprises.

## RECAPITULATION.

The mining diatricts, one way or another, embraca nearly one-third of the area of this immense country, and in placers, alivar-lead, gold, gold-copper, iodes and coal mining open fields for the miner in every condition of means. The man who has no more than his \$10 outfit and a supply of provisions can find a field in the placers or prospecting the hills 101 judges. The man with a few hundred dollars, who prefers to purchase, can find what he wants in



the hande of the prospector, or first owner, properties under every degree of improvement; while the men of weath can secure an interest in the divideod-payer to all minerals, sod the instances are numerous of men who, under all of these conditions, have made fortunes. Everyhody does not, of course, succeed, but the records show fewer failures relatively than are shown by any other country.

The farmer of every coodition of means can find what he desires—the grain, the vegetable, tha fruit-producing or the dairying property, or that heat adopted to all four—in every degree of cuitivation, from the primitive forest np to the highest degree of cultivation.

The lumbermae who wents to hire io the hush, to establish a lumber yard or to build a mill, can easily find openings to his taste, and so with the fishermae.

The business man and the professional man may find their business at present fairly well represented, but the country is growing and fields are continuously opening with the natural growin.

in the whole country there is the hest of climate, the purest water in the world, and other natural conditions favorable to rapid settlement.

Shipping facilities are fast sprioging to existence to meet all demands of settlers, settlers' effects are everywhere to he had in the cities and towns, schools are opened end supported by governoent wherever there are children to attend them, and the laws of the country protect the rights of the individual regardless of creed or color. In all substantial respects it is the ideal country for the industrious, coterpricing settler who wants to carve out a home and a competency for himself and family.

## SPORT AND SCENERY.

To the pleasure-seeker or the sportsman, British Columbia is a verificable paradise. Everything that nature has done for the country she has done on the largest scale. After a traveller from the east reaches Calgary by C.P.R., the Rocky Mouotains loom up before him sod from that on until he reaches the West Coast of Vancouver Island to the West, the 49th parallel to the South, or the Atlin country to the North, it is one continuation of surprises, the

mountains being so high, the lakes and rivers, with their falls, being grandeur excelling itself at every stage. In a trip in any direction, the artist has everything on which to feast his practised eye. Of late scarcely a visitor reaches the country without his kodak or his camera and at every stop on a passing train or boat he is taking his "sunp-shots" for scenery exhibits on his return. In addition to the natural scenery, there are several springs, such as "sunp-shots" for scenery exhibits on his return. In addition to the natural scenery, there are several springs, such as "sunp-shots" for scenery exhibits on his return. In addition to the natural scenery, there are several springs, such as many silments. As it is not the intention to make this little hook a description of scenery for the artist, we close many silments. As it is not the intention to make this little hook a description of scenery for the artist, we close many simply saying the experienced tourist and travoller never hesitates to say that in all that he has read of the country "the half has never been told."

As many of the hills and plains are thickly inhabited by the larger game—hears, goats, deer, etc.—and the streams, takes and rivers swarm with the choicest fish, the sportsman never falls to find everything up to his liking in a visit to British Tolumbia.



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