

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 Republic will 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.

SILVER

Only Metal to Decline as a Result of the European War—How it Affects Anaconda and Other Large Producers

Silver is the only metal which has declined in price since the beginning and as a result of the European war. In 1914 bar silver sold at 59 1/4 cents per ounce. Recently it was quoted at 46 1/2 cents, a depreciation of more than 20 per cent.

Silver made a new low record price at 46 1/2 cents, the previous low point having been 47 cents in 1913. For the first seven months this year silver has averaged under 49 1/4 cents as against an average of 54 1/2 cents in 1914 and 53 1/4 cents in 1913.

The highest price at which silver has sold this year is 51 1/2 cents. In 1906, nine years ago, it sold as high as 71 3/4 cents. From that point it declined to 47 1/8 cents in 1908. Four years later it rallied to 64 1/8 cents, dropping to 47 cents again last year.

Unless there is a substantial recovery during the remaining five months of this year, it is apparent that the average price for 1915 will under rather than over 48 1/2 cents.

During the past few years the production of silver in the United States has been more than 60,000,000 ounces per annum. The average price of silver for the past 10 years has been 57 1/2 cents, making the annual commercial value of the output approximately \$35,000,000.

On a production of 60,000,000 ounces this year there will be a depreciation in its commercial value of \$5,000,000 estimating this year's average price at 51 1/2 cents under the average of the past 10 years.

The mining companies depending chiefly on their silver output will feel the depreciation most, but a large proportion of the silver production of the country is derived as a by-product from lead and gold ores. The advance in the price of copper, lead and other metals will more than offset, in most cases, the decline of silver.

Take the Anaconda Copper Company as an illustration. The Anaconda is the largest individual producer of silver in the United States and it also exceeds in silver output of the Cobalt mines. In 1912 the Anaconda produced 11,014,737 ounces of silver as a by-product of

its copper ores; in 1913 the output was 8,719,133 ounces, but in 1914, owing to a general curtailment of mining operations, the silver recovered was only 7,221,815 ounces.

An average output based upon the past three years would be about 9,000,000 ounces in round numbers. As the difference between last and this year's average price of silver is likely to be about six cents per ounce, the Anaconda company's income from its silver output would be affected to the extent of \$540,000.

This would amount to less than 25 cents a share on Anaconda stock, while, on the other hand, the advance in the price of copper is almost sure to add between \$3 and \$4 a share to the company's earnings.

The silver mines of the West and in Cobalt will feel the full effect of the depreciation in the price of silver which undoubtedly accounts for the low prices at which many of the purely silver stocks have been selling recently, and particularly as the price of supplies and chemicals, cyanide, zinc and aluminum—consumed in the extraction of silver has risen considerably.

Some Items on Copper

While actual business in the copper market yesterday did not show any material increase, a better feeling was noted in producing circles, caused by signs that the time is drawing near when the sizable inquiries in the market must materialize into heavy buying.

It is estimated that around 200,000,000 pounds of copper are being inquired for, which is about the same tonnage placed during the June buying movement and represents the production of two months.

Europe appears to be holding off at the moment, buyers there hoping for a different method of payment than the cash proposition demanded by holders here.

The exports reported at the custom house yesterday amounted to 313 tons.

New York Stock Exchange

The exports of copper in July amounted to 17,308 tons, compared with 20,145 tons in this month, last year.

A private wire from New York says: Look as though the copper would lead the market, followed by the war stocks.

Copper

Morrison, Kekewich & Co., write to F. L. Milliken & Co., from London: Electro in second hands is slightly lower, but so far leading producers have not reduced their price to any large extent.

Consumption all around is very large and as manufacturers have not bought at this freely lately the time is approaching when there should be a fresh outburst of buying.

Heavy Inquiries for Copper Metal

New York. The inquiries for copper metal yesterday were enormous. One large company bid for a block of the metal of approximately 25,000,000 lbs. It was learned that the aggregate of the inquiries was 150,000,000 lbs. all for domestic consumption.

Seven Months Dividend Disbursements

July proved an unusually good month to holders of stock in American mines and works according to reports made to Mining & Engineering World. Disbursements totaled \$8,688,980 and were participated in by 51 companies.

The effect of the continued high prices for copper is beginning to be felt by the larger producers as evidenced by increased disbursements, and by the resumption of dividend payments by a number of companies which discontinued payments some time ago. The operators of zinc and lead mines, also have felt the influence of high prices and have increased their declarations.

While total disbursements during the 7 months of 1915 are considerably behind those during the same period of 1914, there is every indication that the balance of the year will witness such large increases over the returns made in similar months in 1914 that the year's total will be much greater than in that year.

From reports made to Mining & Engineering World it is learned that

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34x3 1/2	\$10.35							
36x3 1/2	\$10.80							
30x4	\$13.00							
31x4	\$12.40							
32x4	\$13.15							
33x4	\$13.70							
34x4	\$14.20							
35x4	\$15.00							
36x4	\$15.40							
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97 mines and works have contributed \$48,492,497 to stockholders during the 7 months of 1915 ended with July. These companies have total disbursements to their credit amounting to \$919,244,561 on their issued capital of \$516,697,794.

Of the above companies 25 operate copper properties in the United States and they contributed to the year's total \$20,459,785 and a total to date of \$453,773,399. The issued capital of these companies is \$251,475,200.

Sixty six of the above companies operate properties classed as gold-silver-lead-zinc producers and they disbursed during the 7 months of 1915, \$19,666,952 and since incorporation, \$291,495,193, on an issued capital of \$231,144,104. Forty-seven of these properties are operated in the \$15,131,562. Since incorporation dividend declarations total \$214,991,949. Sixteen are Canadian properties and their disbursements in 1915 total \$3,042,569 and to date \$59,298,987. Three are Mexican properties, with disbursements for the 7 months totaling \$592,821 and with total disbursements of \$17,206,057.

Six metallurgical works disbursed \$8,365,760 during the 7 months' period and since incorporation \$173,975,369, and to date \$173,975,369.

Six securities holding corporations declared dividends during the year totaling \$16,191,048 and since incorporation \$187,133,767.

Tom Reed

The product of this property for July from the treatment of 4,000 tons of ore was about \$100,000 gold.

Gold Roads

This property treated in its mill in July 10,000 tons of ore, which returned \$65,000 gold.

Some Adobes

On July 28 over 2000 tons of Mexican dollars arrived at Bisbee from China, to be used in paying off an Anaconda. This will be better than the Carranza or Villa dollars for at present they are quoted on Wall Street at 5c and 1c respectively.

Latest reports from Cananea says the employees were greatly and agreeably surprised when getting their pay envelopes to find they contained silver instead of paper money.

Nacozari Mines Reopen

Temporary repairs made to the road bed and bridges of the Nacozari railroad destroyed two months ago, enabled a trainload of supplies to reach Nacozari. As a result, the mines and concentrator of the Montezuma Copper company employing several thousand men have been reopened.

This property is one of the Phelps Dodge holdings.

Needles Reduction Plant

A flotation process is being added to the concentrator at the Needles. This will enable the plant to treat all lead-zinc ores that are offered. At present the concentrator treats little ore except that from the Tennessee and Champion mines. The Tennessee is shipping seven carloads a day.

The treatment of such ores by this plant will greatly assist the mining of these ores in Arizona and especially in Mohave county, where there is a great deal of zinciferous ores.

Commonwealth

It is reported that a rich strike has been made in this property at Pearce. This property always produced rich ore, in fact the purchase price was fixed by John Brockman from ores mined near the surface. The property is now owned by the Montana Mining Co. of Tonopah. The present strike was made on the 1000 foot level in new ground, the vein is 10 feet wide and assays \$37 to \$44 per ton. The silver contents predominating.

Commonwealth Extension

A recent new strike is also announced from this property which is a west extension of the Commonwealth. The property is mainly owned by Bisbee stockholders. The ore was encountered on the 200 foot level and is reported to be five feet in width and of excellent value.

Middlemarch

This property situated eight miles from the Commonwealth properties has been bonded for a consideration said to be \$50,000. The property comprises over 20 claims and has had varying amounts of development, over a number of years. The ores encountered are generally low grade, and much of it with a garnetiferous gangue. The property was held for over 20 years by the Gird Bros. & O'Gorman and other stock holders in California, and could have been bonded several times for large amounts. One time for \$200,000 and \$50,000 to be spent in development in one year, however, the owners refused this and eventually died without deriving any benefit from the property.

Arizona Copper Co.

The report of this company at Clifton for year ending September 30, 1914, shows a production of 38,756,000 lbs. of bismuth copper ore mined from the company's properties, amounted to \$1,079,950 dry tons and the smelting returns indicated an average contents of 35.17 lbs of copper per ton, about 95 per cent of the ore mined was concentrating ore, of the copper produced 81.4 per cent came from the sulphide ores and 18.6 per cent from oxidized ores.

The financial statements show that the profit from operations in Arizona was \$1,400,919. After payment of \$1,919,221 in dividends satisfying

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bond interest and other charges and adding other income.

Shannon Copper

Shannon received an average price of 18.75c cents per pound of copper produced during the month of July. As production at the mine held up to the average, amounting to a little better than 1,000,000 pounds, it is evident that the company is earning at the rate of approximately \$60,000 per month. At this rate earnings per share are running close to \$2.50 per share on 200,000 shares outstanding.

As yet there is no indication as to when the stock will enter the dividend list for the directors have not considered the matter at all. It is believed, however, that Shannon should build up a larger working capital before any consideration is given to the matter of dividends. In this respect Shannon is exceptionally well situated at present. The working capital amounts to probably better than \$400,000, which is large for a company of its proportions.

A fact that is not generally appreciated is that Shannon has about \$500,000 worth of copper in transit which is tied up for practically three months at a time. Of course this can be drawn upon if necessary, but it is an element of the working capital that is temporarily tied up. By building up a strong cash balance before distributing anything in the way of dividends, the large proportion of its capital that is tied up will not confront the company with difficulties in the future.

The leaching process on which Shannon has been working for some time is considered a commercial success, so far as tailings are concerned, and the company is now engaged in the erection of a 150-ton plant for the treatment of tailings. So far as the treatment of low-grade ores is concerned, Shannon is considered as coping successfully with the problem.

Arizona Commercial

The advance in Arizona Commercial is on receipt of advices that the management has found the ore in the upraise from the 1400 foot to the 1300 foot level. This is what the management has been looking for and expecting.

Ray Consolidated

This company reports for the quarter ended June 30, last, contain the following:
Surplus for quarter, \$793,851.
Production for same period, 14,524,380 pounds. In addition to copper derived from concentrating ores there was a total of 27,551 pounds of copper contained in ores shipped direct to the smelter during the quarter.

This combined with the copper contained in concentrates brings the total gross production for the quarter up to 14,802,231 pounds.
The average cost per pound of net copper produced from milling ores for the quarter was 9.12c cents. The combined cost per pound of net copper produced from milling and direct shipping ore for the quarter was 9.12c cents.

The sixth quarterly dividend was paid on June 30, 1915, amounting to \$347,025, making the total dividends disbursed to date \$3,267,561. The capital stock outstanding on the day last dividend was declared was 1,458,779 shares and there were \$32,380,000 par value of bonds outstanding at end of the quarter.

Arizona State Bureau of Mines

One of the features of the work of the College of Mines and Engineering of the University of Arizona is its employment bureau which has been remarkably successful during the past summer. Not only have all the University students desiring positions, been placed, but its work has extended to the placing of undergraduates of other mining schools. The mines of the state have co-operated very extensively in the work and have extended their facilities in many cases.

Over 130 men have been placed in summer work at a daily wage of from \$3.50 to \$4.25 per day. Of these men about 29 were from the University of Arizona. In numbers the Missouri School of Mines came next with 17 men receiving employment through the University Employment Bureau.

The men have been scattered all over the state generally to the larger companies, and are to be found in Bisbee, Globe, Hayden, Humboldt, Jerome, Gold Roads, Miami and many other camps.

Ground Water in Paradise Valley, Arizona

The United States Geological Survey announces the publication of a report on ground water in Paradise Valley, which lies a short distance north of Phoenix, Ariz. The report is based on an examination made last summer at the request of Vice-President Marshall, by O. E. Meinzer and A. J. Ellis of the Survey staff.

It contains a brief but important statement of the physiography, drainage, geology, soil and vegetation of the valley, and a discussion of its climate as compared with that of the citrus belts of the Southwest. It describes the source, occurrence, depth, and quality of the ground waters and gives instructions for sinking wells and installing pumps. The report plainly states that there is no evidence of artesian structure and that wells should be drilled with the understanding that pumping will be necessary; moreover, that the yield of wells and the ultimate supply of ground water will be found to be much less than in the Salt River valley. The prospects of obtaining dependable supplies from underground sources for irrigation on a small scale are sufficiently encouraging to justify the sinking and testing of wells, and, with good management, it should be practicable to pump the available supplies for irrigation in the southern part of the valley, where the water table is less than 100 feet below the surface. The report includes an underground-water map and other illustrations, among which are views of the desert forests of mesquite, palo verde, and giant cactus. The analytical work was done by the Arizona Experimental Station, which, under the direction of R. H. Forber, has for many years co-operated with the Federal Survey in the investigations of the water resources of the state.

The Paradise Valley report, which is known as Water-Supply Paper 275-B, can be obtained free of charge by applying to the Director, United States Geological Survey, Washington, D. C.

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Over 4,000 Tons of Arsenic

The figures showing the production of white arsenic in the United States in 1914, collected by Frank L. Hess of the United States Geological Survey, indicate an output amounting to 4,670 short tons, valued at \$133,147. This is somewhat more than was shown by the preliminary figures, and exceeds the largest previous output, that of 1913: 4,231 tons, valued at \$128,236, by 45 per cent. No direct production of white arsenic—that is, no production from arsenic minerals treated primarily for their arsenic content—has been made in this country for several years, because the arsenic saved at the smelters as a by-product and the

imported material have been so plentiful and so cheap that such production would have been unprofitable.

The country's arsenic resources are immense. Deposits of arsenopyrite, the commonest of the arsenic minerals, are found at many places, only a few of which are known to this Survey, because they are generally of little or no value unless accompanied by precious metals; and as high prices have prevailed only at long intervals, little notice has been taken of the deposits by miners and prospectors.

Falling a Mile

Some interesting experiments have been made in this country for several years, because the arsenic saved at the smelters as a by-product and the

(Continued on Page Ten)

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