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Victoria Times.

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VICTORIA, B. C., TUESDAY, DECEMBER 4, 1900.

Nanaimo Coal Mining Industry.

Account of a Visit Paid to the New Vancouver Coal Company's Properties at Nanaimo.

Conditions Under Which the Miners Work--Facts and Figures Regarding the Output.

Everything Possible Has Been Done For Men's Safety and Convenience.

(Special Staff Correspondence of the Times.)

Nanaimo, Nov. 23.—Nanaimo, the coal mining metropolis of the Pacific coast, was purchased from the Indians by the Hudson's Bay Company in the winter of 1852, and then a trading post and village was established there. The Hudson's Bay Company carried on operations until 1862, when the extensive tract of country which they had acquired from the crown was taken over by the New Vancouver Coal, Mining and Land Company, and since that year they have had control of the workings of the mines surrounding Nanaimo. The city now boasts of a population of nearly 7,000 people, and is surrounded with a good farming and stock country. The natural facilities of the country are such that the city is destined to be one of great importance as a manufacturing and industrial centre. The credit of Nanaimo's business men ranks high and there are few places in the country that are more prosperous. The city boasts of many handsome business structures and private residences, has a system of water works about to be taken over by the corporation, electric lighting and gas plants, and other things calculated to make it a most desirable place in which to reside.

In this city may be found one of the handsomest court houses in the province. The superstructure is of stone, taken from quarries a short distance from the city, while the interior is finished in native woods in such a way as to delight the eye of those who visit the commodious structure.

Nanaimo's prosperity is due to the New Vancouver Coal Company, as it is with the mines operated by this corporation that this article will be principally devoted. This company, under the efficient management of Mr. S. M. Robins, has always shown a disposition to deal fairly with the men who delve in the cavernous depths of the earth, and while strikes are occurring in other coal mines there are no labor troubles in Nanaimo. Mr. Robins, unlike most managers of corporations, approves of union labor and is always pleased to meet and confer with the men in his employ. Some years ago there was a strike threatened. Mr. Robins sent for a committee from the union to examine his books, and the committee was satisfied that he could not grant the increase asked for. The strike was averted and later on the men had their wages raised without making any further demand in this direction. Naturally a man of such broad ideas is popular with the men who work under him, and as a philanthropist his reputation is known throughout the Island. To any demand for charity Mr. Robins is the first to respond, and it is not infrequent that his generosity is taken advantage of.

The workings of the company comprise the Douglas mine, located near the heart of the city, and now known as No. 1 shaft; No. 5 mine, located on the banks of the Chase river, and the shafts on Newcastle and Protection Islands.

The Douglas seam of coal is an extensive one, and is traceable through all the properties owned by this company. Most of the coal produced in the mines at Nanaimo is shipped to San Francisco, and to supply the demand from this market new mines are being re-opened.

The company operating the mines is an English joint stock association, whose charter dates back to 1862, and during the thirty-eight years that they have carried on business the cash disbursed will foot up many millions of dollars, the money going for wages and for machinery. A trip through the works is an interesting one, and it would take many columns of newspaper space to give an adequate description of what they are like, and then the reader would only have a hazy idea of the extent of the workings.

AT NUMBER ONE

There Are Two Shafts—How the Mine Is Supplied With Fresh Air.

No. 1 pithead has not one, but two, shafts. They are circular in form and for safety huge wedge-shaped blocks are used in their construction. No. 2 shaft is sunk 200 feet to the north of No. 1, and its construction is air tight. Through an underground passage it communicates with the fan which conveys the foul air and gases from the mine. Above the air shaft is placed a pithead frame with pulley and an engine with drum and cable so arranged that by removing part of the pit cover this means of rescue would be available in a very few moments. A visit to the fan house is well worth taking. The ponderous engine is never still. The wheel which exhausts the air is thirty-six feet in diameter and twelve feet wide. It makes something like forty revolutions per minute, and this is what keeps the air always pure through something like twenty-five miles of underground. The way that the impure air is extracted from the mines is well worthy of attention. The impure current is pumped out at the rate of 150,000 feet per minute, and the pure air naturally comes in to take its place. The ventilating apparatus is known as the Guibal fan, and is one of the notable achievements of modern mechanical engineering skill. The fan was installed at great cost in the first instance, but the expense is far outweighed by the security it yields to those who work in the mines.

Surrounding No. 1 shaft is a forest of props of all sizes and lengths, and there are immense piles of logging to be used in timbering the mines, rolls of canvas, prepared with tar, for curtains, to turn the air into different channels. There are also many other things used in the daily workings of the mines, and as the empty cars are returned to the depths, after coming to the surface with their loads of dusky diamonds, these supplies are taken down as required.

A new pithead frame and screening tank was built at No. 1 shaft this year; this includes revolving topplers, shaking screens, travelling belts and creeper, capable of handling 1,000 tons of coal in eight hours. This pithead is built of heavy balks of native fir, and is constructed with a view to safety and durability. The winding frame and gear rises far above the level of the earth. The cages, which here arise and descend, are kept from swaying by four corner guides of wire rope, drawn taut, and up and down these ropes they travel. Over a mile of rope is used in the construction of the guides. As the cage comes from the pit it is received by the banksmen and the cars are quickly removed and empty cars as quickly fill the space from which they were taken. The full cars, after being weighed, are sent to the "topplers," where the coal is dumped into railway cars. In the descent of the coal to the railroad below it passes over a set of screens, and dross and nut coal are separated from the larger lumps, and it is thus that the coal is screened and made ready for shipment.

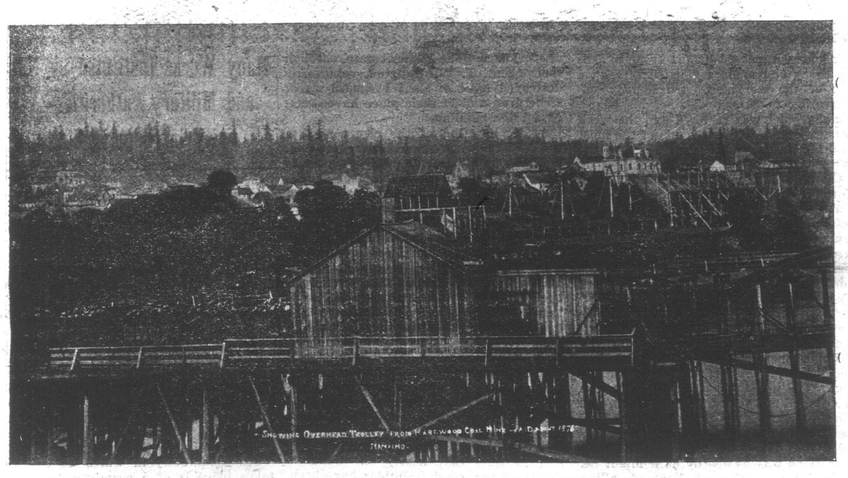
All this has been accomplished in far less time than it has taken to tell the story, and those who watch the operations for the first time find themselves growing dizzy with the rapidity of it all. When the cars come to the surface they are accompanied by a numbered tag placed there by the miner who loaded the car. At the weighman's office the tag is removed from the car and its number and the weight of coal contained in the car is noted on a sheet, which may be examined by the miners when they come off shift. The pit mouth and surface landing are guarded by gates, which are lifted and lowered by the cages, and in this way danger to the unwary is averted.

As mine cars are crippled they are brought to the top and sent to the machine shops for repairs. The number of these cars that are brought up in a damaged condition every day shows that tremendous stress is placed upon them. Nothing moves slowly in a big colliery, and the speed at which these cars move through devious ways and are whirled around on the pithead turntables has much to do with the shortness of their usefulness.

The depth of No. 1 shaft is 650 feet, and there is a sump for water lower down. The surplus water is forced to the surface in a four-inch stream by a Cameron pump with a twenty-eight inch cylinder and four foot stroke.

It needs a tremendous motive power to take care of all the apparatus and appliances needed at this shaft. The hoisting is done by a pair of centrifugal hoisting engines with 30-inch cylinder, 60-inch stroke, and 14-foot drum. The air is extracted by a Guibal 36 feet in diameter, 12 feet wide, and having a capacity of 120,000 cubic feet per minute. There is also a Murphy emergency fan in operation here. It is operated by two duplex compressing engines, one pair 14x22, and the other 12x14. An electric plant, with two Ball engines, of 150-horse power, operates two dynamos for generating power for underground haulage and lighting.

The steam for moving the wonderful machinery is generated by four cylindrical boilers, 3x30 feet, and 12 double flued Lancaster boilers, 5x30 feet. All engines and boilers are carefully housed. The ponderous winding engines rest so solidly and evenly on their foundations that although the strain on them is something remarkable, not the least vibration is felt in the power houses in which they are installed. The swift and noiseless movements of the engines, the gliding of the cables that can lift six tons at the rate of 30 feet per minute, has frequently been described as fascinating, and it certainly leaves an impression not soon effaced. The signals to hoist are given from the bottom of the shaft and are recorded by a gong striking in the engine room. The cables are of the best crucible wire steel, and are inspected daily.



OVERHEAD TROLLEY FROM HAREWOOD COAL MINE, A.D. 1876.

How Steamers Are Loaded---Operations Carried on in an Expeditious Manner.

SURFACE BUILDINGS.

Commodious Offices—Extensive Machine Shops Where Repirs Are Carried Out.

About the surface of No. 1 are clustered many buildings used by the New Vancouver Coal Company for various purposes. Across the street are commodious offices, where a competent force of trained clerical workers are constantly employed. In this department Mr. Mark Bate, jr., who acts as cashier, is practically at the head. Mr. S. M. Robins, the general superintendent, and Mr. Thomas Russell, the manager, have also offices in the building, and busy men though they are, they can always spare time to see anyone who may call on business of any importance. In this direction much of their valuable time is wasted, and they are frequently called upon to answer questions that one of the clerks could easily have disposed of.

A short distance away are the stables, and in these are kept the horses used for overground hauling, and these horses would attract attention anywhere, as they are most magnificent specimens of the equine species. The store department is also located in this vicinity, and here requisitions, properly O.K.'d, must be presented for articles required in the mines or other departments. The powder magazine is two miles from the city, on the line of railway leading to the No. 5 mine.

The greater part of the railway equipment is also looked after in this vicinity, when not in use. It consists of six locomotives, two of them forty tons in weight, and 240 coal cars of five-ton capacity. In addition to these there are a number of what railroad men term cabooses, and which are used in carrying employees of the mines at No. 5 shaft to and from their work, for a majority of the men employed there live within the city limits of Nanaimo.

Another adjunct of the company's workings which had best be described in connection with No. 1 shaft, as they are located in the vicinity, are the extensive shops, a splendid view of which appears on this page. But an exterior view falls far short of conveying the operations that are carried on in the different buildings. In the machine shops the equipment consists of turning lathes, boring, drilling, planing and screw-cutting machines, hydraulic presses, steam hammers and two diamond boring machines. Here a large force of men are constantly employed in rebuilding machinery, and in connection with these shops may be mentioned the carpenter shops and wood working plants. The employees of this department have a union separate from the Mine Laborers' Union, and like them, too, there is no difficulty in reference to wages, all being well paid and on the most friendly terms with the corporation employing them.

VISIT TO THE BUNKERS.

No Delay in Transferring the Coal From the Cars—Busy Scenes at Wharf.

No unimportant matter in connection with the working of the mines are the bunkers, from which over half a million tons of coal are sent out to foreign ports each year. The extent of these branches of the service must be closely examined to be appreciated. The bunkers in connection with the Esplanade, or No. 1 shaft, are the most extensive. At the main bunkers four double tracks lead with straiths to chutes, which are so arranged that they can be adjusted to any stage of the tide and thus convey the coal directly into the holds of the vessels. As the cars are hauled towards the chutes they pass over scales, where they are carefully weighed and gross and net weight are chalked on the car. There is no delay in this matter, for Mr. Cooper and his assistants are men who have thoroughly mastered their business. And then, if there is a collier awaiting cargo at the wharf another busy scene is witnessed. To the layman it is surprising to note the rapid manner in which these cars are cut off from the train one by one, quickly run upon the chutes and as quickly returned and placed upon a track with other empties, barely grazing, as it passes another load, which is being forwarded to fill the space at the vacant chute and go through the process of its predecessor. There are no waits between cars, and the stream of coal poured into the vessel is almost continuous. The water at all the wharves is of a sufficient depth to accommodate the largest vessel afloat, the dredger, Mudlark, having spent long months in putting this harbor, where the sea never grows rough, in perfect condition as to depth.

The mechanism for handling cars at the loading of vessels and from the time the car is cut off from its train loaded with coal until it is returned empty and another takes its place a space of thirty seconds does not elapse. A few years ago a test was made to see how quickly a vessel could be loaded. The experiment was made under the supervision of Mr. S. M. Robins, and the big whaleback collier Titania, carrying 6,000 tons of coal, arrived at the bunkers, took on cargo and departed within twelve hours. At first coal was poured into the hold at the rate of 750 tons per hour, but later on there was trimming to do, which accounted for a slackening in speed.

The principal bunkers at the loading wharves have a storage capacity of nearly 10,000 tons of coal. A second shipping wharf is also in successful operation, and at this two hatches can be loaded into at the same time. The ballast wharves are also a source of interest. It is there that ships coming from far away lands discharge their ballast, usually consisting of rock, gravel or earth. A large area of earth has been formed, comprising lava from Hawaii, sand from Japan, shingle from the beaches of Alaska and Siberia, and shiploads of earth from every country bordering on the Pacific ocean.

There are so many interesting things to write of in connection with the mines and their surroundings that many pages of newspaper space would necessarily be used in giving an adequate description of the place. So far the surroundings of only the main shaft have been touched upon.

DOWN A COAL MINE.

Levels, Slopes and Inclines Are All Substantially Timbered—Overhead Trolley System.

A visit to mines which extend for long distances far below the waters of the placid harbor is something that causes a shudder to pass over the visitor the first time he or she makes the descent of something like 650 feet riding in a cage that lacks many of the comforts of an elevator. The trip down is made in about thirty seconds. In making the descent a person can stand upright, but it is well to grasp a handrail which is placed just above the head. The cage stops at a spacious landing, ablaze with incandescent lights, but after leaving there the real hardships of a trip through the mines begins. An occasional bump on the head reminds the visitor that it is well to be cautious, and still those accustomed to the work hurry along without hesitancy. No. 1 level is three miles long, and is traversed by two electric motors on the overhead trolley system. No. 3 level is one mile long and operated by one electric locomotive, the same as above. The main slope is one and a quarter miles in length, and the diagonal slope 900 yards long. Both are operated by a main rope system of haulage, the engine for doing the hauling being situated at the shaft bottom. It is a coupled horizontal engine, with 16-inch cylinder, 36-inch stroke, with 5-foot beam. There are two Cameron pumps in operation here. There is a meeting place where the motors can pass. They haul the miners to and from the bottom of the shaft as they go and return from their work. No accident has ever occurred in connection with the running of motors. There is in course of erection now in the main slope of Esplanade shaft an endless rope haulage system, which will be worked by an engine at the head of the slope, with a carrying capacity of 1,000 tons of coal in eight hours.

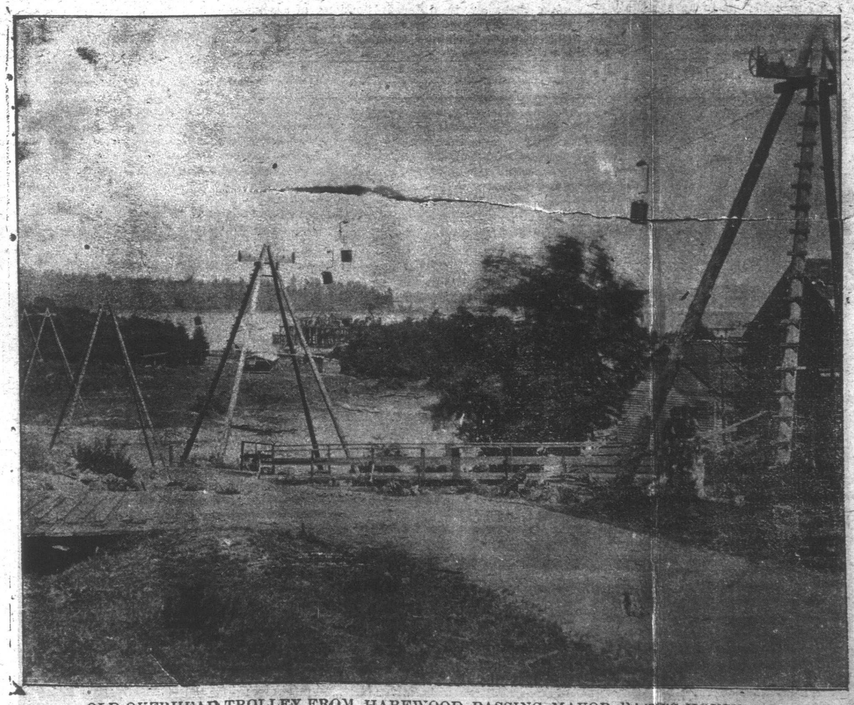
The following description of the working of the mine was written by Mr. J. P. Planta, of Nanaimo, and as it is accurate in every detail it is here reproduced by Mr. Planta's permission:

"The levels, inclines and slopes are from ten to twelve feet wide, with an average height of six and a half feet, are substantially timbered where needed, and are flanked by solid pillars of coal of as many as forty yards in width which form a grand support to the superincumbent mass, measuring at some points 600 and in others 1,800 feet to the surface. The inclines, levels and slopes are the great highways and with the airways driven alongside them form the lungs of the mine; similar wide pillars also bound the airways or counter levels, and behind the pillars roadways are driven, off which the miners open up stalls or rooms, out of which the coal is mined. In this pit the system of working is called the 'panel and stall.' The panels are limited areas of the seam which are sub-divided into pillars and stalls which are worked from twenty-five yards centres, and when the stall is worked to the end of its limit or panel varying from 200 to 350 yards in length, there remain in the mine solid coal pillars of fifteen yards in width on each side of the empty space (or worked-out stalls) and the result, generally, is that from three-fifths to two-thirds of the original coal seam is left standing in the mine awaiting the time when the extreme limitations of operations of the pit have been reached, and the order is given to draw the pillars, the execution of which commences at the farthest distance from the pit (to the 'rise' or 'dip' of the seam according to circumstances), the pillars are withdrawn, letting the roof come down behind, so that the life of a pit is a long and lingering one, and many years elapse before an extensive one is worked out. The 'levels' while they are graded systematically, follow the contour of the seam transversely, as we would grade a road round a hill side, and therefore the levels are separted by means of the inclines and slopes of the seam, which are driven in right lines, some inclines running up from 1,000 to 1,500 yards. The coal is brought from the stalls to the inclines in cars by mules wherever they can be worked, and otherwise by the pushers, who have also to keep the miners supplied with empty cars. The cars are let down the inclines by rope drums regulated by brakes, the full cars descending by their own gravity, the empties being drawn up at the same time, the track generally being double. At the foot of the inclines the cars are taken away by the motors, in return for empties brought in. I am now alluding to what is called down the mine the inside levels in distinction to the main slope, to be shortly noticed.

"The ventilation is upon what is known as the separate split system, and the mine is divided into districts entirely independent of each other. The fresh air is taken in from the Protection Island shaft, which is connected with the workings of No. 1 shaft, and if necessary all the miners could be hoisted up to the Island. As to fresh air, I have enjoyed good air all the time of my stay and have even felt cold and as if in a draught now and then, although the natural temperature of the mine is —according to depth—several degrees warmer than at the surface. After having noticed the self-acting inclines, heard the rumble, and seen the rush past of the mule trains, I enter several of the stalls, and here there is a—well, a pit (iful) smell, arising from powder smoke and from the fish oil used in the lamps, as well as from the oily stuff with which the car wheels are lubricated; there is also dust in the air—coal dust—and I become aware that I am gradually becoming what is known as 'blackened up.' The air is conducted into the 'stalls' (often called 'rooms') and a miner is as attached to his stall, as many a lady is to her drawing room. All the miner wants is a good face of coal and fair wages, and in this pit he appears to have both at command, and fair play as well. Pure air is continually passing from the brattice or partition which leads the air as near the face as it is possible and at the same time avoid the breakage of the partition (formed of inch rough lumber) by coal blown out by 'shots.'"

Overmen traverse the mine continually during the time that both shifts are at work. Shotlighters look after the placing and firing of shots, and firemen are employed to locate and test places

Mr. S. M. Robins, a Solicitous Superintendent, Who Looks After Miners' Welfare.



OLD OVERHEAD TROLLEY FROM HAREWOOD PASSING MAYOR BATE'S HOUSE.