

# A Trip Through an Alberta Coal Mine

*(reprinted in the Camrose Canadian in 1924  
originally printed in the Western Canada Coal Review)*

As a rule, the coal consumer has but the most vague idea of how the coal he burns is mined and prepared for use. Most people have a mental picture of a miner laying on his side on a narrow ledge, deep underground, laboriously using a pick to cut out coal, which is loaded on little trucks and pushed to the foot of the shaft. Even with coal dealers, many have not had an opportunity to watch the wheels go round in a modern mine, such as the Canadian Dinant Coal Company of Dinant, Alberta. (Dinant is just north of Camrose)

This company has been in operation for about five years, and produces a high-grade of domestic coal. Its plant is entirely new, and replaces the one destroyed by fire last winter. When erecting the new plant, in order to be nearer to the heavy deposits of coal, the private spur was extended some 1,700 yards to reach the site of the present plant. The mine now has excellent shipping facilities over the National Railways, and is located about eight miles north of Camrose, the hub of several lines of both railways

During the past three months work has been going forward on new buildings, coal tipple and head frame and the whole plant is now practically ship-shape and ready for the season's business. The buildings comprise shaker screens, coal bunkers divided into two bins, each holding about forty tons; boiler and engine room 30 by 40 feet, and three new bunkhouses for twenty-four men in addition to other housing accommodation. In addition to building activities above ground, a new shaft, 8 by 12 feet and lined with three inch planking and fitted with stairways at one end and hoisting compartment in which the coal is hoisted on to a cage and dumped automatically to the screens, has been put down.

In starting an imaginary tour of inspection through this property, we descend the shaft to the coal seam level, and enter the actual mine by entries which are roadways eight feet wide and six feet high, timbered with heavy booms, supported by heavy props at each end. For transporting coal to the shaft bottom, light steel rails are laid in these entries over which mine cars are hauled by pit ponies.

Running at right angles to the main entries are cross entries, which open up other coal areas. All roadways are carefully laid out, according to the best method of taking out the coal and in consideration of grades and seam formation. Leading off the mine entries are the working places of the miners, and as most of the coal is mined from these rooms, the system is called "room and pillar" mining.

## **Much Mine Timber Used**

In this method the miner drives a room (digs out a room of coal) about 14 feet wide to a depth of from one to two hundred feet, depending on conditions, and then draws back the pillar (removes the supporting area) of about 6 to 8 feet in width. The track is laid in as the miner proceeds, and is taken up again as the pillar is drawn. Progress is slow, as the seam is 6 feet thick, and it must be timbered as the miner takes out the coal. Poplar or tamarac props are used, about 6 inches thick, and these are left standing, as it is both costly and dangerous recovering timber, while the saving is not very great.

The mine cars, of about one-half ton capacity, are taken right in to the face or working place, and when loaded are collected on partings or sidings, where they are coupled and hauled to the bottom of the shaft, and the empties hauled in on the return trip.

Arriving at the foot of the shaft the full cars are hoisted out of the mine by a cage or elevator, which lifts one car at a time. To reduce the lift, the cage is balanced by a counter weight, and both hoist ropes are coupled to the drum of the steam hoist, which is contained in a combination boiler and engine room under a separate roof.

## **Machinery Saves Man Power**

Mechanical means are even used to unload the cars, for when the cage reaches a height of some forty feet above ground, level rollers engage the guides on the tippel structure, which causes the bottom of the cage to tilt – and also the car, or course – while at the same time the car door is opened by an automatic lever and the coal flows by gravity onto the screens.

On leaving the car, the coal flows over a bar screen, which separates the large from the small sizes, the lump coal passing into a scale hopper, where each car is weighed and the miner paid for the car on the basis of this weight.

After weighing, the hopper is opened, and the coal flows on to the upper deck of the shaker screen, where the lump coal passes over perforation and into the chute leading direct to the box car. The stove coal passes through perforations and into the car for stove coal on another track.

The small coal, which was separated from the lump before weighing, passes on the lower deck of the shaker screen, and any stove coal it contains follows through to the car for that size, and all smaller sizes pass through the perforations and down to the boot of a bucket elevator on the ground. This elevator hoists the coal to a height of forty feet, where it is fed into a rotary screen, which separates it into two sizes and feeds into bins each holding a car, which can be readily loaded into railroad cars by gravity at any time.

The power plant consists of steam engines which drive the rotary and shaker screens, and the mine hoist with 60-inch drum. Steam is provided by two locomotive type boilers which also operate the mine pumps.

## Caring for Employees

It is a common practice in the Alberta mines to provide excellent accommodation for employees. In the Dinant mine, for instance, the company has provided a wash-house, with lockers for the service of its miners, while there are bunk houses with sleeping accommodation in each for six men. A completely equipped dining room provides meals for the employees. This is under the management of a capable cook, and has seating capacity for fifty men. During the busy season, the average number of employees is 75, and perhaps 20 in the summer months, when production falls away.

Present production capacity is 300 tons per eight hour shift, or 600 tons when working two shifts each day. As the coal from this mine is of a blocky formation, no mechanical cutters are used, as is the case in some of the Alberta mines; all cutting is done with the pick. It is a six-foot seam, remarkably clean of impurities. In getting out the coal, the miner strikes in about the centre of the seam, then mines out a thin layer of clay about  $\frac{3}{4}$  inch thick to a depth of about two feet, and after this top coal is easily brought down with the pick by striking in the cleats or small cracks which run through the coal, and the lower half of the seam is then clear to mine in the same manner. No explosives are used in mining, as, on account of the regular cracks running through the coal, it can be cut with very little work.