

THE MINES OF ARIZONA

This department is under the direction of Mr. W. E. Defty, the well known mining engineer, who will carefully scrutinize all matters relating to mining in order that only reliable information regarding legitimate enterprises shall find a place here.

The Republican would be pleased to receive information from any part of the state regarding the development of the mining industry. All communications should be addressed: Mining Department Arizona Republican.

MINING IN ARIZONA

The gold yield in Arizona increased from \$4,023,911 in 1913 to about \$4,570,000 in 1914, an increase of nearly fourteen per cent.

A record production of silver was made in Arizona in 1914, notwithstanding the reduced market price. This output increased from \$3,948,691 ounces in 1913 to about 4,469,000 ounces in 1914, an increase of over thirteen per cent. Most of the silver came from copper ores.

While Arizona still leads in copper production, the output decreased on account of market conditions, from 407,322,462 pounds in 1913 to about 388,000,000 pounds in 1914, a decrease of nearly 20,000,000 pounds, or about five per cent. Since then the mines have only been producing at a rate of about fifty per cent of their capacity, owing to the warping conditions in Europe. However, the properties are increasing their working forces and output as quickly as the demands warrant, and from present conditions and appearances, production ought to attain normality, if not even exceed that of previous years, and larger plants coming into active commission before the half year expires. For instance, the Inspiration and the new smelter at Douglas will be running full blast if the copper market conditions warrant it.

Arizona has been the leader in copper production the last few years, and will be far ahead of any figures known if the occasion demands. For there is no equal area in the world for the production of copper as Arizona and its productivity can be increased almost indefinitely for the physical conditions of the properties are excellent. They are all well ahead in development work and large areas of ores blocked out ready for stopping. Besides this fact all the reduction plants are at their highest perfection in efficiency in treatment and expedition of handling material of whatever nature.

Not only is Arizona the largest producer of copper in the world, but there are other features that belong to the big things of the universe. For instance, the Calumet & Arizona Smelter reduction works at Douglas, the largest plant under one roof in the world. The Inspiration at Miami when completed and running at its capacity will be the largest plant of its kind in the world.

The large fume stack at Jerome is the largest of its kind in the world. In addition to these, the Ajo plant as contemplated will be the largest plant in the world of its kind for the treatment of its large deposits of copper carbonate ores. Still with all these wonderful things around us, the Arizonian takes them with passive and placid complacency. It makes the stranger within our borders to fully appreciate their wonderful importance, and all this to be achieved within a very short period of the life of the territory and state. It is not so many years distant when the rich bonanzas were shipping their high grade ores to long distances

and any requirements for the mines from equally long distances. But what wonderful properties they were. For example, the old Vulture Gold Mine, which has a record production of 17,000,000. Its teamsters used to have to fight the Indians away from the ore teams. The old Silver King, which produced from twelve to fifteen millions in rich silver ore, a very extraordinary rich property, was actually discovered by soldiers who were actively engaged in fighting Indians.

And many other well known properties that had interesting history in connection with them. Fancy shipping to Missouri some of the product from Clifton and all this accomplished whilst holding off hostile Apaches. From these stages we come to such properties as the Copper Queen that had its smelters and converters in the narrow gulch at its mines. Advanced developments demanded more room at the mines and for the smelter plant, with the result that a modern up-to-date plant was erected at Douglas. Then similar necessity demanded a change at Jerome. With all these advancements in metallurgical and processes such as the adaptation of the flotation process for the saving of copper values at the Inspiration mill, and the latest processes recently worked out to treat the carbonate ores of the New Cornelia Co. These character of ores have never before been practically treated on a large scale, but it means much for other parts of Arizona that has similar ores, but have never been utilized on account of the lack of treatment methods. All this progress means an incalculable benefit to the mining areas and Arizona generally, and a largely increased production. See separate sheets that follow.

Copper Conditions

Copper advancing in price very steadily and substantially, and every indication also suggests permanently. Probably there is no more remarkable change in industrial conditions to be noted in this period of wonderful changes than has occurred in the copper field. The production caused by the outbreak of war last summer carried copper away down in price, and too low to work profitably an advance was predicted, but there was no assurance that it would come very soon and the revival has reached us earlier than the great majority has expected. The present price of copper means a great deal for Arizona. The properties have already commenced to increase their working forces and hence we are pleased to note the increased activity near coming into active operation, especially Miami and Inspiration and by a strange coincidence and probably one that has never occurred in Arizona before or many other states. It is anticipated to blow in tomorrow the 10th of May for a continuous campaign. The new international smelter at Miami and the new smelter at Charisale, at the United Verde, both these plants will very largely increase Arizona's output, by the latest and up to date methods of smelting. Certainly the outlook for the future in Arizona is very bright indeed. For the best trade authorities say that there is every reason to expect further advances in the price of the metal. Advanced prices mean greater demand and an assurance that the mines will be crowded to their full capacity in production.

U. S. Copper Production Off

WASHINGTON, April 26.—According to figures compiled by the United States Geological Survey, the smelter production of primary copper in the United States in 1914 was 1,150,157,192 pounds as compared with 1,224,484,098 in 1913. The total value of the 1914 output at an average price of 13.3 cents a pound, is \$152,968,216, as compared with \$188,795,025 for 1913.

It is likely that the 1915 output will show a vast increase in value because of the war demands.

January 4 there were 174,000,000 lbs. of copper in the United States as compared with a little over 30,000,000 on the same date in 1914.

Octave

This property near Congress Junction has had a small force employed in development for some time. It is now reported authentically that the force will be increased immediately and added to from time to time. With the full equipment which the Octave has it seems a pity that the property cannot be again put into active operation.

Iron Cap

This property near Globe has been shipping some very good ores. One car averaged 8.45 per cent and another 11.36 per cent. Other cars have been shipped that are expected to go better than these. The mine lies in between the Copper Hill mine of the Arizona Commercial.

Calumet and Arizona

The head offices of the Calumet and Arizona confirm the report that the company is preparing to resume full production. The property has been producing at only 75 per cent normal, but development work is being advanced to permit normal production.

at any time necessary. The working force is being increased and it is expected that production will be back to normal within a short time.

Ray Consolidated

The output of Ray Consolidated for the month of March was 5,322,163 pounds as compared with 6,237,617 pounds in the corresponding month of last year.

Tom Reed

The total output of this property for the last year was over 1,000,000 in gold. Dividends for the year totaled 68 cents on the outstanding shares. The usual high extraction was maintained at the mill and cyanide plant, the average for the year being 57.65 per cent.

Arizona Copper Production

In 1915 it was 191,378,599 in 1914 it was 382,449,922 pounds.

Report on Gold Property

I have just read a so-called report upon a certain gold property situated in the United States. One paragraph states, "That the secondary enrichment of the gold vein had been reached." No wonder its rich. That's all very good, but the enrichment is only secondary. Pity it wasn't primary?

Ajo

The work on the last well being mined near this property has ceased. The well produced over 300 gallons per minute. All the water the property is likely to need in its operations is now assured. Quite a large amount of machinery is now being hauled to the property from Gila Bend. The machinery is for varied purposes.

The Miami Copper Co.

The output for this property in 1914 and previously given is as follows, 1,699,208 tons of ore was hoisted, and 1,096,633 tons milled averaging 2.28 per cent copper. From this ore 44,579 tons of concentrates was produced averaging 29.31 per cent copper. The total copper in concentrates amounted to 35,948,445 lbs. of which 33,296,919 lbs. was recovered as refined copper. Copper sales for 1914 aggregated 32,874,447 lbs. at 11-3/8c per pound.

The following description of the new gold find near Winkelman is from the pen of one of the parties interested.

New Gold Strike Six Miles North of Winkelman

This find was uncovered on the 18th day of last January by Stewart and Lavell owners of the ground and has paid from grass and oats. The owners have shipped to date April 23rd, two car loads and an initial shipment of 87 hundred to the Hayden smelter.

The initial shipment, per smelter return net paid \$55 per ton, which was first ore occurring just behind the iron capping. The carload shipments have averaged \$25.00.

The deposit occurs in the form of a chimney at contact of line and a probable volcanic shale, and inclines to south and east at about 22 per cent. The drift is now in 50 feet 6 feet wide and 15 feet high, pay ore occurs to top changing south and east also continues to right and left horizontally. This find is a bonanza as regards its size and facility for mining. It being principally a pick-a-poke proposition. It bears every ear mark of being an arm or extension of an extinct volcano, as evidenced by the round hole, about large

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This is the age of youth. Gray-haired, unattractive folks aren't wanted around, so get busy with Wyeth's Sage and Sulphur tonight, and you'll be delighted with your dark, handsome hair and your youthful appearance within a few days.

enough for a man to crawl into, which continues in the face of the drift and the volcanic ash occurring in and around same and by the wonderful many colored, burned and blistered specimens which come out of the mine.

One carries gold, silver, lead and copper, gold predominates and by assorting closely could be made to pay \$100.00 better. There is a 6-inch streak in foot wall, which owners are saving apart from other ore, if assayed would run up into the thousands as they display many very rich free gold specimens.

Since Stewart and Lavell made their find there has been three other discoveries of gold in the vicinity. One by Mr. McHugh, 26 dollar rock and another by Chas. Finney who has a lease on the "North Pole" claim, London-Arizona Con. ground. The other strike is 3-1 mile to northwest, a 4-foot vein 1/2 mile rock, was made by Red Wallace and Geo. M. Adams. The London A. C. claim adjoins the Apex mine, the Stewart-Lavell strike.

Kelvin Sultana Will Push Work

It is officially announced from Kelvin, Ariz., by the president of the Kelvin-Sultana Copper company, A. H. Westfall that both mines and mill will start full blast on or before May 1st, and the company will start processing its six principal veins on the 24th level.

The mill, which was completed last November with the exception of the installation of its sand pumps and Woodbury flax, has now been fully completed and will start off with 150 tons per day which will come from the 300 level.

The capacity will soon be raised to 300 tons per day by the addition of an equal number of concentrating tables to those already installed, as the rest of the mill in all its component parts has a capacity of 300 tons.

The company's financial condition is excellent and with the present price of copper the company is expected to make a handsome profit from the start.

Describes Tests of Flotation Process at the Inspiration

There is widespread interest among mining men in the tests that are being made of the flotation process. The following extract from the annual report of Inspiration Mills of Inspiration deals with the subject:

"During the first months of the year our flotation efforts met with varying fortune, some months the results were very good, other months they were bad, due apparently to a bad choice of frothing agents. Beginning with August 1, we put into effect a flow sheet in the main line that finally adopted for our mill construction and in use a frothing agent selected through laboratory tests by those in charge of our laboratory work. In the continuous running from that date to this, the saving of copper occurring in the ore in sulphide form has averaged 90.3 per cent.

The recovery of that part of the copper occurring in the ore in oxide form is harder to determine, but seems to be from 20 per cent to 30 per cent. The average recovery of total copper contained in the ore will of course depend vitally upon the proportion present in oxide form. The average quantity of copper in oxide form in the ore milled last year was 15 per cent out of a total of 1.52 per cent copper in the ore. The average recovery of 86.7 per cent would correspond to a recovery of total copper contained of approximately 89 per cent. This figure of 86.7 per cent recovery of copper present in the ore in sulphide form seems one that we may represent the result of the last year to realize in the new mill since seven months work of the best plant treating 76,000 tons of ore. It is more conservative because it does not represent work done under the conditions and alone with the machine we have found to be most efficient, but the average and merged results of experimental variations and competitive machines."—Arizona Record.

GIRL OF THE PERIOD

"Well, is your bride a good house keeper?"

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- Cave dwellings 10 miles
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- Montezuma Well 20 miles
- San Francisco peak 12 miles (Elevation 12,960 feet)
- Altitude of Flagstaff, 6907 ft.
- Prehistoric Ruins 35 miles
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