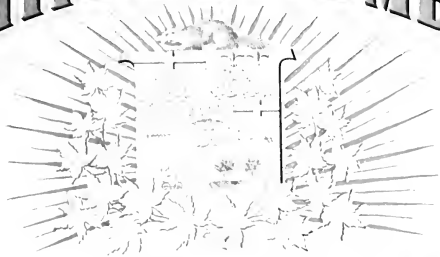
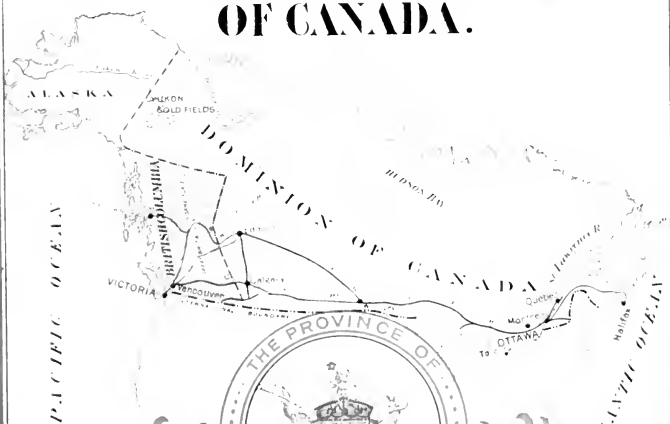


1915

BRITISH COLUMBIA

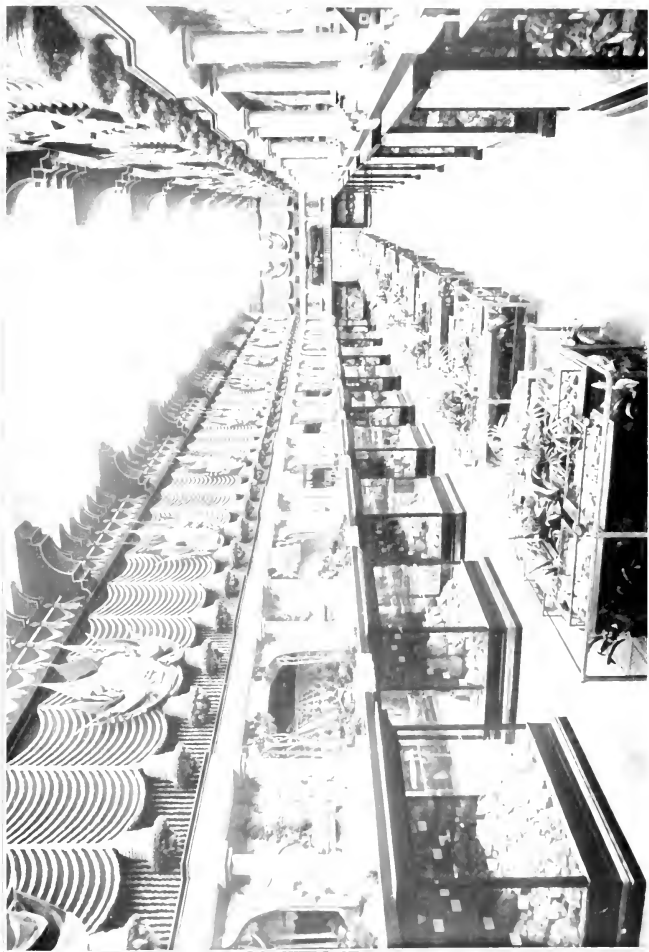


THE MINERAL PROVINCE OF CANADA.





Parliament Buildings—Victoria, British Columbia, Canada.



General View of Mineral Cabinet—Canadian Pavilion, Panama Exposition.

BRITISH COLUMBIA

III

MINERAL PROVINCE OF CANADA

1915

A Short History of Mining in the Province, a Synopsis of the Mining
Laws in Force, Statistics of Mineral Production to Date,
and a Brief Summary of the Progress of
Mining during 1914.



THE COAT OF ARMS OF
THE PROVINCE OF BRITISH COLUMBIA

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1915

BRITISH COLUMBIA,
THE MINERAL PROVINCE OF CANADA.

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British Columbia has produced to date \$73,269,663 of Placer Gold, \$81,595,516 of Lode Gold, \$37,709,282 of Silver, \$31,468,462 of Lead, \$86,939,370 of Copper, and \$149,814,162 of Coal and Coke; \$26,026,050 other metals and building stone, etc., a total production of \$486,822,715.

The Mineral Production for 1914 was \$26,388,825.

Lode mining has only been in progress for about twenty-two years, and not 30% of the mineral land has been even prospected; 250,000 square miles of unexplored mineral-bearing land are open for prospecting.

Mineral locations are granted to the discoverers for nominal fees.

Absolute titles are obtained by developing such properties, the security of which is guaranteed by Crown grants.

The Mining Laws of this Province are more liberal and the fees lower than in any Province in the Dominion, or any Colony of the British Empire.

Full information, together with Mining Reports and Maps, may be obtained from the Agent-General for British Columbia, Salisbury House, Finsbury Circus, London, E.C., or by addressing

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Canada

Canada

MINING IN BRITISH COLUMBIA.

British Columbia, the most westerly Province of the Confederation forming the Dominion of Canada, comprises, principally, that section of British North America lying to the westward of the summit of the Rocky mountains. The northern boundary of the Province is the 60th parallel: its southern boundary the United States of America, or practically, the 49th parallel: on the west it is bounded by the Pacific ocean, and on the east by the Rocky mountains as far north as the 54th parallel: beyond that by the 120th meridian of west longitude.

The total area of British Columbia is about 382,000 square miles, of which 285,000 square miles are estimated to be as yet uncultivated.

The country is traversed in a north-westerly direction by four more or less continuous chains of mountains, between which lie valleys of varied width, well suited for agriculture.

Each of these mountain ranges has been proved to contain mineral in sufficient quantity to be profitably mined, while the valleys of the interior, lying immediately to the west of the Rocky Mountain range proper, contain placer gold throughout the whole length of the Province and have been and are being worked in places to great profit. To quote from a report of the late Dr. Geo. M. Dawson, Director of the Geological Survey of Canada:

"While it may now be safely affirmed that gold is very generally distributed over the entire area of the Province of British Columbia, so much so that there is scarcely a stream of any importance in which at least 'colours' of gold may not be found, the enumeration of the principal discoveries of mining districts shows very clearly that most of these are situated along the systems of mountains and high plateaus which comprise the Purcell, Selkirk, Colorado, and Cariboo ranges, and the north-west continuation lying to the south-west of the Rocky Mountain range, properly so called, and parallel in direction with it."

It may be truthfully said that the whole Province has been proved worthy of systematic examination, or "prospecting" as it is usually termed. As yet, serious work of this description has been confined to within a comparatively few miles of the railways, and not more than 25 per cent. of the entire area of British Columbia can be said to be really known, while not even half of that portion has been examined closely or in detail, by which means only will its value be shown.

It will thus be seen that about 250,000 square miles of country, known to be extensively mineralized, still remain as a virgin field for the "prospector" * and for the investor in undeveloped "prospects," * a field such as exists to day in but few other places in the world.

Of what value this great area is likely to prove can best be judged by an examination of the results already obtained from the small portion of the Province so far developed, results which are shown in the tables of production which follow.

It may reasonably be asked why development of these mineral resources has been so long delayed. The answer is easily found in the geographic position of the country and in the lack, until recent years, of transportation facilities. The metal as well as the money markets of the world are in Europe and on the Atlantic coast of North America, and since, prior to the

* The terms "prospector," "prospect," are applied, the former to one who sets out with the object of exploring for mineral, and the latter to the discovery made, which may or may not be afterwards developed into a mine.

completion of the Canadian Pacific Railway in 1885, a journey to British Columbia was a question of months of time and great expense, it may well be seen that the transportation of mineral or metal, other than the precious metals, from this Province to a market was practically impossible.

The following brief outline of the mineral development of British Columbia may not be out of place:—

Naturally the country was first explored and opened up from the Pacific seaboard. As early as 1835 coal was discovered at Fort Rupert by the Hudson's Bay Co., and in 1851 the same company opened up the extensive coalfields at Nanaimo, Vancouver
Coal. Island. In those days the market was very limited, and it was not until 1875 that the output of the Province exceeded 100,000 tons per annum.

Since that time, however, the market has gradually increased until, in 1902, about 1,400,000 tons of coal and 128,000 tons of coke, and in 1910 some 2,800,046 tons of coal and 218,029 tons of coke was produced, the market and transportation facilities, rather than the mines, being the limiting factors in the production.

In 1914 the production of coal was 1,810,967 tons (2,240 lb.) and of coke 234,577 tons, this diminution of the output being accounted for by the fact that the inland collieries had to materially reduce their output, owing to conditions arising from the European war. The Coast collieries also made a slightly smaller output than in the previous year.

The Coast collieries have produced to date a total of over 26,000,000 tons of coal, and made a gross output during the year 1914 of 1,211,245 tons of coal; no coke being manufactured.

Within the past eighteen years one of the coalfields on the western slope of the Rocky mountains has been made accessible by two railways, and made in 1913 a net output of 898,148 tons of coal and 286,045 tons of coke, but in 1914, owing to the effects of the war, the net output of coal dropped to 599,722 tons and 234,577 tons of coke.

At present the only large working collieries in the Province are in the two districts just mentioned, but the distribution of coal seems general throughout the Province, since it is known to exist in places along the whole western slope of the Rocky mountains: it is found in the interior valleys at Nicola and Princeton, on the Thompson river, in Peace River District, and in the Omineca District—a coalfield is being developed on the headwaters of the Skeena, the coal being anthracitic in character. Coal occurs on the Pacific coast on Vancouver Island, on the Queen Charlotte islands, and along the Skeena river, while recent reports confirm its discovery in the Atlin Mining Division: the coal found is a first-class bituminous, carrying from 60 to 75 per cent. of fixed carbon, from 20 to 30 per cent. of volatile combustible matter, and from 3 to 9 per cent. of ash.

The coal reserves of the Province have been estimated by the Geological Survey as amounting to seventy-five billion metric tons.

As will be seen, the greater part of this immense reserve of power—for coal is power—remains dormant at present, an asset reserved for use in opening up the coming trade of the Pacific ocean.

In 1858 alluvial or "placer" gold was found in British Columbia in the bars of the lower Fraser river. Hardy and adventurous prospectors followed the stream up—following the golden trail thus "struck" and, in 1860 and 1861, on the headwaters of the river,
Placer-mining. they discovered the exceedingly rich "placers" of the Cariboo District, which have produced gold to the value of about \$50,000,000.

The news of these rich finds travelled abroad, and brought about a rush of gold-seekers from the then failing goldfields, of California and from almost every part of the world. From this time practically dates the opening-up and settlement of British Columbia.

Within the next ten years the Province produced about \$33,000,000 worth of "placer" gold, the greatest production in any one year being in 1863, and amounting to about \$1,000,000. All of this gold was obtained with pick and shovel, without the aid of any machinery, which, as a matter of fact, could not be taken into the country over the crude trails and roads which served well enough for the pack animals of the early miners and prospectors.

As has been the history of all placer mining camps, a few years saw all the more accessible gold skimmed from the shallow deposits, until, gradually, as the workings became too deep for the ordinary pick and shovel methods, then only available, the placer output gradually dropped until in 1898, the annual production was only a little over half a million dollars.

In 1899, however, placer mining was revived by the discovery of new and virgin fields in the Atlin District, a continuation to the north of the famous Cariboo and Omineca diggings of the past, and the connecting link between these and the more recent, but equally famous, goldfields of the Yukon, thus completing the chain of continuous "placer" districts from the 49th parallel, north-westerly, to the 69th parallel.

Fort Steele, Revelstoke, the valley of the Fraser river, Quesnel Forks, Barkerville, Manson, Telegraph Creek, and Atlin may be said to have been centres of known "placer" goldfields, pointing with no uncertain finger to the Yukon, and indicating a flow of gold bearing wash from the north-western to the south-eastern corner of the Province.

In the vast area covered by this flow, the places mentioned are only spots at which gold has been found in sufficient quantity to be profitably mined by the old pick and shovel methods. That other such spots remain to be discovered seems probable, while it is certain that, in a large percentage of the intervening areas, gold exists in quantity such as it will pay well to mine by modern methods.

A continued falling off in the production of placer gold might have been expected in the year 1900, had it not been that machinery and water power were beginning to be substituted for the laborious methods of the early miner, a change rendered possible by the improvement in transportation facilities.

The modern methods of working placer deposits demand a heavy initial outlay for plant, but a large number of powerful companies are now engaged in British Columbia in installing the necessary machinery and equipment, with such prospects of success that the old placer grounds promise, under the stimulus of hydraulic mining, to yield an output of gold not previously attained in the palmiest days of placer mining proper.

The new hydraulic companies referred to have taken up a large number of leases of placer ground in the Province, but this branch of the mining industry is, at present, only in its infancy in British Columbia.

Such briefly, is the history of placer gold mining in the Province: that it is only the beginning of such, the improved methods of mining, and the new districts each year becoming accessible, leave little reason for doubt.

The total production of placer gold to date is about \$73,269,003.

It is only the repetition of the history of all placer mining countries that prospecting for lode mines received little or no attention until after the placer grounds have been so culled over as to force the prospector into new fields of labour. Nor is this to be wondered at: the placer is the "poor man's mine"; he needs little or no capital to work it; its product is cash, to all intents and purposes, and he is his own master—all attractions too great for the sturdy independence of the prospector to allow him to think of searching for lode mines, which, when found, require so much capital to work that they leave but very small interest in the property with the original owner or "locator."

Lode-mining.

while, at the same time, the necessity of transportation facilities for the product of the mine, limits the field of search to within a comparatively few miles of a railway or navigable waterway.

Railway facilities are comparatively recent acquisitions in British Columbia, our first line—the Canadian Pacific Railway—having been completed in 1885, and following, naturally the least mountainous path across the Province. From the main artery of communication thus afforded, “prospectors” penetrated into the adjacent country by following up the main waterways which abound, with the result that discovery after discovery of valuable mineral was recorded.

Development of these mineral discoveries was unavoidably slow, being delayed by the lack of transportation facilities, which, it will be readily understood, could not be obtained until sufficient work had been done on the “prospects” found to prove their value and to give reasonable ground for believing that a proper and sufficient return would be obtained on the capital invested in the establishment of the requisite means of carriage and communication.

Thus, it was not until 1893 that the lode mines of British Columbia really began to be productive, the output from this source during the six years immediately prior to that date amounting to an average value of only about \$60,000 a year, derived from selected rich ores found near the existing lines of transportation.

In 1893, however, the value of the production of the lode mines of the Province rose to \$300,000, since which time there has been a steady increase, until in 1901 the output from this class of mining had reached a value of \$13,683,044, and although it fell off slightly in 1902, the decrease was due principally to the lesser market values prevailing; since 1903 an upward tendency is again apparent. The increase thus shown in the short period of a decade gives ground for faith in the country as a future large producer of mineral wealth, and indicates that British Columbia will prove to the capitalist a profitable field for investment.

The total production of lode gold to date is \$81,595,516 of which \$5,109,004 was produced in 1914.

Such, then, is a brief summary of our mineral development, the details of which will be more fully found in the statistical tables following, which are taken from the Report of the Minister of Mines, and are compiled by the Provincial Mineralogist from the sworn statements of returns by the mine-owners and mining companies throughout the Province.

Attention is invited to these statistics and to the growth of the mining industry as therein indicated, since they speak both clearly and with due authority of the present standing and future prospects of British Columbia as a mining country.

The development of the mining industry has been of such rapid growth that the demand for skilled, or even ordinary, labour has of late years been greatly in excess of the supply, and there is, consequently, plenty of work to be found in the country for miners and mine-workers generally, and the attention of British miners is directed to this field of labour.

The country is fairly well supplied with clerical and office assistance, and there is at present a fair supply of tradesmen of almost every sort. The country is great and growing in importance; there is room for and need of a greatly increased population.

The current wages paid in and about the mines are as follows:—

Miners	receive from	\$3.30	to	\$4.50	per day	(14 to 19 shillings).
Helpers	"	2.50	"	3.50	"	(10 to 14 ").
Labourers	"	2.50	"	3.00	"	(10 to 12 ").
Blacksmiths and mechanics	"	3.50	"	5.00	"	(14 to 20 ").

The climate of the country is favourable—much milder than east of the Rocky mountains. The conditions of life are easy; luxuries are scarce but want is unknown. The laws are just and equitable, and the administration thereof fair and sure, as is guaranteed wherever the British flag flies at the mast-head.



Silver-lead Ores and Mill Products—Kootenay District, British Columbia
Panama-Pacific Exposition.



Ores from British Columbia Mines and Products of Smelter operated by Consolidated
Mining and Smelting Co.—Trail, British Columbia
Panama-Pacific Exposition.

Mention has been made of the geographical position of British Columbia as having in the past been a hindrance to development. It would now seem, however, that the markets of the world may in the future be on the borders of the Pacific ocean, and that the disadvantages in the matter of freights from which this Province has suffered will be reversed, enabling us to more than compete with all in the coming trade.

The markets for our mineral wealth have, in the past, been on the Atlantic seaboard; in the near future they may be on the Pacific coast. We shall, too, shortly, have our own refineries within the boundaries of the Province, so that our metals shall be turned out in marketable shape and sold from here direct, thus making a material saving as regards freight.

SYNOPSIS OF MINING BY-LAWS OF B.C.

The mining laws of British Columbia are very liberal in their nature and compare favourably with those of any other part of the world. The terms under which both lode and placer claims are held are such that a prospector is greatly encouraged in his work, and the titles, especially for mineral claims and hydraulic leases, are absolutely perfect. The fees required to be paid are as small as possible, consistent with a proper administration of the mining industry, and are much lower than those of the other provinces of Canada or the mineral lands under Dominion control. Provision is also made for the formation of mining partnerships practically without expense, and a party of miners is enabled to take advantage of these sections of the Acts and work their claims together, without the trouble or expense of forming a joint stock company.

Considering the success that has characterized alluvial mining on a large scale in British Columbia, the rentals for hydraulic leases are particularly low. It will be found on reference to most of the Australian colonies and Natal that the rentals are, in most instances, eight times as much as in this Province, while the areas permitted are generally much smaller. The period for which leases are granted is practically the same. On a lode mine of 50 acres the expenditure of \$500 in work, which may be spread over five years, is required to obtain a Crown grant, and surface rights are obtainable at a small figure, in no case exceeding 85 per acre.

The following synopsis of the mining laws will be found sufficient to enable the miner or intending investor to obtain a general knowledge of their scope and requirements, for particulars, however, the reader is referred to the complete Mining Acts, which may be obtained from the King's Printer, Victoria, B.C.

Free Miners' Certificates.

Any person over the age of eighteen, and any joint stock company, may obtain a Free Miner's Certificate on payment of the required fee.

The fee to an individual for a Free Miners' Certificate is \$5 for one year. To a joint stock company having a capital of \$100,000, or less, the fee for a year is \$50; if capitalized beyond this, the fee is \$100.

The Free Miners' Certificates all expire at midnight on the 31st of May in each year. Certificates may be obtained for any part of a year, terminating on the 31st of May, for a proportionally less fee.

The possession of this certificate entitles the holder to enter upon all lands of the Crown, or upon any other lands on which the right to so enter is not specially reserved, and to prospect for minerals, locate claims, and mine.

A free miner can only hold, by location, one mineral claim on the same vein or lode, but may acquire others by purchase. In the case of placer claims, only one claim can be held by location on each creek, ravine, or hill, and not more than two in the same locality, only one of which shall be a "creek" claim.

In the event of a free miner allowing his certificate to lapse, his mining property (if not Crown-granted) reverts to the Crown, but where other free miners are interested as partners or co-owners the interest of the defaulter becomes vested in the company continuing co-owners or partners *pro rata*, according to their interests.

It is not necessary for a shareholder, as such, in an incorporated mining company to be the holder of a Free Miner's Certificate.

Mineral Claims.

Mineral claims are located and held under the provisions of the "Mineral Act."

A mineral claim is a rectangular piece of ground not exceeding 1,500 feet square. The angles must be all right angles unless the boundaries, or one of them, are the same as those of a previously recorded claim.

No special privileges are allowed for the discovery of new mineral claims or districts.

A mineral claim is located by erecting three "legal posts," which are stakes having a height of not less than 4 feet above ground and squared for 4 inches at least on each face for not less than a foot from the top. A tree-stump so cut and squared also constitutes a legal post.

The "discovery post" is placed at the point where the mineral in place is discovered.

Nos. 1 and 2 posts are placed as near as possible on the line of the ledge or vein, shown by the discovery post, and mark the boundaries of the claim. Upon each of these three posts must be written the name of the claim, the name of the locator, and the date of location. On No. 1 post, in addition, the following must be written: "Initial post. Direction of Post No. 2 [*giving approximate compass bearing*]: — feet of this claim lie on the right, and — feet on the left of the line from No. 1 to No. 2 posts."

The location line between Nos. 1 and 2 posts must be distinctly marked—in a timbered locality by blazing trees and cutting underbrush, and in bare country by monuments of earth or rock not less than 2 feet in diameter at the base, and at least 2 feet high—so that the line can be distinctly seen.

Mineral claims must be recorded in the Mining Recorder's office for the mining division in which they are situated within fifteen days from the date of location, one day extra being allowed for each ten miles of distance from the recording office after the first ten miles. If a claim is not recorded in time it is deemed abandoned and open for relocation, but if the original locator wishes to relocate he can only do so by permission of the Gold Commissioner of the district and upon the payment of a fee of \$10. This applies also to a claim abandoned for any reason whatever.

Mineral claims are, until the Crown grant is issued, held practically on a yearly basis, a condition of which is that during such year assessment work be performed to the value of at least \$100, or payment of such sum be made to the Mining Recorder. Such assessments must be recorded before the expiration of the year or the claim is deemed abandoned. If, however, the required assessment work has been performed within the year, but not recorded within that time, a free miner may within thirty days thereafter record such assessment work upon payment of an additional fee of \$10. The actual cost of the survey of a mineral claim, to an amount not exceeding \$100, may also be recorded as assessment work. If, during any year, work is done to a greater extent than the required \$100, any further sum of \$100—but not less—may be recorded and counted as further assessments. As soon as assessment work to the extent of \$500 is recorded, the owner of a mineral claim is entitled to a Crown grant on payment of a fee of \$25, and giving the necessary notices required by the Act. Liberal provisions are also made in the Act for obtaining mill-sites and other facilities in the way of tunnels and drains for the better working of claims.

Placer Claims.

Placer-mining is governed by the "Placer-mining Act," and by the interpretation clause its scope is defined as "the mining of any natural stratum or bed of earth, gravel, or cement mined for gold or other precious minerals or stones." Placer claims are of four classes, as follows:

- "Creek diggings": any mine in the bed of any stream or ravine;
- "Bar diggings": any mine between high and low water marks on a river, lake, or other large body of water;
- "Dry diggings": any mine over which water never extends;
- "Precious stone diggings": any deposit of precious stones, whether in veins, beds, or gravel deposits."

The following provisions as to extent of the various classes of claims are made by the Act:

- "In 'creek diggings' a claim shall be two hundred and fifty feet long, measured in the direction of the general course of the stream, and shall extend in width one thousand feet, measured from the general course of the stream five hundred feet on either side of the centre thereof.
- "In 'bar diggings' a claim shall be
 - "(a.) A piece of land not exceeding two hundred and fifty feet square on any bar which is covered at high water; or
 - "(b.) A strip of land two hundred and fifty feet long at high water mark, and in width extending from high water mark to extreme low water mark.
- "In 'dry diggings' a claim shall be two hundred and fifty feet square.

The following provision is made for new discoveries of placer-mines:

"If any free miner, or party of free miners, discovers a tract of land containing a new discovery of placer-mining and such discovery be valuable, he or they shall be entitled to a claim in such placer claims of the following sizes shall be a lot of free miners' claims:

- "To one discoverer, one claim;
- "To a party of two discoverers, two claims, one of 250 feet by 250 feet, and one of 250 feet by 125 feet;
- "And to each member of a party beyond two men or women, one of 125 feet by 125 feet."

"The width of such claims shall be the same as ordinary placer claims of the same class: Provided that where a discovery claim has been established in any locality no further discovery shall be allowed within five miles therefrom, measured along the watercourses."

Every placer claim shall be as nearly as possible rectangular in form, and marked by four legal posts at the corners thereof, firmly fixed in the ground. On each of such posts shall be written the name of the locator, the number and date of issue of his free miner's certificate, the date of the location, and the name given to the claim. In timbered localities all boundary-lines of a placer claim shall be blazed so that the posts can be distinctly seen, underbrush cut, and the locator shall also erect legal posts not more than 125 feet apart on all boundary lines. In localities where there is no timber or underbrush, monuments of earth and rock, not less than 2 feet high and 2 feet in diameter at base, may be erected in lieu of the last-mentioned legal posts, but not in the case of the four legal posts marking the corners of the claim.

A placer claim must be recorded in the office of the Mining Recorder for the mining division within which the same is situate, within fifteen days after the location thereof, if located within ten miles of the office of the Mining Recorder by the most direct means of travel. One additional day shall be allowed for every ten miles additional or fraction thereof. The number of days shall be counted inclusive of the day upon which such location was made, but exclusive of the day of application for record. The application for such record shall be under oath and in the form set out in the Schedule to the Act. A claim which shall not have been recorded within the prescribed period shall be deemed to have been abandoned.

To hold a placer claim for more than one year it must be re-recorded before the expiration of the record or re-record.

A placer claim must be worked by the owner, or some one on his behalf, continuously, as far as practicable, during working hours. If work is discontinued for a period of seventy-two hours, except during the close season, lay-over, leave of absence, sickness, or for some other reason to the satisfaction of the Gold Commissioner, the claim is deemed abandoned.

Lay-overs are declared by the Gold Commissioner upon proof being given to him that the supply of water is insufficient to work the claim. Under similar circumstances he has also the power to declare a close season, by a notice in writing and published in the Gazette, for all or any claims in his district. Tunnel and drain licences are also granted by him on the person applying giving security for any damage that may arise. Grants of right-of-way for the construction of tunnels or drains across other claims are also granted on payment of a fee of \$25, the owner of the claim crossed having the right for tolls, etc., on the tunnel or drain which may be constructed. These tolls, however, are, so far as the amount goes, under the discretion of the Gold Commissioner.

Co-owners and Partnerships

In both the "Mineral" and "Placer-mining" Acts provision is made for the formation of mining partnerships, both of a general and limited liability character. These are extensively taken advantage of and have proved very satisfactory in their working. Should a co-owner fail or refuse to contribute his proportion of the expenditure required as assessment work on a claim he may be "advertised out," and his interest in the claim shall become vested in his co-owners who have made the required expenditure, *pro rata* according to their former interests. It should not be forgotten that if any co-owner permit his free miner's certificate to lapse, the title of his associates is not prejudiced, but his interest reverts to the remaining co-owners.

Hydraulic and Dredging Leases.

Leases of unoccupied Crown lands may be granted by the Lieutenant Governor in Council upon recommendation of the Gold Commissioner of the district, after location, by placing a legal post at each corner of the ground applied for. On the post nearest the placer ground then being worked the locator must post a notice stating the name of the applicant, the location of the ground to be acquired, the quantity of ground, and the term for which the lease is to be applied for. Within thirty days application must be made in writing to the Gold Commissioner, in duplicate, with a plan of the ground on the back, and the application must contain the name of each applicant, the number of each applicant's free miner's certificate, the locality of the ground, the quantity of ground, the terms of the lease desired, and the rent proposed to be paid. A sum of \$20 must accompany the application, which is returned if the application is not granted. The term of leases must not exceed twenty years. The extent of ground covered by leases is not in excess of the following: Creek—half a mile; hydraulic diggings—80 acres; for dredging leases—5 miles; precious stone diggings—10 acres. Under Order in Council, the minimum rental for a creek lease is \$75 per annum, and for a hydraulic lease \$50 per annum, with a condition that at least \$1,000 per annum shall be spent in development. For dredging leases the usual rental is \$50 per mile per annum; development-work worth \$1,000 per mile per annum must be done.

Taxation of Mines.

Mineral or placer claims, when Crown granted, are subject to a tax of 25 cents per acre, payable on the 30th June annually, but if \$200 is spent in work in the year preceding that date, this tax is not levied. A tax of 2 per cent. is levied quarterly on all ores and other mineral substances mined in the Province, based upon the net value of such ore at the mouth of the shaft or tunnel, but where ore-producing mines produce under \$5,000 in a year half the tax is refunded, while placer or dredging mines that do not produce a gross value of \$2,000 in a year are entitled to a refund of the whole tax. These taxes are in substitution for all taxes on the land and for the taxes upon the personal property used in, or the income derived from a working of the mines, so long as the land is only used for mining purposes. By the "Land Act," a royalty of 50 cents per M. board measure, is levied on timber suitable for mining props, a cord of props being considered as 1,000 feet board measure.

Coal and Petroleum Prospecting Licences.

Any person desiring to prospect for coal, petroleum, or natural gas upon any unreserved lands held by the Crown may acquire a licence to do so over a rectangular block of land not exceeding 640 acres, of which the boundaries shall run due north and south and east and west, and no side shall exceed 80 chains (one mile) in length. Before entering into possession of the said land he shall place at the corner of such block a legal stake, or initial post, and shall inscribe thereon his name and the angle represented by such post, thus: "A B S N E corner," or as the case may be, and shall keep posted for 30 days in a conspicuous place upon the said land, and also on the Government office of the district, as well as publishing it in the B.C. Gazette and in a local newspaper for a like period, a notice of his intention to apply for such prospecting licence.

The application for said licence shall be in writing, in duplicate, and shall contain the best written description possible, with a diagram of the land sought to be acquired, and shall be accompanied with a fee of \$100. The application shall be made to the Assistant Commissioner of Lands for the district, and by him forwarded to the Minister of Lands, who may grant

MINERAL PRODUCTION OF BRITISH COLUMBIA.

METHOD OF COMPUTING PRODUCTION.

In assembling the output of the lode mines in the following tables, the established custom of this Bureau has been adhered to, viz. The output of a mine for the year is considered that amount of ore for which the smelter or mill returns have been received during the year. This system does not give the exact amount mined during the year, but rather the amount credited to the mine on the company's books during such year.

For ore shipped in December the smelter returns are not likely to be received until February in the new year, or later, and have, consequently, to be carried over to the credit of such new year. This plan, however, will be found very approximate for each year, and ultimately correct, as ore not credited in one year is credited in the next.

In the lode mines tables, the amount of the shipments has been obtained from certified returns received from the various mines, as provided for in the "Inspection of Metalliferous Mines Act, 1897." In calculating the value of the products, the average prices for the year in the New York Metal Market have been used as a basis. For silver 95 per cent., for lead 90 per cent., and for zinc 85 per cent., of such market prices have been taken. Treatment and other charges have not been deducted, except that in copper the amount of metal actually recovered has been taken, thus covering loss in slags.

TABLE I. TOTAL PRODUCTION FOR ALL YEARS UP TO AND INCLUDING 1914.

Gold, placer	\$ 73,269,003
Gold, lode	81,595,516
Silver	37,769,282
Lead	31,468,462
Copper	86,939,370
Coal and coke	149,814,462
Building-stone, bricks, etc.	23,827,101
Other metals, zinc, etc.	2,198,949
Total	\$486,822,745

TABLE II.— PRODUCTION FOR EACH YEAR FROM 1852 TO 1913 (INCLUSIVE).

1852 to 1892 (inclusive)	\$ 81,090,000
1893	3,588,413
1894	4,225,717
1895	5,643,042
1896	7,597,956
1897	10,455,268
1898	10,296,861
1899	12,393,131
1900	16,314,751
1901	20,086,780
1902	17,486,550
1903	17,495,974
1904	18,977,339
1905	22,461,925
1906	24,980,546
1907	25,882,560
1908	23,851,277
1909	24,443,025
1910	26,377,066
1911	23,499,072
1912	32,449,890
1913	39,296,398
1914	26,388,825
Total	\$486,822,745

Table III. gives a statement in detail of the quantities and value of the different mineral products for the years 1912, 1913, and 1914. It has been impossible as yet to collect complete statistics regarding building-stone, lime, bricks, tiles, and other miscellaneous products, but such figures as it has been possible to secure are given in some detail in Table V.

TABLE III.
QUANTITIES AND VALUE OF MINERAL PRODUCTS FOR 1912, 1913, AND 1914.

	Customary Measure.	1912.		1913.		1914.	
		Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Gold, placer	Ounces		\$ 555,500		\$ 510,900		\$ 565,000
" lode	"	257,496	5,322,442	272,254	5,627,490	247,170	5,109,004
Silver	"	3,132,108	1,810,045	3,465,856	1,968,606	3,602,180	1,876,736
Lead	Pounds	44,871,454	1,895,627	55,364,677	2,175,832	50,625,048	1,771,877
Copper	"	51,456,537	8,408,513	46,490,305	7,094,489	45,009,609	6,121,319
Zinc	"	5,358,280	316,139	6,758,768	324,421	7,866,467	346,125
Coal	Tons, 2,240 lb.	2,628,804	9,200,814	2,137,483	7,481,190	1,810,967	6,338,385
Coke	" "	264,333	1,585,998	286,045	1,716,270	234,577	1,407,462
Miscellaneous products			3,435,722		3,398,100		2,852,917
			\$2,440,800		\$30,296,398		\$26,388,825

TABLE IV.
OUTPUT OF MINERAL PRODUCTS BY DISTRICTS AND DIVISIONS.

NAMES.	DIVISIONS.			DISTRICTS.		
	1912.	1913.	1914.	1912.	1913.	1914.
CARIBOO DISTRICT				\$ 268,000	\$ 226,024	\$ 308,807
Cariboo Mining Division	\$ 180,000	\$ 131,000	\$ 166,500			
Quesnel "	80,000	55,000	37,000			
Omineca "	8,000	40,024	105,307			
CASSIAR DISTRICT				467,579	412,748	2,079,177
EAST KOOTENAY DISTRICT				5,723,004	5,947,935	4,703,672
WEST KOOTENAY DISTRICT				6,165,255	7,092,107	6,311,205
Ainsworth Division	371,760	627,150	471,534			
Slocan and Slocan City "	1,951,315	2,258,309	1,780,936			
Nelson "	581,700	863,966	579,563			
Trail Creek "	3,214,751	3,395,771	3,456,610			
Other parts	45,729	56,911	22,562			
BOUNDARY DISTRICT				8,716,406	7,925,336	4,867,029
Osoyoos, Grand Forks & Greenwood Divisions	7,903,006	6,833,902	4,270,744			
Similkameen, Nicola, Vernon	748,000	1,019,340	533,901			
Yale, Ashcroft, Kamloops	64,500	72,004	62,204			
LILLOUET DISTRICT				5,000	71,445	38,978
COAST DISTRICTS (Nanaimo, Alberni, Clayoquot, Quatsino, Victoria, Vancouver)				11,095,556	8,620,803	8,079,957
				\$32,440,800	\$30,296,398	\$26,388,825



Ores from Skeena and Portland Canal Mining Divisions—British Columbia,
Panama-Pacific Exposition.



Gold-copper-silver Ores from Texada Island—British Columbia,
Panama-Pacific Exposition.

TABLE V.
MISCELLANEOUS PRODUCTS AND TOTALS OF PRODUCTION, 1911.

DISTRICT AND DIVISION.	DETAILS OF MISCELLANEOUS PRODUCTS.											SUMMARY OF TOTALS OF PRODUCTION.			
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	Fire and Lime-stone.	Building- stone.	Trap.	Cushed Block.	Sand and Gravel.	Pottery and Tile.	Red Brick.	Fire-Brick.	Clay, Cypose, etc.	Total Mis- cellaneous Products.	Total Out- put of Others.	Total of Metallic Minerals.	Totals for Divisions.	Totals for Districts.	
Carboniferous															
Carbonyl															
Quartz															
Oxide of Copper															
Alum.															
Lead-Sulphate															
Siderite, Portland C- ement, and Magn. Chloride	5,000	22,000	5,000	6,000	9,000	25,000				72,000	1,663,367	1,736,367		308,807	
E. of Kootenai															
Fort Steele															
Windsor and Golden															
West Kootenai															
Alvord															
Slocan & C. of C. V.															
Nelson															
Trail Creek															
Other Divisions															
Y. of															
Grand Forks															
Greenwood															
Oxyden															
Smithton															
New York															
Vernon															
Yale															
Ashcroft															
Kamloops															
Lillooet															
Coast-Island															
861,756	72,311	87,389	677,435	66,641	312,280	152,911	115,069	107,301	8,088	2,419,817	3,753,099	1,297,511	8,679,557	28,974	
861,756	112,311	118,889	679,435	173,241	408,280	152,911	163,299	114,794	8,088	2,832,917	7,745,847	15,790,091	26,388,825	26,388,825	

TABLE VI.—PLACER GOLD.

Table VI. contains the yearly production of placer gold to date, as determined by the returns, sent in by the banks and express companies, of gold transmitted by them to the mints, and from returns sent in by the Gold Commissioners and Mining Recorders. To these yearly amounts one-third was added up to the year 1878; from then to 1895 and from 1898 to 1909, one-fifth; and since then one-tenth, which proportions are considered to represent, approximately, the amount of gold sold of which there is no record. This placer gold contains from 10 to 25 per cent. silver, but the silver value has not been separated from the totals, as it would be insignificant.

YIELD OF PLACER GOLD PER YEAR TO DATE.

1858	.....	\$ 705,000	1873	.....	\$ 1,305,749	1888	.....	\$ 616,731	1903	.....	\$ 1,060,420
1859	.....	1,615,070	1874	.....	1,844,618	1889	.....	588,923	1904	.....	1,115,300
1860	.....	2,228,543	1875	.....	2,474,004	1890	.....	490,435	1905	.....	969,300
1861	.....	2,666,118	1876	.....	1,786,648	1891	.....	429,811	1906	.....	948,400
1862	.....	2,656,903	1877	.....	1,608,182	1892	.....	399,526	1907	.....	828,000
1863	.....	3,913,565	1878	.....	1,275,204	1893	.....	356,131	1908	.....	647,000
1864	.....	3,735,859	1879	.....	1,290,058	1894	.....	405,516	1909	.....	477,000
1865	.....	3,491,205	1880	.....	1,013,827	1895	.....	481,683	1910	.....	540,000
1866	.....	2,662,106	1881	.....	1,046,737	1896	.....	544,026	1911	.....	426,000
1867	.....	2,480,868	1882	.....	954,085	1897	.....	513,520	1912	.....	555,500
1868	.....	3,372,972	1883	.....	794,252	1898	.....	643,346	1913	.....	510,000
1869	.....	1,774,978	1884	.....	736,165	1899	.....	1,344,900	1914	.....	565,000
1870	.....	1,236,956	1885	.....	713,738	1900	.....	1,278,724			
1871	.....	1,799,440	1886	.....	903,651	1901	.....	970,100			
1872	.....	1,610,972	1887	.....	693,709	1902	.....	1,073,149			
Total.....											
\$73,269,603											

TABLE VII.—PLACER GOLD PER YEAR TO DATE.

YEAR.	GOLD.		SILVER.		LEAD.		COPPER.		ZINC.		TOTAL VALUE.
	Oz.	Value.	Oz.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	
1887	.....	\$	17,690	17,333	294,800	9,216	.....	.....	.....	.....	26,547
1888	.....	.....	79,780	75,000	674,300	29,813	.....	.....	.....	.....	104,813
1889	.....	.....	53,192	47,875	165,100	6,498	.....	.....	.....	.....	54,371
1890	.....	.....	70,427	75,948	Nil.	Nil.	.....	.....	.....	.....	73,948
1891	.....	.....	4,591	4,000	Nil.	Nil.	.....	.....	.....	.....	4,000
1892	.....	.....	77,466	66,055	808,120	33,064	.....	.....	.....	.....	99,660
1893	.....	23,494	227,000	195,000	2,135,023	78,096	.....	.....	.....	.....	297,400
1894	6,252	125,014	746,379	470,219	5,662,523	169,875	324,680	10,234	.....	.....	781,342
1895	39,254	785,271	1,486,522	977,229	16,475,464	532,255	955,840	47,442	.....	.....	2,342,397
1896	22,260	1,244,180	3,133,343	2,160,680	24,199,977	721,384	3,818,556	199,926	.....	.....	4,257,179
1897	196,141	3,125,829	5,472,973	3,275,288	38,841,135	1,399,317	5,325,180	260,258	.....	.....	7,052,434
1898	110,031	2,591,217	4,292,491	2,373,841	31,693,759	1,077,683	7,271,678	874,781	.....	.....	6,524,420
1899	148,315	2,877,573	2,939,413	1,693,708	21,862,436	878,870	7,722,591	1,351,453	.....	.....	6,751,931
1900	167,153	3,453,281	3,958,175	2,309,200	63,328,621	2,691,887	9,967,080	1,615,280	.....	.....	10,069,757
1901	210,384	4,348,665	5,151,333	2,884,745	51,582,906	2,062,703	27,693,746	4,446,963	.....	.....	13,683,044
1902	236,491	4,888,369	3,917,917	1,941,328	22,536,381	821,832	24,630,607	3,446,673	.....	.....	11,101,192
1903	232,831	4,812,016	2,996,294	1,321,472	18,089,283	689,744	34,359,921	4,547,353	.....	.....	11,571,367
1904	222,042	4,804,098	3,222,431	1,719,574	36,046,344	1,421,874	35,716,128	4,578,037	.....	.....	13,309,035
1905	238,660	4,634,102	3,479,417	1,971,818	36,589,793	1,399,029	37,092,551	8,276,222	.....	.....	15,189,164
1906	224,027	4,690,439	2,999,267	1,697,329	52,408,217	2,067,578	42,998,458	8,288,265	.....	.....	17,484,192
1907	196,179	4,055,029	2,745,448	1,705,825	47,728,793	2,291,458	49,832,729	8,196,544	.....	.....	16,216,847
1908	255,582	5,282,880	2,631,389	1,321,483	43,196,733	1,632,769	47,274,614	6,240,249	.....	.....	14,477,411
1909	238,224	4,924,090	2,532,742	1,239,270	44,396,346	1,709,259	45,597,245	5,918,522	8,500,000	460,000	14,191,141
1910	267,701	5,515,280	2,439,211	1,243,016	34,058,746	1,386,340	38,243,334	4,871,512	4,184,192	192,473	13,228,513
1911	228,617	4,735,512	1,922,594	958,293	29,872,397	1,400,521	39,927,656	4,571,644	2,634,544	129,002	11,454,063
1912	257,496	5,122,442	3,132,108	1,810,045	44,871,454	1,805,627	51,446,537	8,408,313	3,528,289	316,139	17,662,766
1913	272,254	5,627,199	3,463,806	1,968,006	55,264,677	2,178,822	60,499,395	7,094,489	6,768,768	324,421	17,190,838
1914	247,170	5,109,094	3,662,180	1,876,736	50,625,048	1,771,877	45,909,089	6,121,319	7,896,467	346,125	15,225,961
Total	3,958,273	81,596,516	66,749,895	37,769,282	791,648,396	31,408,402	895,267,986	86,939,370	35,392,251	1,708,250	239,429,880

TABLE VIII.—COAL AND COKE PRODUCTION PER YEAR TO DATE.

COAL.		
Year.	Tons (1,000 lbs.)	Value.
1886-1881.....	1,873,907	\$ 6,003,245
1882.....	282,139	846,417
1883.....	213,299	639,897
1884.....	394,070	1,182,210
1885.....	265,596	796,788
1886.....	326,636	979,908
1887.....	413,369	1,240,080
1888.....	489,394	1,467,963
1889.....	579,839	1,739,490
1890.....	678,149	2,034,420
1891.....	1,029,097	3,087,294
1892.....	826,335	2,479,995
1893.....	978,294	2,934,882
1894.....	1,012,953	3,038,859
1895.....	959,654	2,848,062
1896.....	896,222	2,688,666
1897.....	882,854	2,648,562
1898.....	1,135,865	3,407,595
1899.....	1,396,324	3,948,972
1900.....	1,439,395	4,318,785
1901.....	1,460,331	4,389,993
1902.....	1,397,394	4,192,182
1903.....	1,168,194	3,504,582
1904.....	1,253,628	3,769,884
1905.....	1,384,512	4,152,936
1906.....	1,517,393	4,551,969
1907.....	1,899,067	6,399,235
1908.....	1,677,849	5,872,472
1909.....	2,096,476	7,092,066
1910.....	2,899,046	9,809,161
1911.....	2,493,062	7,675,717
1912.....	2,628,894	9,299,814
1913.....	2,437,483	7,481,199
1914.....	1,840,967	6,338,385
Total.....	41,499,387	8132,507,063
COKE.		
Year.	Tons (1,000 lbs.)	Value.
1895-97.....	19,296	\$ 96,980
1898 (estimated).....	35,000	175,000
1899.....	34,251	171,255
1900.....	85,149	425,745
1901.....	127,081	635,405
1902.....	128,015	640,075
1903.....	165,543	827,715
1904.....	258,428	1,292,140
1905.....	271,785	1,358,925
1906.....	499,227	998,455
1907.....	222,913	1,114,578
1908.....	247,399	1,484,394
1909.....	258,763	1,293,218
1910.....	218,029	1,090,174
1911.....	69,035	345,099
1912.....	264,333	1,321,998
1913.....	286,045	1,430,250
1914.....	234,577	1,197,462
Total.....	3,101,869	817,597,399

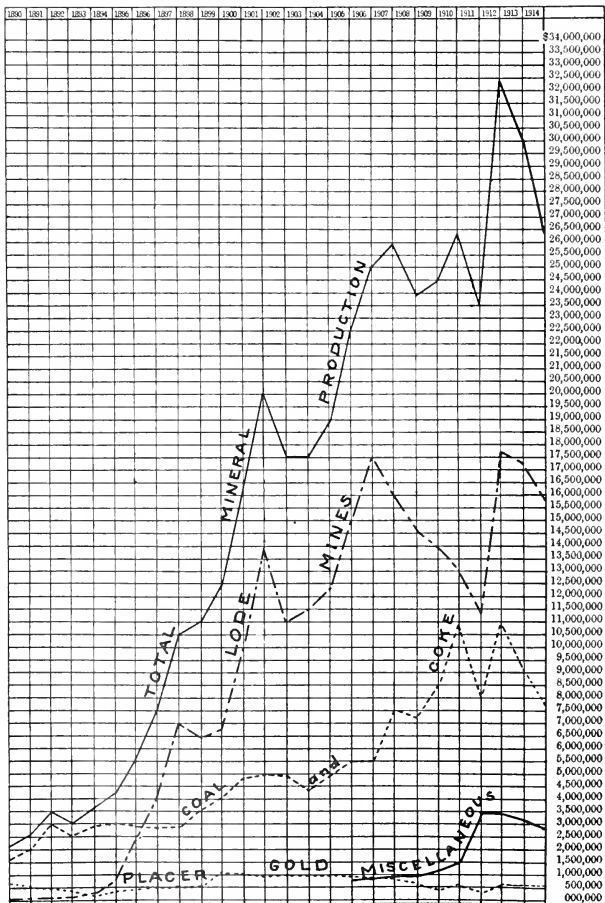
TABLE IX. — PRODUCTION IN DETAIL OF THE

DISTRICT.	YEAR.	GOLD—FLAKE.		GOLD—LOPE.		SILVER.		
		TONS.	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.
				\$		\$		\$
Cariboo	1911	4,800	126,000	.....	.....	.....	.....	.....
Cariboo Division.....	1912	3,000	140,000	.....	.....	.....	.....	.....
	1913	6,500	131,000	.....	.....	.....	.....	.....
	1914	8,250	165,000	.....	.....	.....	.....	.....
Quesnel	1911	1,700	34,000	.....	.....	.....	.....	.....
	1912	2,500	50,000	.....	.....	.....	.....	.....
	1913	1,400	20,000	.....	.....	.....	.....	.....
	1914	1,750	35,000	.....	.....	.....	.....	.....
Omineca	1911	500	10,000	.....	.....	.....	.....	.....
	1912	400	8,000	.....	.....	.....	.....	.....
	1913	350	7,000	62	1,251	46,298	26,297	.....
	1914	850	3,000	203	4,196	135,255	70,743	.....
Cassiar	1911	58	11,250	225,000	3	62	2,659	1,343
Atlin Division.....	1912	14,500	290,000	.....	.....	.....	.....	.....
	1913	210	15,750	315,000	1,575	28,008	.....	.....
	1914	270	16,100	322,000	1,000	20,670	.....	.....
Liard, Stikine, Skeena, Queen Charlotte, Portland Canal Divisions.	1911	7,000	300	6,000	500	10,335	27,323	13,836
	1912	3,240	450	5,000	197	4,072	5,868	3,301
	1913	51	650	15,000	29	569	4,714	2,678
	1914	261,937	1,150	23,000	2,884	59,612	131,509	68,516
East Kootenay	1911	30,545	150	3,000	.....	.....	350,235	167,231
Fort Steele Division.....	1912	29,910	100	2,000	.....	.....	375,918	217,821
	1913	32,624	100	2,000	.....	.....	362,311	205,793
	1914	33,394	50	1,000	.....	.....	492,030	256,374
Windermere Golden.....	1912	20,400	.....	.....	.....	.....	7,405	4,270
	1913	10,000	.....	.....	.....	.....	4,756	2,701
	1914	.....	.....	.....	.....	.....	.....	.....
West Kootenay	1911	671	.....	4	83	.....	.....	39,183
Ainsworth Division.....	1912	32,741	.....	20	1,653	307,755	174,284	.....
	1913	92,472	.....	85	517	447,015	253,905	.....
	1914	66,441	.....	100	2,067	329,585	171,714	.....
Slocan and Slocan City.....	1911	45,406	.....	47	971	793,926	402,044	.....
	1912	103,629	.....	198	4,092	1,657,105	957,641	.....
	1913	116,296	.....	252	5,209	1,841,226	1,045,816	.....
	1914	104,510	.....	13	239	1,775,575	925,283	.....
Nelson Division.....	1911	35,400	50	1,000	361,469	164,182	94,881	.....
	1912	32,323	50	1,000	17,513	361,094	164,182	94,881
	1913	79,443	50	1,000	26,324	544,117	129,011	73,278
	1914	57,379	.....	15,258	316,210	150,208	78,200	.....
Trail Creek Division.....	1911	2,406	.....	116,682	2,411,837	88,076	44,002	.....
	1912	21,870	.....	152,973	2,729,049	87,530	50,584	.....
	1913	351,870	.....	137,004	883,873	109,585	62,244	.....
	1914	237,200	.....	133,568	2,834,201	136,185	70,952	.....
Revelstoke, Trout Lake and Lardner.	1911	740	100	2,000	67	1,178	67,884	34,376
	1912	451	225	4,500	89	1,840	43,536	25,159
	1913	546	100	2,000	54	1,116	25,297	13,289
	1914	149	100	2,000	8	165	11,255	5,835
Boundary	1911	1,241,819	50	1,000	87,745	1,812,690	326,849	165,517
(Grand Forks, Greenwood and Osoyoos Divisions.)	1912	1,989,084	50	1,000	194,819	2,167,229	389,341	225,000
	1913	1,841,795	50	1,000	101,195	2,091,701	394,048	233,819
	1914	1,063,229	50	1,000	84,908	1,775,048	347,381	181,208
Similkameen, Nicola, and Vernon Divisions.....	1912	100	.....	2,000	.....	.....	.....	.....
	1913	54	150	3,000	1	30	325	190
	1914	150	150	3,000	35	724	15	8
Yale, Ashcroft and Kamloops Divisions.....	1911	4,257	.....	1,000	52	1,975	343	174
	1912	100	.....	2,000	.....	.....	.....	.....
	1913	257	100	2,000	25	517	120	72
	1914	279	150	3,000	14	289	57	30
Lillooet	1911	84	250	5,000	71	1,467	.....	.....
Lillooet and Clinton Divisions.....	1912	250	.....	5,000	.....	.....	.....	.....
	1913	840	150	3,000	1,368	28,277	295	168
	1914	120	150	3,000	231	4,775	300	203
Coast	1911	147,202	50	1,000	5,815	120,196	169,956	51,169
(Nanaimo, Alberni, Clayoquot, Quat- sino, New Westminster, Vancouver, and Victoria Divisions.)	1912	212,875	50	1,000	2,497	51,613	98,468	56,905
	1913	231,286	50	1,000	4,500	94,255	102,739	58,356
	1914	256,463	50	1,000	3,908	80,778	91,574	47,710
TOTALS	1911	1,779,758	21,300	426,000	928,617	4,725,513	1,892,364	958,298
	1912	2,688,632	37,775	555,500	297,406	5,392,442	3,132,118	1,810,945
	1913	2,663,899	25,500	510,000	272,254	5,627,490	3,465,846	1,968,606
	1914	2,175,971	29,250	565,000	247,170	5,109,004	3,020,180	1,876,736

METALLIFEROUS MINES, ETC., FOR 1911, 1912, 1913, AND 1914.

LEAD,		COPPER,		ZINC,		TOTALS FOR DIVISIONS,				TOTALS FOR DISRICTS,
Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	1911	1912	1913	1914	1914
	\$		\$		\$	\$	\$	\$	\$	\$
						186,000	186,000	131,000		282,907
						24,000	20,000	20,000	165,000	
						10,000	5,000	10,000	35,000	
156,862	6,167	1,878	751					10,000	12,807	2,006,577
323,462	11,322	6,000	616							
		18,151	2,351			28,379	23,000	31,000	342,670	
248,578	9,456					29,000	25,000	16,740	1,663,907	1,127,583
11,512	1,679	88,466	11,446							
6,579	274	11,123,376	1,512,779							
17,180,069	682,891					870,142	953,728	945,829	1,127,583	
18,208,238	730,967									
18,225,083	728,096									
24,643,105	870,209									
2,249,247	96,209			11,944	840		10,204	100,768		6,267,306
2,495,355	108,067									
290,000	11,502					20,768				
4,803,891	195,723						371,760			
9,027,861	354,795			130,689	7,111			610,150		
8,069,525	232,433			230,000	12,320					461,534
6,705,671	266,882			2,631,441	139,097					
16,944,811	681,859			5,312,427	267,711	798,764		1,931,315		
22,648,766	899,096			6,668,688	317,188			2,275,699		
15,233,910	533,197			7,254,464	319,187					1,777,936
1,258,846	76,268					481,205				
2,003,000	96,270	26,270	4,291				534,456			
1,936,418	76,191	81,139	121,479					512,866		
2,004,436	70,155	596,764	79,000	332,003	14,660					559,043
8,291	339	3,420,792	424,697			5,881,006				
11,296	459	2,434,000	31,294				514,807			
		25,280,000	2,870,000					1,281,771		
		3,779,830	514,057							3,449,210
511,314	20,470					28,024				
229,966	9,230						49,720			
521,771	20,796							26,911		
128,912	4,512									12,562
29,714	1,184	22,267,379	2,794,117			4,745,317				4,180,770
45,982	1,897	11,423,199	1,414,111				7,840,780			
1,676	59	16,423,959	2,234,339					3,688,862		4,171,741
						1,000				
									414	3,732
		14,525	1,975							5,294
										2,403
										2,361
										1,607,041
		50,796,721	1,781,647							
		1,147,674	21,289							
		14,441,214	1,712,207							
		13,070,245	1,777,563							1,170,041
29,870,867	1,069,371	36,927,000	4,731,644	2,644,444	1,000,000	11,888,000				
44,871,134	1,869,517	3,142,000	2,408,100	1,000,000	1,000,000					
25,264,674	1,117,000	16,400,000	7,994,800	1,000,000	1,000,000					
50,425,043	1,771,877	45,000,699	6,121,319	1,644,467	346,125					37,700,000

TABLE X.—Showing Mineral Production of British Columbia.



1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914
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TABLE
SHOWING MINERAL PRODUCTION
IN
BRITISH COLUMBIA

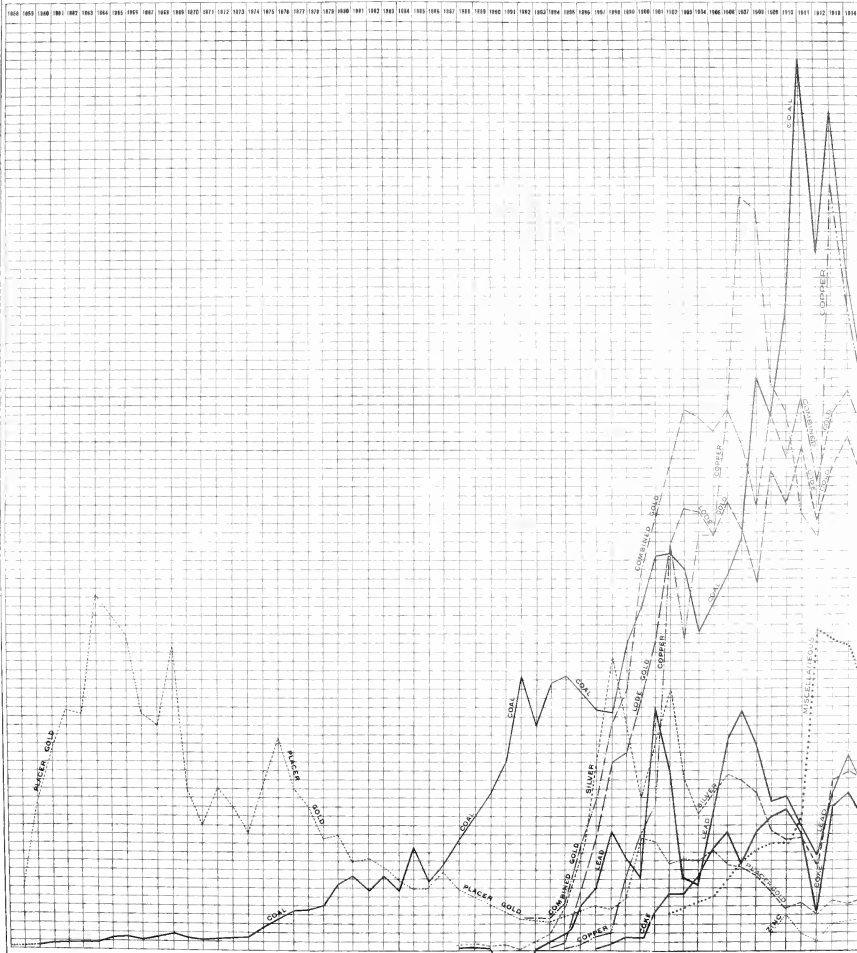


TABLE XI.

Showing Comparative Production in 1914 of Certain Minerals by British Columbia and All Other Provinces of Dominion Combined.

YUKON TERRITORY.	Gold	Silver	Coal
	\$5,125,396	\$35,132	\$53,760
Aggregate of Provinces.			
Gold.	\$11,296,369	\$5,674,004	
Silver.	14,515,633	1,376,736	
Copper.	19,317,113	6,124,319	
Lead.	1,771,377	1,771,377	
Iron.	1,133,912	Nil	1,133,912
Coal.			6,333,335
Coke.			1,497,162
Total.	\$73,673,234	\$23,159,713	\$60,433,451

ALL OTHER PROVINCES COMBINED.

BRITISH COLUMBIA.

* Taken from Preliminary Report on the Mineral Production of Canada in 1914, corrected by final figures of British Columbia Statistics Office for British Columbia Valuation.

PROGRESS OF MINING.

The year 1914, during its first half, gave promise of being an exceedingly favourable one for mining in the Province, and it was even expected that its mineral production would exceed that of any previous year.

These expectations, however, were shattered by the unprecedented conditions which confronted the mineral industry during the last half of the year. These conditions were brought about by the great European war, which so upset the metal markets of the world that quotations of prices for the more important metals were unobtainable for months. Such a condition was never before experienced, leaving no basis on which present sales of ores or metals could be transacted, or even the future values of these predicted.

Gold alone had a stable value, but the other metals that go to make up the mineral output of the Province are all such as America produces a large surplus of, which surplus had been disposed of in the European markets, and with these markets temporarily destroyed, the production of these metals was either stopped or materially curtailed.

Recently, however, since the eventual outcome of the struggle can be definitely predicted and Britain has obtained the undisputed command of the seas, the metal markets have been able to again resume business and to quote prices, these, however, being somewhat lower than previously prevailing.

It will be seen, therefore, that the conditions adversely affecting the mining industry are but temporary and with their end within sight.

The production for 1914, although it is materially less than those for the years 1912 and 1913, is, nevertheless, about the same as for the year 1910, while it is considerably greater than that of any other year and is much greater than the average production for the last ten years.

The decrease shown this year, while it is partially caused by a lesser quantity of the metals produced, is not entirely attributable to that cause, but is partially due to the lower average price of the metals prevailing in 1914 as compared with those of 1913.

For example, the average market value of silver in 1914 was about 4.9 cents an ounce lower than in 1913; copper was 2.27 cents a pound lower; lead, 0.5 cent a pound lower; zinc, 0.45 cent a pound lower.

If the metal prices of 1913 had been maintained during 1914 and applied to the output for that year, this output would have been valued at some \$1,170,117 greater than it appears. The lower average prices for the metals prevailing in 1914 are partially attributable to the war, but to some extent were occasioned by the financial stringency which preceded the war and possibly foreshadowed it.

The gross value of the mineral production for 1914 was \$26,388,825, a decrease from that of the year 1913 of \$3,907,573, or about 12.2 per cent.

The gradual increase in production during the past twenty-three years, and its fluctuations, are graphically shown in Table X., on page 14 of this Report.

The tonnage of ore mined in the lode mines of the Province during the past year was less than that of 1913. The ore mined amounted to 2,175,971 tons, showing a decrease from that of the previous year of 187,838 tons.

The tonnage mined in 1914 was produced by the various districts in about the following proportions: Boundary, 50.3 per cent.; Rossland, 13.6 per cent.; Cassiar, 12.1 per cent.;



Copper-gold Ores and Smelter Products—Boundary District, British Columbia
Panama-Pacific Exposition.



Clay and Cement Industries of British Columbia—Boundary District
Panama-Pacific Exposition.

the Coast District, 11.7 per cent.; Slovan District, 4.7 per cent.; Ainsworth, 3.1 per cent.; Nelson, 2.7 per cent.; East Kootenay, 1.7 per cent.; and all other parts of the Province combined, 0.1 per cent.

The following table shows the number of mines which shipped ore during the year 1914, the districts in which they are situated, and the tonnage produced in each district, together with the number of men employed, both above ground and underground.

TABLE SHOWING DISTRIBUTION OF SHIPPING MINES IN 1914.

	Tons of Ore shipped.	No. of Mines shipping.	No. of Mines shipping over 100 Tons in 1914.	MEN EMPLOYED IN THESE MINES.		
				Below.	Above.	Total.
CARIBOO AND CASSIAR:						
Omineca, Athin, Skeena, Queen Charlotte, and Portland Canal	263,107	10	4	253	125	378
EAST KOOTENAY:						
Fort Steele	36,384	2	2	76	32	108
Windermere-Golden						
WEST KOOTENAY:						
Ainsworth	66,441	14	6	176	87	263
Slocan and Slocan City	104,510	23	10	406	156	562
Nelson	57,879	19	12	239	121	363
Trail Creek	297,260	5	3	600	153	753
Other Divisions	149	3		41	6	47
BOUNDARY:						
Grand Forks, Greenwood, and Osoyoos	1,093,229	12	10	568	281	852
Ashcroft-Kamloops	279	1	1	20	12	32
Similkameen-Vernon	150	1	1	3	1	7
LILLOOET:	120	1	1	4	2	6
COAST:	256,463	7	6	248	365	613
Total	2,475,971	98	56	2,604	1,350	3,954

In explanation of the table it should be said that, in its preparation, a mine employing twelve men for four months is credited in the table with four men for twelve months, so that the total given is less than the actual number of individuals who worked in the mines during the year.

TABLE SHOWING NON-SHIPING MINES AND MEN EMPLOYED.

DISTRICT.	NUMBER OF MINES.			MEN EMPLOYED.		
	Working.	Idle.	Total.	Below.	Above.	Total.
COAST AND CASSIAR	3	9	12	24	11	35
EAST KOOTENAY	2	2	4			
AINSWORTH	3	3	10	16	6	22
SLOCAN	8	16	24	57	12	69
NELSON	2	8	10	8	2	10
TRAIL CREEK	2	7	9	7	2	12
LARDEAU	2	3	5	3	1	4
BOUNDARY	7	21	28	41	15	86
LILLOOET	1	1	2	1	1	2
Total	30	72	102	137	83	220

SUMMARY OF THE STATISTICAL TABLES.

Referring to the preceding tables of the mineral production of the Province, the following is a summary of their contents:—

TABLE I. shows the total gross value of each mineral product mined in the Province up to the end of 1914, aggregating \$486,822,745. From this table it will be seen that coal-mining has produced more than any other separate class of mining, a total of \$149,814,462; followed next in importance by copper at \$86,939,370, and next in order is lode gold at \$81,595,516, with placer gold in fourth place at \$73,269,603.

The metal gold, obtained from both placer and lode mining, amounts to a value of \$154,865,119, the greatest amount derived from any one mineral, the next important being coal, the total gross value of which, combined with that of coke, is \$149,814,462, followed by copper at \$86,939,370, silver at \$37,709,282, and lead at \$31,468,462.

TABLE II. shows the value of the total production of the mines of the Province for each year from 1893 to 1914 (inclusive), during which period the output increased nearly tenfold, and reached a production, for the year 1913, valued at \$30,296,398, which is nearly three times what it was in 1898. The gross production for the year 1914, is \$26,388,825, which is materially less than that of either the year 1912 or 1913, a condition not due to the mines, but to be accounted for by the disruption of the metal markets occasioned by the war, which necessitated the closing-down of some of the larger mines during the last half of the year. During the first six months, the year gave promise of making a record production.

The value of the total mineral production of the Province up to the end of 1914 was \$486,822,745.

TABLE III. gives the quantities in the customary units of measure, and the values, of the various metals or minerals which go to make up the total of the mineral production of the Province, and also, for the purposes of comparison, similar data for the two preceding years.

The table shows that there has been this year an increase in the production of placer gold of some \$55,000, but at the same time a decrease in the output of lode gold of \$518,486, making a decrease of \$463,486 in the total production of the metal.

The amount of silver produced this year was 3,602,180 oz., having a gross value of \$1,876,736, an increase in the number of ounces produced of 136,324, due to an increased production in the Omineca, Skeena, and Fort Steele Divisions. The gross value of the silver product this year, however, shows a decrease over that of last year of \$91,870, on account of the market price of silver being lower during this year.

The table shows an output of lead in 1914 amounting to 50,625,048 lb., valued at \$1,771,877, which is a decrease from the production of the preceding year of 4,739,629 lb. of lead.

The production of copper this year was 45,009,699 lb., valued at \$6,121,319, a decrease in amount of 1,450,606 lb., or about 3.12 per cent. The value of the product was less than that of the preceding year by \$973,170—a decrease of 13.7 per cent.

TABLE IV. shows the proportions of the total mineral productions made in each of the various districts into which the Province is divided.

It will be noted that this year again the Coast District has the honour of first place on the list, followed, in order of importance, by the West Kootenay and Boundary Districts. The Coast and East Kootenay Districts owe a considerable proportion of their output to the coal-mines situated within their limits, whereas, in the other districts, the production is chiefly from metal-mining.

The Coast District also derives a large proportion of its production from "Miscellaneous products," such as building materials, etc., due to the larger cities therein; this year this amounted to \$2,119,817, as shown in Table V.

In this table, this year again, the value of zinc has been distributed to the districts producing it, which has occasioned some changes in this table as compared with the 1909 Report, thus making it differ from the column in that and previous reports.

TABLE V. is a new table introduced three years ago, and is an endeavour to show in some detail the production of those products, such as building materials, previously summarized under "Miscellaneous products," and which amounts this year to \$2,852,917. Much difficulty has been found in obtaining reliable figures regarding these products, and in many cases they have had to be estimated; but, while the figures are not as complete as desired, they are at least approximate, and show what an important branch of mineral production this has become.

TABLE VI. gives the statistical record of the placer mines of the Province from 1858 to 1914, and shows a total production of \$73,269,603. The output for 1914 was \$565,000, an increase, as compared with the previous year, of about 10.8 per cent.

TABLE VII. relates entirely to the lode mines of the Province, and shows the quantities and values of the various metals produced each year since the beginning, in 1887, of such mining in the Province. The gross value of the product of these mines to date is \$239,420,880; this figure includes the zinc production of 1909 and all subsequent years.

Last year a new column was made in this table in which to record the zinc production, and the output since 1909 has been recorded therein. In former years the zinc production was small and was listed as miscellaneous material.

TABLE VIII. contains the statistics of production of the coal-mines of the Province. The total amount of coal produced to the end of 1914 was 41,199,387 tons (of 2,240 lb.), worth \$132,507,063. Of this, there was produced in 1914 some 1,810,967 tons valued at \$6,338,385, a decrease of 326,516 tons in quantity and of \$1,142,805 in value compared with the preceding year. In these figures of coal production the coal used in making coke is not included, as such coal is accounted for in the figures of output of coke. The amount of coal used in making coke in 1914 was 355,461 tons, from which was made 234,577 tons of coke, having a value of \$1,407,462, a decrease from the preceding year of 51,468 tons, or about 17.95 per cent., with a decrease in value of \$308,808. While 234,577 tons of coke was actually made, only 234,480 tons was actually sold; 94 tons being added to the stocks at the mines, and 3 tons was used under the company's boilers. The total value of the output of the collieries of the Province in 1914 was \$7,745,847.

The average selling prices taken this year in the calculation of value of product are the same as those used last year; that for coal being \$3.50 and for coke \$6 a ton of 2,240 lb. The prices used in calculations prior to 1907 were \$3 and \$5 respectively.

More detailed statistics as to the coal production of the Province and of the separate districts are given elsewhere in this Report.

TABLE IX. gives the details of production of the metalliferous mines of the Province for the years 1911, 1912, 1913, and 1914, and the districts in which such productions were made, showing the tonnage of ore mined in each district, with its metallic contents and its market value.

The total tonnage of ore mined in the Province during the year 1914 was 2,175,971 tons, having a gross value of \$45,225,061 and with the placer gold a total value of \$45,720,061.

The following table shows the percentages of such tonnage derived from the various districts of the Province:—

Boundary District.....	50.25 per cent. of tonnage.
Trail Creek Mining Division.....	13.65 " "
Cassiar District.....	12.10 " "
Coast District.....	11.75 " "
Slocan District.....	4.73 " "
Ainsworth Mining Division.....	3.05 " "
Nelson Mining Division.....	2.72 " "
East Kootenay District.....	1.65 " "
Other Divisions.....	0.1 " "
	100.00

In reports previous to 1910 there has been included in this table the "Miscellaneous products," and in 1910 these were shown distributed to the various districts: the great increase of these products in the past few years has rendered it advisable that this table be reserved exclusively for metalliferous products, and so a new table (No. V.) was introduced in 1911, giving in some detail, the output of these miscellaneous products.

In making comparisons of this table with similar tables in previous reports, the fact that "Miscellaneous" has been removed will have to be borne in mind.

TABLE X. presents in graphic form the facts shown in figures in the tables, and demonstrates to the eye the rapid growth of lode-mining in the Province, and also the fluctuations to which it has been subject.

It will be seen that, although coal-mining has been a constantly increasing industry during this whole period of twenty-three years, lode-mining did not begin practically, until 1894, since when it has risen with remarkable rapidity, though not without interruption, until it reached, in 1906, the \$17,500,000 line. The total mineral production in 1910 reached the \$26,000,000 line, and in 1912 it reached the \$32,000,000 line, while this year it again drops to near the \$26,000,000 line.

TABLE XI. compares graphically the output of certain mineral products in British Columbia with that of the combined output of similar products in all the other Provinces of the Dominion, and shows that in 1913 British Columbia produced, in the minerals shown, an amount equal to over 45.9 per cent. of all the other Canadian Provinces combined.

GOLD.

The production of placer gold during the past year was worth about \$565,000 as nearly as can be ascertained: great difficulty is found in obtaining reliable figures, since the work is, in many cases, carried out by individuals or unorganized groups of men who keep no books, frequently paying wages, or for supplies, in gold dust, which, being readily transported, is scattered, and the tax imposed thereon by law is thus evaded.

This year's output shows an increase, as compared with 1913, of \$55,000, chiefly due to a better gravel-washing season than usual in the Atlin District.

Considerable work in connection with placer mining was done in the Similkameen District, although the actual production was small.

The production of placer gold is nearly all from the Atlin and Cariboo Districts: over 93 per cent. of the total coming from these two sections.

The value of the gold produced from lode mining in the Province during the year 1914 was \$5,109,004, a decrease, as compared with the previous year, of \$518,186, or about 9.2 per cent. This reduction in the production of lode gold is due to large decreases in the output of the Boundary and Nelson Districts and smaller decreases in the Atlin, Lillooet, and Coast Districts. Against this there is a considerable increase in the Skeena Division of the Cassiar District, due to the commencement of smelting operations by the Granby Company at Anyox, and a slight increase in the yearly output of the Trail Creek Division.

The falling off of the gold production in the Boundary District is entirely attributable to the closing of the smelters in August, on account of the European war. This same cause is largely responsible for the reduction in output of the Nelson Mining Division.

The only large stamp mill in operation in the Province is at the *Nickel Plate* mine at Hedley, in the Osoyoos Mining Division, which, this past year, milled some 78,494 tons of ore having a value of about \$800,000. There are smaller stamp mills operating at the *Poorman*, *Queen*, *Mother Lode*, and other mines in the Nelson Division; and in addition, there are stamp-mills at the *Jewel* mine, Greenwood; *Carvation* mine, Lillooet; and *Engineer* mine, Atlin, which operated during the year.

The following are the values of the gold product of the three most important camps: Rossland, \$2,861,201; Boundary, \$1,775,948; and Nelson, \$316,210. About 74 per cent. of the gold production of the Province is obtained from the smelting of copper-bearing ores, the remainder mainly from stamp milling.

SILVER.

The total amount of silver produced in the Province during the year 1914 was 3,602,180 oz., valued at \$1,876,736, an increase in amount, as compared with the previous year, of 136,324 oz.; but, owing to the decrease in the market value of this metal, the value of the silver-output in 1914 was \$91,870 less than in 1913. This is the greatest production of this metal since 1902.

The Sloean District (including the Ainsworth, Sloean, Sloean City, and Trout Lake Mining Divisions) produced about 59 per cent. of the total Provincial output of silver this year, and the Fort Steele Mining Division about 13.7 per cent., all from argenteiferous galena. The remainder is chiefly derived from the smelting of copper ores carrying silver.

The Hazelton District shows a big increase over the output of the previous year, the figures being respectively 135,265 and 46,298 oz., most of this is credited to the *Silver Standard* mine.

The following table shows the silver production from the different Mining Divisions:

Sloean and Sloean City M. D.	produced 1,775,975 oz. silver	49.35 per cent. of total.
Fort Steele	" 492,080 "	13.65 "
Boundary	" 347,984 "	9.64 "
Ainsworth	" 329,586 "	9.15 "
Nelson	" 159,268 "	4.18 "
Trail Creek	" 136,185 "	3.78 "
Omineca	" 135,265 "	3.75 "
Skeena	" 131,509 "	3.64 "
Coast	" 91,574 "	2.54 "
Trout Lake	" 41,295 "	1.14 "
All others	" 462 "	0.01 "
	3,602,180	100.00

LEAD.

The lead production of the Province for the year 1914 was 50,625,048 lb. of lead having a market value of \$1,771,877, showing, as compared with the previous year, a decrease in amount of 4,739,629 lb. of lead, or 8.55 per cent., and a decrease in value of \$403,954, or 18.5 per cent.

This amount of lead represents the amount of metallic lead actually received and paid for by the smelters.

Instead of taking account of "loss in slags," we have followed, as has been our habit, the practice of the smelters of deducting 10 per cent. from the market price of the metal, in calculating the value.

The average market price of this metal for the year 1914 was a little lower than for the previous year.

The lead production is this year, as usual, derived chiefly from the Slocan and Fort Steele Mining Divisions, as is shown in the following table:—

Fort Steele M.D. produced	24,863,105 lb. lead	= 49.13 per cent. of total.
Slocan	15,233,910 "	30.10 "
Ainsworth	8,069,525 "	15.92 "
Nelson	2,004,436 "	3.95 "
Omineca	323,482 "	0.64 "
All others	130,590 "	0.26 "
	50,625,048	100.00

COPPER.

The amount of copper produced in the Province in 1914, smelted during the year, was 45,009,699 lb. fine copper, valued at the average New York market price for copper at \$6,121,319. These figures represent the amount of copper actually recovered, as nearly as it is possible to ascertain: the amount of copper really in the ores mined would be approximately 25 per cent. greater.

As compared with the year 1913, these figures show a decreased production in amount of 1,450,606 lb., or about 3.13 per cent. This decrease is accounted for by the war conditions.

It is an agreeable surprise to find that under these conditions, the quantity of copper produced in 1914, as compared with 1913, shows only the comparatively small decrease of 1,450,606 lb. The explanation lies in the fact that the operation of the Granby Consolidated Company's *Hidden Creek* mine and its smelting-works at Anyox, in Skeena Mining Division, resulted in the production of copper to an extent that largely offset the decrease that resulted from the suspension of production from Boundary District mines.

The following table shows the production of the various districts for the years 1911, 1912, 1913, and 1914:—

	1911.	1912.	1913.	1914.	
Boundary District	22,327,359 lb.	33,372,199 lb.	28,621,973 lb.	16,428,959 lb.	= 36.52 %
Rossland	3,429,702 "	2,539,900 "	2,538,661 "	3,779,830 "	8.40 "
Coast & Cassiar	11,017,872 "	15,518,181 "	14,416,967 "	24,199,621 "	53.74 "
Yale-Kamloops	152,723 "	..... "	37,578 "	14,525 "	0.03 "
Nelson	..... "	26,257 "	815,126 "	586,764 "	1.31 "
	36,927,656	51,456,537	46,460,305	45,009,699	100.00

The average assays of the copper ores of the various camps, based upon the copper recovered were as follows:—

Boundary, 0.753 per cent.; Coast, 2.545 per cent.; and Rossland, 0.636 per cent.

ZINC.

The total quantity of zinc produced in 1914 was 7,866,467 lb., valued at \$346,125 the average New York price, less 15 per cent., being taken as the basis of valuation.

This shows an increase, as compared with the year 1913, of 1,107,699 lb., or 16.36 per cent.

The lowering of the United States tariff on zinc concentrates and ore entering that country served to stimulate zinc production, and during the latter months of 1914 the high price prevailing and the great demand for zinc for war purposes accelerated the shipments of concentrates.

The experiments and plant for the electric smelting of zinc lead ores which had been in operation at Nelson for about a year under G. C. Mackenzie, of the Mines Branch of the Department of Mines, Ottawa, were finally abandoned during last summer. W. R. Ingalls, who acted as consulting zinc metallurgist to that Department, writes:

"The experimental work at Nelson, B.C., was discontinued, it being regarded as conclusively settled that an electric zinc-smelting furnace so small as one ton of daily capacity is a commercial impossibility, while the satisfactory development of a larger furnace was regarded as too doubtful to be undertaken at Nelson."

COAL.

The gross production of coal in 1914 was 2,166,428 long tons, of which 355,161 tons was made into coke, leaving the net production at 1,810,967 tons. These figures show a decrease, as compared with 1913, of 401,332 tons gross and of 326,516 tons net. The quantity of coke made was 231,577 tons, which is a decrease of about 51,468 tons as compared with 1913. For purposes of comparison the following table is shown:

	1914.	1913.	1912.	1911.	1910.	1909.
Coal, gross tons, 2,240 lb.	2,166,428	2,570,760	3,025,709	2,297,748	3,139,235	2,400,600
Less made into coke "	355,161	433,277	396,965	101,656	339,189	394,124
Coal, net "	1,810,967	2,137,483	2,628,804	2,196,092	2,800,046	2,006,476
Coke made "	231,577	286,045	261,333	66,005	218,029	258,763

These figures indicate a serious decrease, which is, however, only temporary, being mainly attributable to the European war.

In the interior of the Province the war brought about at least a partial closing down of the metalliferous mines and smelters, and thus diminishing the amount of railway transportation, all of which constituted the chief market for the coal of this district.

In the Vancouver Island District the output in 1914 was greater than it was in 1913, when the labour troubles interfered with the production, but it is still much below the normal output of these collieries.

Production was not interfered with to any appreciable extent, if at all, by labour troubles in 1914. In fact, it was claimed that much more coal could have been produced had there been demand for it. There is no doubt that all there was a market for was produced. Unfortunately, though, less coal than usual was required from Vancouver Island mines for bunkering purposes, the state of war having considerably lessened the demand. The activity

of German cruisers that sought to destroy the shipping of the allied powers at war with Germany, for a period of four or five months interfered with the steamship trade to which Vancouver Island collieries ordinarily look for a considerable portion of their market. The destruction in December of those of the enemy's war-ships that had disturbed the mercantile service removed this menace to shipping. Again, the competition of fuel-oil continued to be felt, though not in a larger degree than in 1913.

Summarizing the Provincial production of coal, the following table shows the output:—

	1912.	1913.	1914.
Vancouver Island mines tons, 2,240 lb.	1,538,240	973,493	1,072,314
Nicola and Smilkameen mines "	206,257	265,542	138,931
Crowsnest mines "	1,261,212	1,331,725	955,183
Total quantity of coal mined "	3,025,709	2,570,760	2,166,428
Less made into coke "	396,905	433,277	355,461
Net quantity of coal produced "	2,628,804	2,137,483	1,810,967

COLLIERIES OF COAST DISTRICT.

The Coast collieries mined 1,211,245 tons of coal in 1914, of which 18,635 tons was added to stock, making 1,192,610 tons distributed from these collieries in 1914. This amount was distributed thus:

Sold as coal in Canada	724,066 tons.
" United States	213,324 "
" other countries	
Total sold as coal	937,390 tons.
Used under companies' boilers, etc.	107,991 "
Used in making coke	
Lost in washing	147,229 "
	1,192,610 "
Plus coal added to stock	18,635 "
Gross output	1,211,245 "

The total coal sales of the Coast collieries for the year show, as compared with the sales of the previous year, a decrease of 41,700 tons, equivalent to 4.5 per cent.

The consumption of coal in that part of British Columbia served by the Vancouver Island collieries shows this year a decrease of 36,011 tons, or about 5.64 per cent. from the preceding year: the amount exported to the United States was 114,392 tons greater, and no coal was exported to other countries.

Only one company in the Coast District—the Canadian Collieries, Limited, has ever made coke, and this year the ovens have not been in operation, although the company sold 2,314 tons of coke from stock, exhausting the stock.

The coke sold was entirely for consumption in British Columbia, no export sales having been made.

On Vancouver Island, four companies produced coal this year—the Canadian Collieries, Limited, the Western Fuel Company, the Pacific Coast Coal Mines, and the Vancouver-Nanaimo Coal Company: the majority of these companies each operate two, or more, collieries. The combined output of the Island collieries was 1,072,314 tons.



A. C. Sargent & Sons

Valley of Lacognon River—looking North from Fort Wain—Ferdinand Mering Division, British Columbia

In the Nicola and Princeton valleys of the Coast District, the Middlesboro Colliery Company produced 60,705 tons of coal; the Princeton Colliery, 19,535 tons; the Inland Coal and Coke Syndicate (formerly Coal Hill Syndicate), 53,281 tons; the Coalmont Colliery, 4,850 tons; and the Pacific Coast Colliery Company, 560 tons.

The total output of this portion of the district was 138,931 tons.

EAST KOOTENAY COALFIELD.

There were three companies operating in this district—the Crow's Nest Pass Coal Company, operating two separate collieries, the combined output of which was 778,403 tons; the Corbin Coke and Coal Company, which made an output of 74,312 tons; and the Hosmer Mines, Limited, which produced 192,468 tons of coal, making a gross output for the district for 1914 of 955,183 tons of coal.

Of the coal mined, 3,205 tons was added to stock, making the amount of coal distributed from the collieries 951,978 tons.

Of this gross tonnage, 355,461 tons was used in the manufacture of coke, of which there was produced 231,577 tons (2,240 lb.).

The coke sold this year amounted to 232,166 tons, and 3 tons was used under the companies' boilers, making a total of 232,169 tons, to which must be added 2,498 tons added to stock, making the coke production for this year 234,577 tons, as compared with 286,045 tons in 1913.

The following table shows the distribution made of the coal of this district:

Sold as coal in Canada.....	410,094 tons.
" United States.....	389,383 "
Total sold as coal.....	529,477 tons.
Used by the companies in making coke.....	355,461 "
Used by the companies under boilers, etc.....	67,040 "
	951,978 "
Plus coal added to stock.....	3,205 "
Gross output.....	955,183 "

The greater part of the gross Provincial production is still being mined by three companies—the Crow's Nest Pass Coal Company of East Kootenay, the Canadian Collieries and the Western Fuel Company of Vancouver Island, which mined, collectively, 71.4 per cent. of the gross output, their respective production representing 36 per cent., 24.1 per cent., and 11.3 per cent. of such total.

Of the other collieries:—In the Coast District, on Vancouver Island, the Pacific Coast Coal Mines, Limited, produced 130,645 tons, and the Vancouver Nanaimo Coal Company 107,158 tons; and in the Nicola Valley section of the district, the Middlesboro Colliery Company mined 60,705 tons, the Inland Coal and Coke Company 53,281 tons, the Princeton Coal and Land Company 19,535 tons, while the Coalmont Colliery produced some 4,850 tons of coal.

In the East Kootenay District, in addition to the Crow's Nest Pass Coal Company, which produced 778,403 tons, the Hosmer Mines, Limited, produced 192,468 tons, and the Corbin Coal and Coke Company 74,312 tons.

In addition to those companies actually shipping, several other companies have been installing plant and have approached the shipping agents, mention of which will be made elsewhere in this report.

The collieries of the Coast District, including the Nicola Valley field, are to be credited this year with about 56 per cent. of the total coal output.

The gross output of the collieries of the Province for the past year was, as already stated, 2,166,428 tons, of which some 21,840 tons of coal was added to stock, making the gross amount of coal distributed 2,144,588 tons.

Of this gross amount, there was sold for consumption in Canada, 864,160 tons; sold for consumption in the United States, 602,707 tons; making the total coal sales for the year 1,466,867 tons of 2,240 lb.

In addition to the coal sold, there was used in the manufacture of coke 355,461 tons, all in the East Kootenay field; and used under companies' boilers, etc., 175,031 tons; while 147,229 tons was lost in washing and screening.

There was no coke made this year in the Coast District, although some 2,314 tons was sold from stock, the total coke production having been made by the Crow's Nest Pass Coal Company, and Hosmer Mines, Limited, in the East Kootenay field, where, from 355,461 tons of coal, 234,577 tons of coke was manufactured, of which 3 tons was used under the companies' boilers.

The coke sales of the Province for the past year amounted to 234,480 tons, and in addition 94 tons was added to stock.

The following table indicates the markets in which the coal and coke output of the Province was sold:—

COAL.		Coast District.	Crowsnest Pass District.	Total for Province.
Sold for consumption in Canada tons,	2,240 lb.	724,066	140,094	864,160
" export to United States "	"	213,324	389,383	602,707
" export to other countries "	"			
Total coal sales		937,390	529,477	1,466,867
COKE.				
Sold for consumption in Canada tons,	2,240 lb.	2,314	177,853	180,167
" export to United States "	"		54,313	54,313
" export to other countries "	"			
Total coke sales		2,314	232,166	234,480

OTHER MINERALS.

The situation in regard to iron ore remains unchanged, no material advancement having been made in the utilization of the numerous deposits throughout the Province. At present there is no market in the Province for iron ore, and, as a consequence, very little development work has been done. There are, undoubtedly, a number of iron-ore deposits in different districts which are of considerable size, and which are, as a rule, very free from injurious elements. In considering the possibility of the successful establishment of an iron and steel industry, other factors besides availability of ore are important—namely, a sufficient market for the products, a supply of fuel near by at a price comparable with what it is in the East, and a steady supply of suitable labour.

So far as is at present known, there is on the Coast no developed host (or hematite or other ore of iron, such as would be desirable to mix with the magnetite) for blast furnace smelting.

A deposit of hematite is being developed on the Zymoetz river, a description of which is given elsewhere in this Report.

As to the electro-thermic smelting of such iron ores into commercial pig iron, the process has not as yet been sufficiently perfected, although it is looked upon as one of the possibilities of the future.

Considerable interest has been manifested during the past year in regard to iron deposits generally, and there have been many rumours of intended installations of iron smelting plants, but nothing at all definite has yet become public.

No production of platinum in 1914 has been reported, and it is not likely that the Tulameen output from placer mining was more than a few ounces.

Drilling for oil was continued in the Fraser valley, and also in the neighbourhood of Otard bay, Graham island, but although the results are said to be encouraging, no appreciable flowage of oil is yet reported.

A small amount of development work was carried out on the mica claims in the vicinity of Tete Jaune Cache, but no output is yet recorded. Now that the Grand Trunk Pacific Railway has been built within a few miles of these claims, it is pretty well assured that they will be seriously investigated this coming summer.

It is of interest to note the fact that the mineral molybdenite has been discovered, in what appears to be commercial quantities, at the head of Lost creek, some fifteen miles from the town of Salmo, in the Nelson Mining Division; two carloads of the mineral has been mined and taken to Salmo for shipment. The deposit would appear to be of considerable size, but, judging from the samples sent to this Department by the owners, the material will require to be concentrated to bring it up to the market requirements of about 85 per cent. molybdenite.

BUILDING MATERIALS.

The production of building materials during 1914 was less than in the year 1913, due no doubt to the financial depression and the war, which have, to some extent, retarded construction work, especially in the Coast cities.

The decrease in output was general with each of the different kinds of building material, except in the case of riprap. Nearly \$500,000 worth of this material was used in the construction of the breakwater and piers at Victoria, and therefore this column in the table shows a large increase over that of the previous year.

The output of pottery and tile was also nearly equal to that of the previous year. The heaviest decreases were in red brick and cement.

For the past year, although the statistical returns are not so complete, the total production of about \$2,852,917 is accounted for, the details of which are given in Table A, on page 9. Approximately 85 per cent. of the output comes from the Coast District, and the larger part of this finds its market in the Coast cities.

Excellent building-stone of various sorts is found in abundance in almost every part of the Province, but the fact of its widespread distribution has, however, been somewhat against the establishment of large quarrying industries, as a sufficient local supply could always be obtained, and, except within reach of the larger cities, few regularly equipped quarries have been opened.

On the Coast, chiefly between Vancouver Island and the Mainland, there are several well-equipped quarries taking out granite, sandstone, and andesite, all of excellent quality. These quarries supply the stone building material of the Coast cities, and also export to the United States.

A detailed description of the more important quarries was given in the Report of this Bureau for 1904.

Marble. The marble-quarry in the Ainsworth Mining Division is still being developed, but it is not known that any appreciable output was made. Two new marble-quarries were opened up on the southern end of Texada island, but it is too soon as yet to expect anything more than sample shipments. Sample slabs from one of those quarries sent to the Provincial Museum show a marble very pleasing to the eye and of excellent quality, hard, and taking a good polish. The other quarry is known to have sent at least one scow-load of large blocks to Vancouver—presumably to be slabbed—but no information is as yet available as to the results obtained.

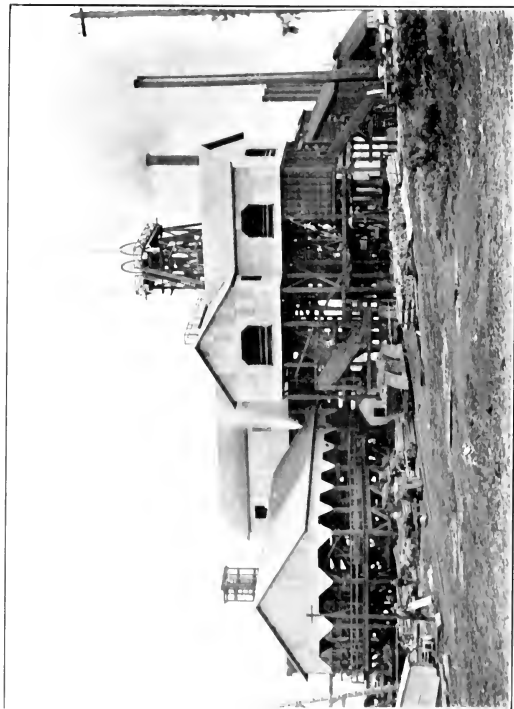
Red Brick. The production of red brick during the past year was about 17,000 M., amounting in value to \$163,300. The price of common brick ranges from \$8 to \$11 a thousand, according to quality and demand. A considerable quantity of brick is still imported into Vancouver, but, as the local plants are now well equipped with modern appliances, they should be able to overcome outside competition.

Firebrick. The only company producing firebrick in the Province is the Clayburn Company, Limited, with a plant at Clayburn, where the beds of clay are of the age of the coal-measures. This company made approximately 1,600 M. firebrick, worth about \$43,000, and 1,100 M. front or face brick, worth over \$30,000. Besides this the company made a large number of common brick, paving-brick, tiles, drain-pipes, etc.

Pottery Drain-pipe, and Tile. The plant of the British Columbia Pottery Company at Victoria West, which manufactures drain and sewer pipe, chimney-tiles, etc., was rebuilt after having been burned down in 1913, and had nearly a full year's output. The Port Haney Brick Company, besides manufacturing common brick, also make drain-pipe, partition block, etc.

Lime. The manufacture of lime is conducted in a small way at a large number of points in the Province, but only on the Coast has any attempt been made at more extensive operations. In the neighbourhood of Victoria, on Esquimalt harbour three kilns are in operation, and there are kilns on Saanich Arm. On Texada Island in addition to the old plant at Marble bay—a new and extensive plant has been erected at Blubber bay. The limestone being used is of exceptional purity, but in some instances the lime-stone beds are cut by igneous dykes which have to be rejected, and this somewhat increases the costs of quarrying.

The Consolidated Mining and Smelting Company quarried about 52,000 tons of limestone from the Fife quarries for use as flux in the furnaces at the Trail smelter.



Western Fuel Co.'s. Pit-head—Annamoos, British Columbia.

Two companies manufactured cement in the Province during the past year. The Vancouver Portland Cement Company, with works at Tod inlet, is said to have produced over \$550,000 worth of cement. The Associated Cement Company, with works at Kimberton, made a production valued at about \$300,000. The cement plant started near Princeton has ceased to operate.

The returns for crushed rock and gravel indicate a falling off in the demand for this material. Some of the plants which have been in operation for the past two or three years ceased operations, and others made a smaller output than in the previous year.

Concrete construction has become so extensive on the Coast that a number of plants are well fitted up with crushing and screening machinery to make the various products required.

Near Vancouver and Victoria a number of companies supply washed sand and gravel, properly screened to size. Some of these companies use a system of mining the gravel by hydraulic streams and carrying the product to the screens by the water used. The value of the sand and gravel produced for use in these two cities amounted during the past year to over \$300,000.

METALLIFEROUS MINES SHIPPING IN 1914.

CASSIAR.

ATLIS MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Engineer.	Windy Arm.	J. Alexander	Careross	Gold.

SKEENA.

SKEENA MINING DIVISION.

Grandy Group	Anox	Grandy Cons. M. S. & P. Co.	Anox	Copper, gold.
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QUEEN CHARLOTTE MINING DIVISION.

Early Bird Tasit Mine	Moresby island . . . Tasit harbour	J. McLellan Tasit Mining Co	Queen Charlotte " "	Gold. Gold, copper.
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OMINECA MINING DIVISION.

American Boy Colorado Silver Cup Empire Group Silver Standard	0-Mile mountain Hunter basin 3-Mile mountain Hudson Bay mountain Glen mountain	Harris Mines, Ltd. Chester Thomas Silver Cup Mines, Ltd. Simpson Bros. Silver Standard Mining Co.	Hazelton Telkwa Hazelton Sniffhens New Hazelton	Gold, silver, lead. Silver, copper. Silver, lead. " " Gold, silver, lead.
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EAST KOOTENAY.

FORT STEELE MINING DIVISION.

St. Eugene Sullivan	Moxye Kimberley	Consolidated M. & S. Co. " " " "	Marysville. " "	Silver, lead. " "
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WEST KOOTENAY.

AINSWORTH MINING DIVISION.

Bluebell	Riondel, Kootenay lake	New Canadian Metal Co.	Riondel	Silver, lead.
Caledonia	Whitewater	" " " "	" "	" "
Charleston	Whitewater	" " " "	" "	" "
Cork Province	South Fork, Kaslo creek	W. E. Zwicky	Kaslo	" "
Early Bird	Ainsworth	" " " "	" "	" "
Highland	"	Consolidated M. & S. Co.	Ainsworth	" "
Maestro-Banker	"	" " " "	" "	" "
No. 1	"	" " " "	" "	" "
Panama	Bear lake	H. Giegereich	Kaslo	Silver.
Revenue	Kaslo creek	Lachlan MacLean	" "	Silver, lead.
Silver Hoard	Ainsworth	Silver Hoard Mines, Ltd.	Ainsworth	" "
U.S.	Jackson basin	W. B. Smith	" "	Zinc.
Utica	Paddy mountain	Utica Mines, Ltd.	Kaslo	Silver, lead, zinc.
Whitewater	Whitewater.	J. L. Retalick & Co	" "	Gold, silver, lead, zinc.

WEST KOOTENAY. *Continued.*

SLOCAN MINING DIVISION.

Mine or Group	Locality	Owner or Agent	Min.	Output, 1906
Antone				Silver, lead
Buck Trail				" "
Cindarella	Three Forks	G. K. Decker	Three Forks	" "
Colonial	Sandton	A. D. Cooper	Sandton	" "
Evening & Dawn	" "	G. F. G. Co.	Sandton	" "
Hartney	New Denver	A. H. Blinn	New Denver	Silver, lead
Herritt	Silverton	Silverton Mines Ltd.	Silverton	" "
Rainbow	Sandton	Monte Carlo Ltd.	Sandton	Silver, lead
Levee	Three Forks	Am. Consol. Ltd.	Three Forks	" "
Lucky Thought	Silverton	Cons. Mining Co., Ltd.	Levee	" "
Norfolk	Cady creek	Rea & White	Sandton	" "
Randlet Caribou	McGowan	Randlet Caribou Mines Ltd.	Three Forks	Silver, lead
Richmond Park	Sandton	Cons. Mining, Sandton, Ltd.	New Denver	Silver, lead
Ruby		The Ruby Mines Ltd.	Ruby	" "
Silver Star		Silver Star Mines Ltd.	Sandton	" "
Standard	Silverton	Standard Silver Lead Mines Ltd.	Silverton	Silver, lead, zinc
Surprise	Sandton	J. P. MacLellan	Sandton	" "
Van-Roy	Silverton	Van-Roy Mining Co., Ltd.	Rossland	Silver, lead, zinc
Wonderful	Sandton	Wonderful Group Mines Ltd.	Sandton	Silver, lead

SLOCAN CITY MINING DIVISION.

Black Prince	Lemon creek			Silver, lead
Eastmont	Tenmile creek	E. B. Silver Mining Co.	Silver	Gold, silver, lead
Eastprize	" "	S. S. Fowler	Rossland	" "
Ottawa	New Denver	Consolidated M. & S. Co.	Trail	Silver

MILSON MINING DIVISION.

Bornett				Gold, silver
California	Teed mountain	W. Moore	Newry	" "
Emerald	Salma	Born Mountain, Ltd.	Sandton	Silver, lead
H. B.	Deer creek	H. B. Mining Co.	" "	Silver, lead, zinc
Hope	South Fork, Salma river	Wm. A. Elliot	" "	Silver, lead
Molly Gibson	Kokanee creek	Consolidated M. & S. Co.	Newry	" "
Mythlenite Group	Levee creek	Bill Ross & Partner	Sandton	Mercury and gold, silver
Methodist	Sheep creek	Methodist Sheep Creek Mine Co.	Silver, zinc	" "
Perrier	Cady creek	C. Cassidy	Newry	" "
Porto Rico	East Fork	W. E. DeWitt	" "	Gold
Queen	Sheep creek	Queen Mining, Prospect, Ltd.	Sheep Creek	Gold, silver
Queen Victoria	Bowdy	E. C. Copper Co.	Queen's Hill	Gold, silver, lead
Rivoli				Silver, lead
Season 4 Relief	Erse	A. B. Washburn	Newry	Gold, silver
Silver King	Teed mountain	Consolidated M. & S. Co.	" "	Gold, silver, lead
Summit Group	Sheep creek	W. E. DeWitt	Sheep Creek	Gold, silver, lead
Tatt				Gold
Venus	Monting mountain	A. H. Grier	Newry	" "
Yankee Girl	Yan	Hugh S. Cooper, Ltd.	Newry	Gold, silver
Zimton	Deer creek	P. F. Hartson	Sandton	Silver, lead

TRAIL, CREEK MINING DIVISION.

Blue Bird	Rossland	Blue Bird Mining Co.	Rossland	Gold, silver, zinc
Centre Star Group	" "	Consolidated M. & S. Co.	" "	Gold, silver, zinc
Le Roy	" "	Consolidated M. & S. Co.	" "	" "
Juste Group	" "	Le Roy No. 2, Ltd.	" "	" "
Phonix	" "	Phonix Gold Mine Co.	" "	" "

HOT LAKE MINING DIVISION.

Ajax Silver Cup	Hot Lake	Hot Lake Mines Ltd.	Hot Lake	Gold, silver
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REVELS-FORK MINING DIVISION.

Lansark	Revels Fork	L. D. E. Co.	Revels Fork	Silver
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BOUNDARY.

GRAND FORKS MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Ravslide Union	Phoenix Franklin camp	New Dominion Copper Co. Louis Johnson	Greenwood Grand Forks.	Gold, silver, copper. Gold, silver.

GREENWOOD MINING DIVISION.

Carmi	Carmi	W. H. Burke.	Carmi	Gold, silver.
Dynamo				Gold, silver, lead.
Granby	Phoenix	Granby M., S. & P. Co.	Grand Forks	Gold, silver, copper.
Imperial	Rook creek	E. L. Stovret	Rook Creek	" "
Jewel-Denoro	Greenwood	Jewel Denoro Mines, Ltd	Greenwood	Gold, silver.
Motherlobe	"	B. C. Copper Co., Ltd.	"	Gold, silver, copper.
Sally	Wallace mountain.	Alex. Robinson	"	Gold, silver, lead.
Standard	"	W. H. Rambo	Beaverdell	Silver, lead.

OSOYOOS MINING DIVISION.

Dividend Nickel Plate	Kruger mountain Hedley	Dividend-Lake View C. G. M. Co Hedley Gold Mining Co.	Spokane Hedley.	Gold, silver, copper. Gold.
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VERNON MINING DIVISION.

St. Paul	Monashee mountain.	Paul Rembler.	Kelowna	Gold.
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KAMLOOPS MINING DIVISION.

Iron Mask	Kamloops.	E. G. Wallinder.	Kamloops	Gold, silver, copper.
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LILLOOET MINING DIVISION.

Coronation	Cadwallader creek	Coronation Gold Mines, Ltd.	Victoria	Gold.
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COAST.

VANCOUVER MINING DIVISION.

Britannia.	Howe sound	Britannia Mining & Smelting Co.	Britannia Beach	Silver, copper.
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NANAIMO MINING DIVISION.

Copper Queen	Texada island	Jas. Raper.	Nananda	Gold, silver, copper.
Cornell	"	I. Little	"	Gold. " "
Gem	"	A. A. Logan	Vancouver	Gold.
Marble Bay	"	Tacoma Steel Co.	Tacoma	Gold, silver, copper.

CLAYOQUOT MINING DIVISION.

Kallapa Leora	Mearns island Elk river	Kallapa Mining Co., Ltd. W. W. Gibson.	Vancouver Victoria	Gold, silver, copper. Gold.
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Canada Consolidated Mining, Smelting, and Power Co., S. Smelter—Ansox, Observatory Inlet, British Columbia.

DEPARTMENT OF MINES.

VICTORIA, B.C.

HON. SIR RICHARD MCBRIDE,	-	-	-	<i>Minister of Mines.</i>
R. F. TOLMIE,	-	-	-	<i>Deputy Minister of Mines</i>
WM. FLEET ROBERTSON,	-	-	-	<i>Provincial Mineralogist and Assayer.</i>
D. E. WHITTAKER,	-	-	-	<i>Provincial Analyst and Assistant Assayer.</i>
JOHN D. GALLOWAY,	-	-	-	<i>Assistant Provincial Mineralogist.</i>
THOMAS GRAHAM,	-	-	-	<i>Chief Inspector of Mines, Victoria.</i>
HENRY DEVLIN,	-	-	-	<i>District " Nanaimo.</i>
JOHN NEWTON,	-	-	-	" "
GEO. O'BRIEN,	-	-	-	" <i>Fortne.</i>
THOMAS H. WILLIAMS	-	-	-	" "
ROBERT STRACHAN,	-	-	-	" <i>Merritt.</i>
JAMES MCGREGOR,	-	-	-	" <i>Nelson.</i>

GOLD COMMISSIONERS AND MINING RECORDERS.

Mining Divisions.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Atlin Mining Division.	Atlin	J. A. Fraser	W. G. Paxton	
Sub-office	Discovery			R. Webster.
"	Telegraph Creek			H. W. Dold.
"	Summit Station			Geoffrey Butler.
"	Wynnton			W. H. Simpson.
"	Haines (U.S.)		(Com. for taking	Roslan M. Odell.
"	Naldu		Advaluats)	J. F. Pilling.
Stikine Mining Division	Telegraph Creek	H. W. Dold	H. W. Dold	
Sub-office	Boundary	"	"	William Strong.
Liard Mining Division	Telegraph Creek	"	"	
Sub-office	Porter			Chas. H. Smith.
"	McDame Creek.			Amos Everson.
Skeena Mining Division.	Prince Rupert....	J. H. McMullin	J. H. McMullin	
Sub-office	Alice Arm			H. H. Carney.
"	Kitimat			Geo. L. Anderson.
"	Port Simpson			J. R. C. Deane.
"	Essington			A. Forsythe.
"	Stewart (Portland Canal)			John Conway.
"	Unik River			Bart E. Duly.
"	Anyox			F. A. McKinnon.
Portland Canal M.D.	Stewart	J. H. McMullin	John Conway.	
	(at Prince Rupert)			
Bella Coola Mining Div.	Prince Rupert....	J. H. McMullin	J. H. McMullin	
Sub-office	Bella Coola			Frank Broughton.
Queen Charlotte Min'g D.	Queen Charlotte	E. M. Sandilands	E. M. Sandilands	Petrie S. Jack.
Sub-office	Jedway			W. Prescott.
"	Masset			C. Harrison.
"	Lockeport			William Morgan.
Omineca Mining Division.	Hazelton	Stephen H. Hoskins	Jas. E. Kirby	
Sub-office	Fort Graham....			John Ross.
"	Fort St. James			Alex. C. Murray.
"	Manson Creek			W. B. Steele.
"	Copper City			P. R. Skinner.
"	Telkwa			R. Gale.
"	Terrace			C. E. Dohittle.
"	Fort St. John			F. W. Beaton.
"	Babine Portage			R. J. Cameron.
"	Fort Fraser			J. E. Henson.
"	Junction Finlay & Parsnip Rivers			Wm. Fox.
"	Pacific			F. H. McClellan.
"	Smithers			Walter Noel.

GOLD COMMISSIONERS AND MINING RECORDERS.—*Continued.*

Mining Divisions.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Peace River Mining Div.	Fort St. John		F. W. Beaton	
Sub-office	Hudson's Hope			Thomas A. Mansell.
"	Pouce Coupe			G. J. Duncan.
Cariboo Mining Division	Barkerville	C. W. Grain		
Sub-office	Quesnel			A. P. Halley.
"	Fort George			T. W. Herne.
"	Tete Jaune			Henry Taylor.
Quesnel Mining Division	150 Mile House	C. W. Grain	Arthur Sampson	
Sub-office	Quesnel	(at Barkerville)		George Milburn.
Clinton Mining Division	Clinton	E. C. Lunn		
Lillooet	Lillooet	Caspar Phair	Caspar Phair	
Kamloops Mining Division	Kamloops	E. T. W. Pearse	E. Fisher	
Ashcroft	Ashcroft	" (at Kamloops)	H. P. Christie	
Nicola	Nicola	" "	W. N. Rolfe	
Yale	Yale	" "	L. A. Dodd	
Sub-Office	Hope	" "		George Blue.
Similkameen	Princeton	Hugh Hunter	Hugh Hunter	
Sub-office	Hedley			F. M. Gillespie.
Vernon Mining Division	Vernon	L. Norris	H. F. Wilmot	
Greenwood Mining Div.	Greenwood	W. R. Dewdney		
Sub-office	Vernon			H. F. Wilmot.
"	Rock Creek			H. Nicholson.
"	Beaverdell			E. F. Ketchum.
Grand Forks Min. Div.	Grand Forks	S. R. Almond	S. R. Almond	
Osoyoos Mining Division	Fairview	J. R. Brown	R. D. Tweedie	
Sub-office	Olalla			R. W. Northey.
"	Hedley			F. M. Gillespie.
Golden Mining Division	Golden	H. C. Rayson	F. H. Bacon	
Windermere	Wilmer		Ronald Hewat	
Fort Steele Mining Div.	Cranbrook	N. S. A. Wallinger.	H. S. Clark	
Sub-office	Steele			Joseph Walsh.
"	Fernie			Geo. F. Stalker.
"	Moyie			John P. Farrell.
"	Marysville			Alfred Dryden.
Ainsworth Mining Div.	Kaslo	R. J. Stenson	A. McQueen	Wm. J. Green.
Sub-office	Howers			W. Simpson.
"	Trout Lake			A. N. Vars.
Slocan Mining Division	New Denver	R. J. Stenson (at	Angus McInnes	
Sub-office	Sandon	" Kaslo)		W. J. Parham.
Slocan City Mining Div.	Slocan		Howard Parker	
Trout Lake Mining Div.	Trout Lake	R. J. Stenson	A. N. Vars.	
Nelson Mining Division	Nelson	John Cartmel	S. S. Jarvis	
Sub-office	Creston			Guy Loewenberg.
"	Ymir			Geo. S. Coleman.
"	Sheep Creek			James Thompson.
"	Salmo			G. A. Kennington.
Arrow Lake Min. Division	Nakusp	John Cartmel	Walter Scott	
Sub-office	Vernon	(at Nelson)		H. F. Wilmot.
Revelstoke Mining Div.	Revelstoke	Robt. Gordon	R. S. Squarebriggs.	Newton R. Brown
Lardeau Mining Division	Beaton	" (at Revelstoke)	William A. Strutt	Mrs. A. H. Strutt.

GOLD COMMISSIONERS AND MINING RECORDERS. *Concluded.*

Mining Division.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Trail Creek Mining Div.	Rossland	H. R. Townsend	H. R. Townsend.	
Nanaimo Mining Division	Nanaimo	George Thomson	George Thomson.	
Sub-office	Ladysmith			John Stewart.
"	Alert Bay			H. F. Helmsing.
"	Vananda			David Jones.
"	Rock Bay			W. H. Lines.
Alberni Mining Division	Alberni	J. Kirkup		
Clayoquot "	Clayoquot	" (at Alberni)	W. T. Dawley	
Quatsino "	Quatsino	" "	O. A. Sherberg	
Victoria Mining Division	Victoria	Herbert Stanton.	Herbert Stanton.	
New Westminster Min. D.	New Westminster	F. C. Campbell	I. Wintemute	
Sub-office	Harrison Lake			L. A. Agaassiz.
"	Chilliwack			J. Pelly.
Vancouver Mining Div.	Vancouver	John Mahony	A. P. Grant	

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