

Stupendous Work of Uncovering 30,000,000 Tons of Ore

Big figures are in evidence in the story of Boston Consolidated for the year 1905. In fact, the management is almost afraid to indulge in them as regards the available tonnage at this great Bingham mine; for the reason the public might feel somewhat skeptical about believing the correctness of them. But three of the tunnels being run in the monzonite porphyry zone, according to a statement made by Manager Louis S. Cates a few days ago, will expose all of 30,000,000 tons of ore.

This almost seems incredible, yet the manager is in position to back up this assertion by actual measurements in a zone known to be 1500 feet long, 600 feet deep and 600 feet wide.

The Boston Consolidated contains, as the mining public is quite well aware, two mines within itself. It has one big producer in the sulphide zone, while in the porphyries, which have made the Utah Copper so well known in the mining world, is another, of stupendous proportions—one that will take considerably more than an ordinary lifetime to exhaust.

Shipment of Sulphide Ore.

From the sulphide mine, shipments have been made during the past several months at the rate of 300 tons a day and preparations are under way to supply the smelters with 500 tons, or more, beginning on May 1 next.

The development campaign that has been carried on during the past three months has resulted in some startling developments in this portion of the mine. Three large and new ore bodies have been opened in new territory. One of these bodies, as far as developed, shows an average of 9 per cent copper and it has been opened to the extent of 110 feet in length, 80 feet in width, with a raise run for 45 feet. No stopping has been done on this body as yet.

Peabody Tunnel's Importance.

On the Peabody tunnel level, the management claims, has been developed the largest single sulphide ore body in the camp of Bingham. This body, which has been developed to the length of 250 feet, shows a width of 120 feet and has been raised on for 60 feet.

In preparation for the greater production to be undertaken during the coming year, the mine equipment is being doubled and in three or four months the probabilities are that a new compressor plant will be installed. The ore bin capacity at the mine is also being doubled.

Ingersoll and Phoenix Veins.

A long cross-cut is now being run to connect the Peabody level with two other isolated, but important, veins—the Ingersoll and Phoenix. The opening of these ore bodies will double the available tonnage for mining. It is expected that the cross-cut will be completed within the next three or four months. The last named bodies will be tapped at 150 and 400 feet depth from the surface of the mountain.

Wealth of the Porphyries.

The surprising success of the Utah Copper company in the mining of the porphyry ores of the camp made it apparent that in this zone the Boston Consolidated had a valuable asset. So the development of this portion of the mountain within Boston Con. territory was commenced in March last through the driving of what is known as the Tech tunnel. The result of this work proved to be so encouraging that 12 others were started; and, since then, one and a half miles of underground workings have been started. Three of these new tunnels—the Ben Hur Nos. 1 and 2, and the Metropolitan, have shown phenomenal values in copper, with which is associated quite a surprising showing of gold. The daily assays taken during the past three months on ore from these adits have averaged 3 per cent copper; while from the Metropolitan, during the last three weeks of November, copper averages have run from 3 to 5 per cent. The most encouraging part of the development of the porphyries so far shown is that the best values are near the top of the mountain, which gives from 600 to 700 feet elevation for mining above the Creek level.

Will Use Steam Shovels.

It is in this vicinity that mining by the use of steam shovels will come into play and the manager is now laying out some work for them. Mining by this method will probably commence about May 1. The company has placed an order for three ton shovels; one of them will be delivered soon after the first of the year, while the other two are to be delivered by Aug. 1. It is claimed by the manufacturers of these machines that if railway facilities were available one of the shovels is capable of handling 24 tons of such ores as the Bingham porphyries per hour, allowing two minutes for the loading and dumping of a shovelful of eight tons of ore. It is the intention of the management of the company to use one shovel for the stripping of the mountain, one for mining purposes, while the third will be kept in reserve to meet any emergency such as the breaking down of either of the companion machines.

Will Strip Mountain.

Just as early in the spring as the snow will permit, the task of stripping will commence and it will require anywhere from 7 to 60 feet of excavating to expose the pay ore on the surface.

Eight machine drills are being used at the present time in the development of the porphyries. Air is furnished from a line brought over the mountain from the Boston compressor in Carr Fork.

Railway Facilities.

At a recent conference had with officials of the Rio Grande Western railroad, arrangements were completed whereby the latter will undertake the handling of an output of 5,000 tons a day of Boston Consolidated consolidated porphyry ore, transporting the same to the company's millsite at Garfield, on the south end of the Great Salt Lake. It is claimed that the Rio Grande will be required to spend more than \$1,000,000 in the building of new tracks and in the equipment of the line to handle the tonnage from the Boston Consolidated and other mines. Three corps of surveyors are in the field at this writing, locating the new lines and attending to the preliminaries preparatory to the commencement of construction.

New Experimental Mill.

At the present time the company has under construction an experimental mill on a site selected for it at the mouth of the Tech tunnel, which is expected to be ready to go into commission about Jan. 1, next. This plant is being put in to try out several schemes for concentration and as soon as the results are known, the signal will be given for the construction of the permanent plant at Garfield, which is to have an initial unit of 5,000 tons capacity per day. It is expected that the experimental work will be concluded so that the construction of the larger plant can be inaugurated about April 1.

Perfect System Prevails.

Everywhere in the operation of the Boston Consolidated mine the most perfect system prevails. Manager Cates has his forces well organized and this can be exemplified in no better way than by reference to the fact that the company has gone through the year



SOME OF THE ACTIVITIES AND ENTERPRISES OF LOWER BINGHAM.

Without the occurrence of any serious accidents due to the careful timbering of the mine and the good judgment exercised in the selection of men employed, and also by the fact that in the sulphide portion of the mine, where extraction has been in progress, the mining costs have been brought down to less than \$1.50 per ton.

Another Newhouse Success.

The Boston Consolidated is one more big mining company in this state that has been brought to the front with Samuel Newhouse as managing director. It is the second great enterprise launched by him in Bingham; the Utah Consolidated was the first one, but the Boston promises to become even greater than its illustrious neighbor.

Manager Cates Makes a Record.

The developments of the year have been under the direction of Manager Cates and no doubt it is the source of a whole lot of gratification to him to know that under his administration, which has extended a little over a year, the ore reserves have been increased tremendously, and that the price of the stock has risen from \$8 to \$22 a share and the valuation of the mine, taking the present selling price of the stock for a basis has increased more than \$6,000,000. It is a record to be proud of and no doubt Mr. Cates is proud of it.

To provide the sinews with which to erect the proposed milling plant at Garfield, the stockholders, several months ago, authorized the directors to issue bonds to the amount of \$1,250,000, which were redeemable in stock at \$10 a share and these are now being sought at a premium of more than 100 per cent.

The business management of the Boston Con. is under the direction of Lafayette Hancock, while A. J. Bellies and other members of the Newhouse staff attend to the metallurgical work.

Ohio's Promising Future.

The Ohio Copper company, which operates one of the principal producing mines of the camp of Bingham, has had a prosperous year of it and this is exemplified by the fact that the capacity of the mill has been doubled and developments made in the mine fully justified the erection of a plant much larger than the present one—which is handling 200 tons of ore every 24 hours.

Much exploratory work has been done during the year, and it has been productive of most excellent results.

On the 400-foot level, a cross cut has been run south for 450 feet, cutting the mineralized porphyry zone on which the Utah Copper has worked up its reputation, and for 250 feet it has penetrated a channel containing ore carrying very satisfactory copper values.

The cross-cut is still being extended and is rapidly approaching the What Cheer vein, which has been productive of a great deal of high grade ore in the past.

The present organization of the Ohio Copper company came into existence a little over two years ago, when it absorbed the holdings of the Columbia Copper company. Since that time the old Winnemuck property, including the mill and water rights, has been taken over. At the present time the mill is being supplied with ore from the Alti's Well and What Cheer ledges.

Aside from the mill operations of the company, a large tonnage of high grade crude ore has been marketed. During the past few months the mine has been clearing about \$10,000 per month. The Ohio company's properties are among the best in Bingham and when greater facilities are had for the treatment of the low grade ores, there is not the slightest doubt but that it will cut an important figure in the copper output of Bingham.

The officers of the Ohio Copper com-

pany are H. G. Catrow, president; Alfred J. Bottles, vice president; Henry Catrow, secretary and treasurer, and Werner Zeigler, general superintendent. Henry Catrow also serves the

company as its managing director and it is largely due to his energy and perseverance that the splendid success thus far has been accomplished. The board of directors consists of

the following: R. W. Burns, West Carrollton, Ohio; A. J. Bettles, Salt Lake City; N. J. Catrow, Miamisburg, Ohio; H. G. Catrow, Miamisburg, Ohio; Henry Catrow, Salt Lake; J. C. Carr,

Massillon, Ohio; J. H. Friend, Dayton, Ohio; R. L. Hughes, Dayton, Ohio; H. L. Newell, West Carrollton, Ohio; O. A. Tibbitts, Salt Lake City.

Red Wing in a Big Deal.

During the past year the controlling interest in the Red Wing properties in Markham gulch was absorbed by a corporation known as the Utah Development company, composed of Boston, New York and London capitalists. As a result of this transfer, the Red Wing has been subjected to a vigorous campaign of development and according to late reports, the mine has responded to it far beyond expectations.

Early in the year a new compressor plant was installed at the mouth of the canyon; the company's bonded indebtedness of \$50,000 has been liquidated, additional ground has been purchased, bringing the total acreage now embraced in the corporation's domains up to 125.

The Red Wing is rapidly taking its position among the big things of the "Camp of Copper" and the fact that the physical condition of the mine is better today than it ever was before, is evidence of this fact; while the healthful state of the market, places the management in position to make greater profits on shipments.

Four distinct ore bodies have been opened in the Red Wing mine, three of which carry values in lead sulphides, associated with which is from 1 to 2 per cent copper, making up an attractive concentrating proposition.

The ore bodies show an average thickness of from three to six feet and are proving continuous as development continues. An incline sunk on the Columbia vein, from the Snake tunnel, is down 150 feet and has been in ore all the way. Drifts have been made from the 150 station of the incline, both ways in ore. One face shows a five-foot breast; the other, two feet, extending to three feet in the bottom of the incline. Average samples taken from these places show values of from 12 to 15 per cent copper, from 10 to 15 ounces in silver, from 30 cents to \$1 in gold and from 1 to 2 per cent copper.

In concentration, in order to save as much of the copper values in the ore as possible, the iron, as well as the lead, is saved and from 3 to 4 tons are put into one.

A similar shoot to the one mentioned in the foregoing, has been opened for about 100 feet in what is known as the Julian tunnel; and another in the same tunnel in what is called the Jones & Powers fissure. Shipments of high grade lead ore from these finds were made during the past summer. The concentrate from the ore averages:

Gold, .675 ounces; silver, 6.7 ounces; iron, 24 per cent; copper, one-half of one per cent.

The shipments of crude ore gave returns of 33 per cent lead, 15 per cent copper and 11 ounces in silver.

It is in the McCulloch, a well defined shoot of copper has been opened and recent shipments made from here showed values of 7.5 per cent copper, 20 ounces in silver and 11 in gold.

The formation of the hill, like that of the rest of the camp, is made up of alternating lime-stone and quartzite, intersected by ore bearing fissures. The lime beds are large and contain the ore bodies. It is not uncommon for the ore beds to be from 10 to 12 feet in thickness, while there are instances, where they have been found to be twice that thickness.

During the past year, or since the company began its present campaign of development, a production of from 500 to 600 tons per month has been maintained in ore that has been extracted only in the course of development; no attempt being made at the

stopping of ore at all. The mill stuff received treatment at the Wall plant in lower Bingham.

It is the intention of the company, a little later, to erect a large and up-to-date concentrating mill on the site selected for it near the company's compressor plant at the mouth of the canyon.

The development of the Red Wing mine is in charge of Walter C. Orem, the splendid manager of the company.

United States Company's Mines.

If someone had ventured the prediction when the United States Mining company was organized several years ago, to operate the old Jordan, Galena and Telegraph mines in Bingham, that it would become a power in the mining and smelting world, the person doing so would probably have suffered a severe rebuke from the critics of the day.

While the promoters may have had visions of great things, it is doubtful if even they anticipated at that time that this corporation would grow, as it has done, to occupy the position of the greatest competitor of the American Smelting & Refining company, and to enjoy the prestige that it does today among the producers of the west.

It was not long after the organization of the company the fact became apparent that the ore from the Bingham mines required a combination with other ore to render treatment successful.

The Tintic district, it was discovered, could furnish a proper blend for the refractory copper ores of the company's Bingham properties, so the purchase of the great Centennial-Eureka mine at Eureka followed. Then came the construction of the smelter at Bingham Junction, which marked the beginning of the company's policy of expansion, and its engagement in the custom smelting business in competition with the American. The latter venture proved so eminently successful that the company has continued to enlarge its scope of usefulness.

The next move towards expansion was the purchase of the Mammoth mine in Shasta county, Cal., near Kennett, a station on the Shasta Route of the Southern Pacific railroad. During the present year a three-stack smelter was erected at this property, and placed in commission about two months ago. Recently, the company acquired some valuable properties at Eureka, Nev., among which is included the Eureka Consolidated, one of the old time silver-lead producers of that once noted camp. The company also has interests in Idaho.

At Bingham Junction, the lead smelter of three furnaces, which went into commission early in the present year, is being enlarged by the addition of three more furnaces. In other words, the plant is being doubled in size and by the beginning of the new year will be in shape to handle twice the tonnage of lead ore that it did a year ago. Two new copper furnaces have been added to the copper smelter and a third will soon be under construction. Besides the foregoing, a reverberatory furnace for the treatment of fluo dust, ore fines and concentrate has been installed, and is working successfully. The company has also acquired a controlling interest in the De Lamar Copper refinery at Chrome, N. J.

Managing Director Holden is authority for the statement that the ore bodies of the Jordan mine at Bingham have improved during the year and that the grade and quantity is better than it was 12 months ago. During the year the Galena shaft has been sunk to the 400-foot level, and this level has been run north and south, with developments entirely more satisfactory than was first anticipated.

New and immense ore bodies have been opened up in the Centennial-Eureka, and the property is in better condition than it was a year ago by considerable. The ore bodies on the 1400 level have been opened and are as large and of as high grade as they were on the level above.

The Mammoth mine in California has been undergoing vigorous development and the response has been satisfactory. In character, the ore is of a high grade and is an iron sulphide.

But coming back to the Bingham properties, the United States company probably possesses more acreage than any other corporation operating in the district. It owns close to 1,500 acres of patented and unpatented ground, and includes some of the properties which figured conspicuously in the early development of the West Mountain district. The Jordan locations were among the first recorded in the state, which, with the Telegraph mines, were opened in those days by L. E. Holden, father of A. F. Holden, the promoter and present managing director of the United States company. In 1875, the senior Holden sold his interests in a French company, which kept things moving but a short time. For a number of years afterwards the properties were idle, in fact until they came into the part of the United States company's domains.

The Bingham mines of the United States company have over miles of underground workings and sufficient ore developed above the tunnel levels to supply the smelter for a half dozen years to come. The ore produced is the typical Bingham sulphide, and is transported from the mine to the railroad station in lower Bingham over an aerial tramway 13,000 feet long; 13,000 feet being gained in the 1,500 feet additional on the lines from the mine to the loading station. The buckets used have a capacity of nine cubic feet, and when level full carry 1,750 pounds of United States ore.

Clarence E. Allen is the acting manager of the United States company's properties, in the place of Walter Fitch, resigned.

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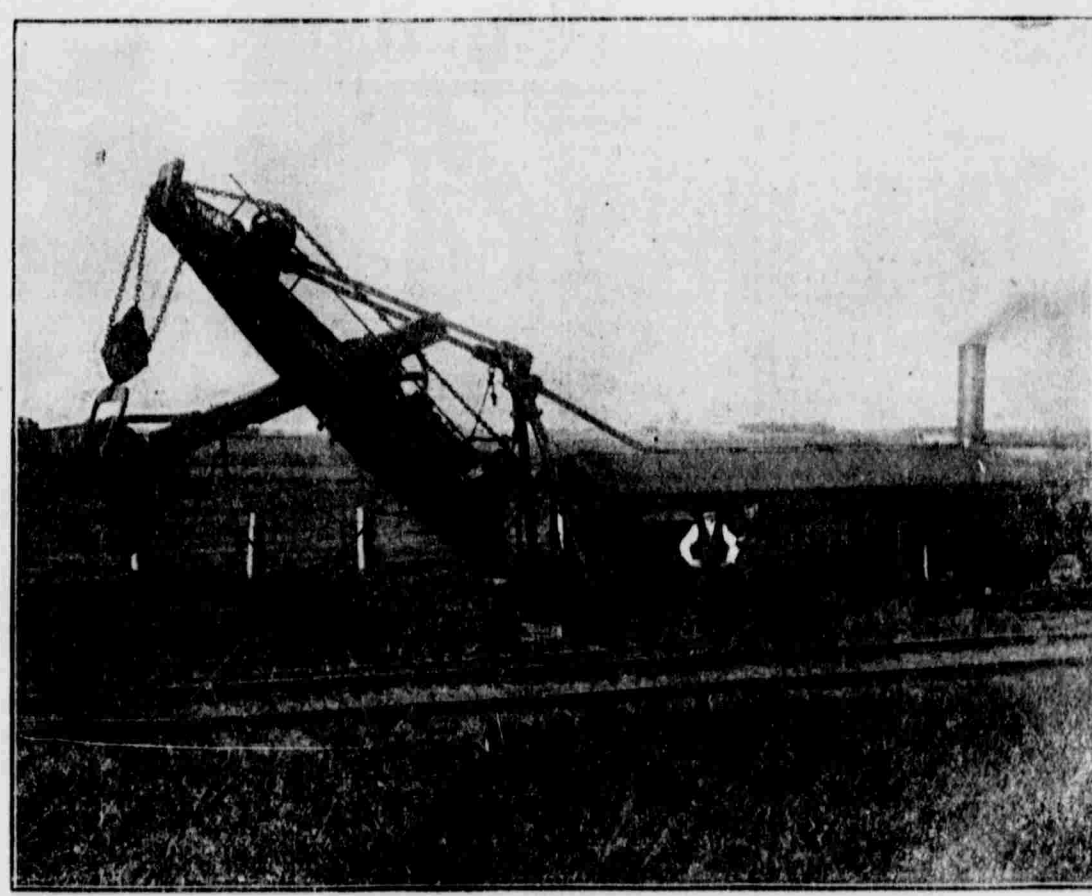
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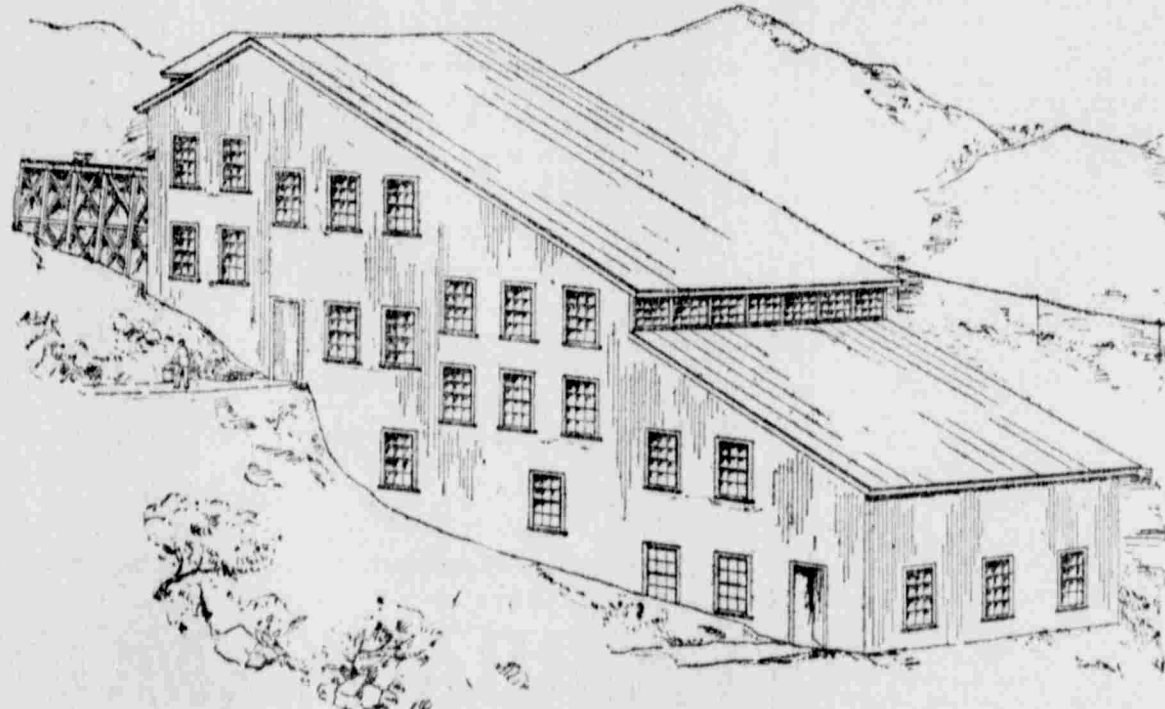
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