

May 13, 1876

NEW MINES

An important minign discovery has just been made in San Bernardino County of this State. Large bodies of rich argentiferous galena have been found in a locality where wood, water, and climate are all that could be desired. An organization of the Resting Spring District has been the result, and as some of the discoverers are acquainted with the Eureka smelting ores, then favorable opinion of the new mines is a good practical endorsement of their value.

THE MODOC CONSOLIDATED SILVER MINE "ANNUAL REPORT."

The *Coso Mining News* of the 10th inst. publishes the following: "Work was commenced upon this mine in the early part of the year 1876, and the first shipment of bullion was made October 14th, 1876. Up to July 1st, 1877, 8928 tons of ore were smelted, producing 1388 tons of bullion, having a gross value of \$689,893.87. For the year ending July 1st, 1878, 4541 tons of ore were smelted, producing 890 tons of bullion, having a gross value of \$317,850.44. The total number of tons of bullion produced is 2188, valued at \$1,008,744.31. The bullion varies in value from \$275 to \$770 per ton. The estimated value of the personal property and real estate belonging to the Modoc Consolidated Mining Company, not including the mines, water-rights, timber claims, 78 miles of roads (built at great expense), and some miscellaneous supplies, is \$58,612. Besides this, the company has on hand at the mines 5000 tons of milling ore, the assay value being \$200,000. On the 1st of July, 1877, the indebtedness of the company was \$133,000. On the 1st of July, 1878, it was \$43,280.13, to which must be added the balance of expenses not down for June account. Last year, the cost of coal was 40 cents per bushel, iron ore \$20 per ton, wood \$22.50 per cord. Under Mr. Guptill's management, the coal has cost this year but 34 cents per bushel, iron ore \$19 per ton, wood \$18.50 per cord, making a saving of a very considerable sum. Last year lumber cost \$115 per M, whereas this year it is being delivered for \$95. In addition to the work for developing the mines on the 200-foot and 300-foot levels, a tunnel has been run in from the eastern base of Lookout hill, which is for the purpose of striking the several ledges at a depth of 1000 feet, and for facilitating work. This tunnel is now in 400 feet, and is being driven rapidly ahead. All the ore from the mines can be taken through this tunnel, when completed, to the furnaces and mill, which will be located near the mouth of the same, thus saving to the company some \$15,000 per month now paid for packing supplies up and bullion down the hill. Recent developments in the 1000-foot tunnel have demonstrated the fact that large ore-bodies are found on this level, and the permanency of the mines of Lookout are guaranteed. Taking into consideration the lessened cost of supplies, moving the ores, and a saving in transportation of bullion, the removal of the works to the base of the hill, to near the mouth of the tunnel, should be consummated as soon as possible, as about 75 per cent of the ores can be milled. The superintendent recommends the building of a 15 or 20-stamp mill also at the mouth of the tunnel. This done, and Modoc will rank with the best paying mines in the State. The assets of the company, July 1st, 1878, were \$259,297.72, and the liabilities \$105,510.85."

REX MONTIS MINE "ANNUAL REPORT."

The *Stock Report* says:

"The annual meeting of the Rex Montis Mining Company was held on the 5th of August. The mine was incorporated two years ago, with a capital of \$300,000 in 3000 shares. There have been ten assessments in all, though the whole of the last one had not been collected at the closing of the report, August 1st, 1878. The net value of the bullion produced last year was \$29,876: from assessments \$47,997, and from other sources, \$6810. All these amounts, together with the greater part of \$6370 in cash carried over from the previous year, were expended, the total disbursements last year being \$90,000, while the amount of cash on hand on the 1st inst. was only \$280. There were 366 tons ore mined and milled last year, and 606 tons for the two years ending August 1st, 1878. The entire revenue of the mine has been expended as follows:

Assessments to August 1st, 1878.....	\$58,463.40
Bullion received (coin).....	63,411.00
Notes payable outstanding.....	15,200.00
Unpaid bills.....	6,159.50
Total expenditures.....	\$143,461.20

"The Rex Montis is a base-bullion mine located in Inyo County."

CALIFORNIA.

THE MODOC.—The *Inyo Independent* says: This, the most prominent and solid incorporation of this county, is pushing work ahead in the mine with a force of thirty men. The mine is looking well at all points, the main body of fine ore, however, being in the stope of the West Lookout 300-foot level. Wood and coal hauling will begin in a few days, and the furnaces will be fired up about the 10th of August.

# Engineering and Mining Journal

Sept. 3, 1881 p. 156

INYO CONSOLIDATED.—The superintendent reports that the recent strike in the Eureka has developed into a four-foot ledge. The mill-runs hitherto have averaged 108 ounces of silver per ton.

Oct. 8, 1881 p. 241

INYO CONSOLIDATED.—The superintendent states that there are now on hand and ready for treatment at the mill and on the dumps of the company's mines 400 tons of ore, the assay value of which is \$136 per ton. The *Independent* of September 17th contradicts a report that the Panamint mill had been mining on waste rock.

Nov. 19, 1881 p. 340

INYO CONSOLIDATED.—The superintendent has telegraphed: Have 500 tons high-grade ore at mill. All needed supplies are shipped from San Francisco, and I commence milling the ore this week. Had to shut down mill for repairs.

Dec. 24, 1881 p. 419

## INYO COUNTY.

INYO CONSOLIDATED.—Superintendent reports, December 7th, that the supplies for the mill are on the ground, and would be in place in four days, when the mill would be started up. Ore of good quality has been taken from the mines without interruption, and over 500 tons are at the mill and mines. The mines continue to look well at all points, and from this time forward the force of men will be increased.

Jan. 21, 1882 p. 39

INYO CONSOLIDATED.—Superintendent reports, January 2d: The mill has continued to run steadily since my last with good results, the ores running fully as high as I estimated. Including what I have already shipped for month of January, 1882, I expect it to be very near \$40,000 for the month. Am now running through very low-grade ore, reserving the rich for last of run. Our Eureka mine still continues to develop finely, with every prospect of making a large and extensive body of rich ore. At present, I am milling ores from this mine which average \$150 per ton. All the other mines continue to look well at all points.

Feb. 11, 1882 p. 82

INYO CONSOLIDATED.—The superintendent reports, January 29th: Every thing in and around the mines and mill continues to run and look well. Will ship 12 bars bullion in a day or two; value about \$12,000. I have a good force of men here now, and my shipments will be much greater in future.

April. 8, 1882 p. 187

## INYO COUNTY.

MODOC CONSOLIDATED.—The *Inyo Independent* says that the usual amount of ore is extracted from the lead mine, and about seven tons of silver ore are stoped out per day from Confidence No. 4. Extracting from the Lookout was suspended on account of having to put in timbers. Up to March 23d, the furnace had received 207 tons of ore. The furnace will start up as soon as enough coal, which is ready for hauling, is delivered by the teams.

Engineering and Mining Journal

Sept. 23, 1882 p. 164

**INYO CONSOLIDATED.**—Enough ore will be extracted to make the September run fully 500 tons. The ore is said to be high grade, and averages at least \$100 per ton. The mill machinery has arrived, and is getting into position. The mill is probably in operation at this date.

**MONTEZUMA.**—Superintendent A. H. Griswold, who recently purchased this mine, is now engaged getting a smelter in operation.

Oct. 21, 1882

**INYO CONSOLIDATED.**—This company, of which H. A. Gildersleeve is President, N. G. Fairman, Secretary; M. T. Brown, Treasurer; and G. M. Pinney, General Manager, has recently increased its capital from 100,000 to 200,000 shares, per value \$5. A prospectus has been issued recently, which gives some details concerning the prosperity of the company. Abstracts are given of what appear to be earlier reports by Mr. C. A. Stetefeldt, and a later report by Mr. H. B. Caven. The mine is situated in Surprise Cañon, Inyo County. The mill has twenty stamps and a Stetefeldt furnace, a rope tramway a mile long, etc., and is estimated to have cost originally \$350,000. The only new statement which the prospectus contains, so far as we can see, is that of Mr. T. B. Pheby, M. E., superintendent, who writes, under date of September 10th, that he has extracted, and has now on hand, 500 tons of ore of an average value of over \$100 per ton; that he has exposed large bodies of ore in the Ida and Wall Street; and that the repairs of the mill are completed, and that further expenditures on it will not be necessary for a long time. The mine shipped \$12,000 in September and \$46,421 since the 1st of January, 1882.

Dec. 2, 1882 p. 298

**EAGLE BORAX COMPANY.**—The Calico *Pyrit*, in speaking of these mines, says: The mines are all located in Death Valley, about twenty miles from Panamint, in twenty-acre lots. There are ten men at work getting out borax and preparing it for shipment.

Dec. 23, 1882 p. 336

**SAN BERNARDINO COUNTY—PROVIDENCE MOUNTAIN DISTRICT.**

**BONANZA.**—The first shipment of bullion will be made shortly. The mine has a good showing of rich ore. A two-stamp mill is on the property.

Dec. 30, 1882 p. 350

**SAN BERNARDINO COUNTY—PROVIDENCE MOUNTAIN DISTRICT.**

The extension of the Southern Pacific Railroad, now building to connect at the Needles with the Atlantic & Pacific Railroad, is likely to open up a new and valuable mineral field in this district.

**BONANZA KING.**—The new silver mill began crushing ore December 21st. It is the most complete mill ever built in Southern California. The mine has three levels, well opened, and several thousand tons of very rich ore on its dump.

# Engineering and Mining Journal

Jan. 6, 1883 p. 7

## INYO COUNTY.

**INYO CONSOLIDATED.**—The mill at Darwin was burned to the ground on the evening of December 19th. It was erected in 1874-75 by the Surprise Valley Water Mining and Milling Company. It is said to have cost the present management about \$50,000, and was insured for \$40,000.

Jan. 20, 1883 p. 33

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

**BONANZA KING.**—The water troubles of this company at Providence have been settled by the purchase of the Water Jacket spring, and the company's ten-stamp mill (dry crusher) began steady work on January 1st.

**ORIENTAL.**—Work has been begun on a ten-stamp mill for this company at Calico.

Jan. 27, 1883 p. 47

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

**BONANZA KING.**—The working results of the new ten-stamp mills of this company, at Providence, are said to be highly satisfactory. The bullion shipments for the first half of January were \$32,523. The Atlantic & Pacific Railroad will reach these mines in about thirty days.

**GORMAN & DWYER.**—A recent discovery of a large body of surface ore is reported to have been made.

Feb. 3, 1883 p. 61

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

It is reported that large lead mines have been discovered in Timber Mountains, 100 miles north of Providence.

Feb. 17, 1883 p. 91

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

**BONANZA KING.**—The January product, without clean-up, was \$61,777.44. This was the result of ten stamps, dry crushing. It is reported that the mill is working entirely on second-class ore-screenings.

Mar. 3, 1883 p. 121

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

The railroad has been completed to Providence, reaching an extensive mining country.

The mines which are worked in the district show generally good results.

**BONANZA KING.**—The mill is turning out 2000 ounces of bullion daily. It is reported that a new strike of extraordinarily rich ore has been made in the extreme north end of the first level of this company's mine.

Mar. 17, 1883 p. 151

## SAN BERNARDINO COUNTY—PROVIDENCE MINING DISTRICT.

The Providence Times reports as follows:

A new strike was recently made between the Bonanza King and Rattler. The shaft is now down some 12 feet, with every prospect of a fine body of ore. The company also, in sinking a winze in the south end of the mine, struck another body of fine mineral.

A mine has been opened north of the Bonanza King, which is showing up a considerable quantity of high-grade ore. There are now sunk two shafts, one some 50 feet and the other about 25, with several openings along the ledge. In drifting from the bottom of one of the shafts, some high-grade ore has been taken out.

**BONANZA KING.**—The mill is still running on second-class ore and turning out two thousand ounces of silver daily, 930 fine. The mine is looking better than at any other time during its history. The rich strike in the extreme south end of the first level continues.

**LUCKNOW.**—The owners have run across a ledge of about ten feet carrying mineral the full width. There are several other small openings on this claim, making a good showing of mineral.

# Engineering and Mining Journal

Mar. 24, 1883 p. 166

## INYO COUNTY—BEVERIDGE DISTRICT.

**ELGIN.**—This mine is situated eight miles north of the Keynot mine, and about sixteen miles from Independence. No work of any consequence had been done on the claim until a short time ago, when operations began. The vein is favorably situated for working both the mine and ore, being within one and a half miles of plenty of water and wood. The ledge shows itself on the surface for a distance of 1000 feet, and at the point where work has been commenced, the vein shows a width of three feet of rich gold quartz. Average samples assayed give from \$80 to \$120 per ton in gold.

**GOLDEN STAR.**—The shaft has reached a depth of 100 feet, showing a fine vein of ore in the bottom, twenty inches wide. It is the intention to sink 30 feet more, and then begin drifting on the ledge. The ore will be hauled and worked at the Brown Monster mill. Three average assays made lately gave, gold, \$77; silver, \$43 per ton.

Mar. 31, 1883 p. 181

## SAN BERNARDINO COUNTY—CALICO DISTRICT.

A correspondent of the *Eureka Sentinel* states that there are two distinct walls and well-defined ledges in the King, Moscow, and Sioux mines. The ledge in the King is about 14 feet wide, with porphyry on both sides. The greatest depth yet reached is in the King mine—150 feet. The ore is silver-bearing and soft, some free and some base. Some specimens show copper-stained quartz, carrying horn-silver, almost pure. The different mines are now developing, several mills are running, and a new ten-stamp mill is building. The trouble so far is to get water, though the wells dug on the flat seem to yield a fair supply.

Apr. 7, 1883 p. 197

## SAN BERNARDINO COUNTY—PROVIDENCE DISTRICT.

Rich discoveries have been recently made, and the prospects promise a most prosperous future for this district.

**BONANZA KING.**—The reports from this mine continue to be favorable.

**TROJAN.**—Work has been begun on this mine, an adjoining property of the Bonanza King.

## CANADA

Apr. 14, 1883 p. 210-211

## INYO COUNTY.

A correspondent of the *Inyo Independent* says that the Defiance mine was located in the latter part of 1874. Two 30-ton furnaces were erected at a distance of three quarters of a mile from the mine, and were run for about a year at a loss to the owners. This was due principally to the high cost of transportation and the depreciation in value of lead. The cost of transportation then amounted to \$80 per ton from and \$47 per ton to San Francisco. The rates of freight are now much less, and for the past two years the mine has paid well. It has been worked to the depth of 212 feet, 500 feet in length, and 60 feet in

width. The company (known as Reddy, Gorman & Co.) proposes to carry this working down to the depth of 600 feet as speedily as possible. The facilities for doing this are good. The total yield of ore from the mine up to the present time is 19,000 tons, which produced 3500 tons of bullion—5.10 tons of ore producing one ton of bullion. The average value of the bullion has been \$200 silver and \$8 gold per ton. One notable fact is worthy of observation: The ore in the lower workings is of much higher grade than near the surface, carrying a larger per cent of both gold and silver. Assays have been made that gave a result of 820 ounces silver and \$175 gold per ton. It is not the intention of the company to run its furnaces until August, as it prefers waiting until the railroad is completed to Owens Lake and thereby secure cheaper rates for the transfer of bullion. Nearly all the ores in the Defiance mineral belt contain gold. To the north of and adjoining the Defiance is the Cuervo mine. A fine-looking ledge of copper has been lying vacant for years but a short distance from Darwin. A location has now been made upon it, and the ore exhibited is of high grade, principally red and black oxides, assaying from 80 to 60 per cent copper.

# Engineering and Mining Journal

Apr. 21, 1883 p. ~~221~~-226

## INYO COUNTY.

IBEX.—The company is building a five-stamp mill. The mines have a favorable prospect.

Apr. 28, 1883 p. 242-243

## INYO COUNTY—BEVERIDGE DISTRICT.

The Inyo *Independent* gives the following items:

A large number of the men are at work on the different mines getting out ore. Two mills are running constantly, and it is said that there is enough ore in sight to keep them running all summer.

## SWANSEA DISTRICT.

A number of men are busy in this district, prospecting and developing claims for smelting ores. The large number of fine prospects already located and partly opened, and the probability that first-class smelting-works will soon be erected on the lake, have given an impetus to mining in that section.

**BROWN MONSTER AND HERSCH MINES.**—These mines are situated in the Inyos, nine miles from Independence. The ore carries gold and silver. The mill has 30 stamps, in six batteries, and the cost of running them by water-power is very small. The Brown Monster is opened by an incline shaft to a depth of nearly 500 feet, and shows a large blue and regular vein of quartz its entire length. The Hersch mine has not been prospected to the extent of the former mine, there being about 100 feet of shaft and tunnel openings; but as far as can be seen, it shows a vein of great strength, with a width of four feet, and all pay-ore. The Hersch ore is of the same general character as the Brown Monster. The situation of these two mines in relation to each other is such that they should be worked and operated by one company.

July 28, 1883 p. 54

## SAN BERNARDINO COUNTY.

The *Calico Print* of July 7th has this to say of the mines along the Atlantic & Pacific division of the Southern Pacific Railroad: The Silver King shows up richer as it goes down. The average milling returns of its ore are now a little over \$100 to the ton. The Garfield, which is down about 130 feet, has doubled in value within the last week. William Raymond, the owner of this fine mine, has made arrangements to have his quartz mill shipped from Nevada, and in two or three months it will be erected and in operation at the Fish Ponds. The ore taken out from the big copper mines in Ord District will soon be passing through a smelter which Osborn & Co. will put up in a few months. The mill for the Alvord gold mine is bought and active operations are beginning on this rich mine, and it will not be long before one hundred stamps will be reducing its ore. The gold mines at Paradise Valley will also be opened up as soon as the hot weather is over. The Lava Beds, which are beginning to attract so much attention on account of their rich showings, will be the scene of lively times this fall. A town will be laid out and a dozen or more good mines will be employing a large number of men, who will support a good-sized town. The owners of the mines bought from the Clark Brothers for \$20,000 will shortly put up a mill, and a branch railroad will be built to the mines, which will be but the commencement of extensive operations. The above enterprises, in connection with the constant operation of the Pioneer, Oriental, Waterman, and Oro Grande quartz mills, will create a large amount of business and traffic in this section of the country.

Aug. 4, 1883 p. 70

## THE CALICO DISTRICT.

**BLACKFOOT.**—Work is progressing on this claim with favorable results. An incline-shaft has been sunk twenty-four feet, in about the center of an open cut some fifty feet in length. It is estimated that the body of ore that is opening is at least 100 feet wide, and it extends to the bottom of the shaft. How extensive the deposit of ore is, can not be definitely determined, but, judging from the work already accomplished, a great many thousand dollars will be extracted before it is exhausted. Ore has been stoped out twenty feet on both sides of the shaft. About ten tons have been shipped to San Francisco, and there are about fifteen tons of ore on the dumps, including 113 sacks. Another milling will be made shortly.

**SNOW BIRD.**—A few days ago, work on the Snow Bird was suspended, but operations will be resumed within a month. This mine, although it was not so rich as was first expected, has been yielding very good returns in bullion to its owners. A number of rich pockets of ore on the surface have been exhausted apparently, but new places have been opened that have yielded well. Recently, in a cut along a vein which is now fifteen feet in length, seven tons of ore were taken from a place broken up by one blast of powder. This ore was taken to the Oriental mill, twenty-one sacks of which assayed 400 ounces, and the rest from 75 to 219 ounces. The last shipment of ore to the Alhambra mill averaged very high—the returns from the first grade of the same, \$520 to the ton and the second grade, \$239. The cut mentioned above is running in a body of ore about fifty feet in length, and twelve or fifteen feet in width. The men are down over six feet, and there is ore on the bottom. This body of ore will no doubt yield many thousand dollars before it is exhausted.

# Engineering and Mining Journal

Aug. 4, 1883 p. 70

## INTO COUNTY.

**MONTEZUMA.**—About ten days ago, a new body of ore, measuring many tons, was opened on the Montezuma mine. It is of fine grade, and gives promise of being as extensive as the body heretofore opened and developed. The new find is situated about 300 feet below the present dump, and dips into the hill as if it ran into and formed a part of the deposit from which the old body of ore is an output. It is exceedingly suggestive in that it indicates the presence of a very extensive deposit throughout the entire hill. Explorations at this point will be vigorously prosecuted, and it is confidently expected that the results will largely increase the extent and value of the property. It is the opinion of several leading experts who have recently examined this property that the Montezuma is a large and permanent mine, and that the wonderful product of Cerro Gordo will be here rivaled. On Monday last, the Furnace site was located and surveyed; a side-track laid out, and at the present time, the grading and track-laying are carried forward to connect the site with the main railroad track. The material and lumber for the furnace are *en route* and will all be on the ground by the first of next week, when work will be begun and prosecuted in earnest. The mine and furnace are owned by the Owens River Mining and Smelting Company. The station and grounds have been named Elma, in honor of the daughter of Mr. W. P. Miller, superintendent of the company.

Aug. 11, 1883 p. 86

## SAN BERNARDINO COUNTY—CALICO DISTRICT.

**GARFIELD.**—Work progresses with good results. The lower tunnel is in about seventy feet. The main shaft will be sunk seventy feet farther, to connect with the tunnel. The south winze connects with the lower tunnel. The bullion returns from this mine are very satisfactory.

**GOBLER.**—The ore taken out is hauled daily to the Albambra mill. The mine is improving in appearance, and is working in an extension of a rich body of ore.

**GOLCONDA.**—The claim is carefully prospected and ore has been found in at least a half-dozen places. In about the center of the claim, a shaft has been sunk fifteen feet, from which some good ore has been taken. About seventy-five tons of low-grade ore that will average \$60 to the ton are on the dump.

**PLUTARCH.**—The lessees are working the east end of the claim. Work has been suspended in the shaft, which is down forty feet. The ore in this claim lies in deposits and also in seams.

Aug. 25, 1883 p. 112

## THE SMELTING OF ARGENTIFEROUS LEAD IN THE FAR WEST.\*

By O. H. Hahn.

**Early Attempts.**—Twenty years ago, the smelting of argentiferous lead ores was an unknown thing in the far West, under which collective name the States and territories west of the Mississippi River are generally known; and although there were persons to be found in the mining districts who were familiar with the methods of smelting current in European countries, the first attempts in this branch of the metallurgical industry were failures, because the appliances used and the grade of the ores to be treated were not adapted to the requirements of the localities of that vast yet sparsely settled stretch of country, then entirely devoid of cheap transportation facilities. Who would ever think nowadays of building a Flintshire or a Carinthian furnace, or a Scotch hearth, or a Mexican "chacuaco" in the wilds of Nevada or in the Rocky Mountains, to smelt lead ores? Yet such was the apparatus

\* From advance-sheets of *The Mineral Resources of the United States*, published by the United States Geological Survey, Department of Industrial Statistics. Albert Williams, Jr., Chief of Department.

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August 25, 1883 p. 112 (cont.)

first resorted to in the beginning of our smelting industry, evidences of which may still be found in the ruins of Galena (Washoe County) and Washington districts, Nevada; in the Patagonia Mountains of Arizona; in Little Cottonwood and Rush Valley, Utah; Cerro Gordo, California; and other localities. It seems that the early smelters did not calculate the cost of their product, or imagined that they were operating on the sea-coast, where fuel, labor, and every thing else are cheapest.

The first smelting-works with an appearance of success sprang up near Helena, Montana, and at Oreana, Nevada, a station on the line of the Central Pacific Railroad, in 1866 or 1867. In both places, the ore treated had a sufficiently high silver tenor to leave a margin over and above the cost of working it and the expense of transportation of the silver, which is no small matter, if we consider that not only had the ores to be smelted, but the resulting bullion had to be calcined and cupelled on the spot to obtain the silver in salable shape. For the lead, or litharge rather, there was no market in those days, all wants being supplied more cheaply by the Missouri and European producers. The year 1869, when the two great Pacific railroads were united to form an uninterrupted line of communication between San Francisco and New York, the great commercial centers of the East and West, gave the signal for the beginning of smelting operations on a more extensive scale than heretofore, and for the gradual expulsion of foreign lead from our markets. Till then, mines producing "cooking ores," as lead ores were scornfully termed at that time, did not find ready purchasers, especially as those ores generally occurred in limestone formations, which were then considered as very unreliable ore producers. But the success of the firm of Buel & Bateman, who had bonded the mines now known under the name of the Eureka Consolidated, and who turned a perfect stream of rich bullion from two small furnaces on to Balbach's refinery at Newark, New Jersey, wrought a sudden change. Lead mines, good, bad, or indifferent—but "true fissure-veins" they must of necessity be—were at a premium, and smelting-works sprang up like wild-fire everywhere. The nucleus of excitement, however, centered about Salt Lake City, whose neighboring mountains were known, from the explorations of the Mormons and the soldiers of General Conner, to teem with lead ores. The comparative poverty of the ores in silver, their siliceous and frequently refractory character, the close competition in their purchase, the bad quality of the fuel and furnace lining, and a good many other things, sharpened the intelligence of the Salt Lake Valley smelters, more so than that of others; and it is to them that we owe the introduction of improvements which led to a more economic handling of the ores. Iron ore and limestone were here used intelligently as fluxing material for the first time; Connellsville coke superseded, at least partially, the miserable charcoal which was made from the light woods of Utah; water-jackets replaced the out-walls as well as the costly fire-brick lining of the furnaces; dust-chambers were erected to save the escaping finest particles of ore; and a number of very complete sampling-works were erected, which opened a liberal market to the miner and afforded the smelter an opportunity to select for purchase such ores as suited his wants. It is true, Eureka, Nevada, has been, so to speak, the cradle of the art of smelting in the West; to Arents we owe the introduction of the siphon tap, the construction of the first large and successful furnaces, and the reintroduction of the boshes in lead furnaces; but beyond these, Eureka does not offer any innovations in the smelting process itself. The same routine is observed there as of old. The principal reasons for this conservatism are, first, the docile character of the predominant ore (of Ruby Hill), which requires little or no flux to give economically satisfactory results; and, secondly, the fact that mines and smelters of the leading companies are managed by the same person, generally a miner or a business man who is reluctant on general principles to adopt improvements of a scientific nature.

(article continues)

Engineering and Mining Journal

Sept. 1, 1883 p-134

INYO COUNTY.

**DEFIANCE.**—During the past three months, the main incline shaft has been sunk 194 feet, making a present depth of 288 feet. The work is in a ledge carrying frequent bunches of pay ore. Two shifts are kept at work, and the shaft will be continued to a depth of 700 feet. The late run of the furnace was stopped until a supply of "wet" or lead ores can be extracted, with which to smelt about 100 tons of "dry," rich silver ores remaining on the dump.

SAN BERNARDINO COUNTY.

**BULLION.**—Work was begun on this quartz mine about two months ago, and has been steadily prosecuted. Developments at the north end of the claim showed the ore to be very low grade, and hence work was suspended here and continued at the southeastern end of the claim. A shaft was sunk to a depth of 50 feet, which passed through a number of small pockets of very rich ore, but the average ore is low grade. While prospecting around the claim, a rich piece of chloride was discovered near the place where work was first begun at the northern end. Work will be temporarily suspended in the new shaft, for the purpose of developing the new strike.

**KING.**—Between the third and fourth levels, a rich strike has been made. A vein of ore about two and a half feet in width has been uncovered, and assays made show good results.

**TAGGART.**—Operations continue with good results.

Sept. 15, 1883 p-170

INYO COUNTY.

**LASKY MILL.**—Of late, this mill, at Beveridge, has not been running very steadily, and has been crushing only fifteen hours out of the twenty-four. Since the 22d of July, it has reduced 80 tons of Keynot ore which resulted in 840 ounces of gold at \$14, amounting to \$4760. Twenty-one tons of ore from the True Business mine were also crushed, which yielded 75 ounces of gold, worth \$15 per ounce, amounting to \$1125. The works are now in steady operation, and there is plenty of ore on hand.

Oct. 27, 1883 p-266

INYO COUNTY—SWANSEA DISTRICT.

**INDIANA.**—It is stated that ten tons of silver ore from this mine were recently sold in San Francisco for \$2200 net. The ore will go to Europe for reduction.

Nov. 3, 1883 p. 283

INYO COUNTY.

**ARGUS RANGE SILVER MINING COMPANY.**—Thirty tons of ore produced 137 ounces of bullion, worth about \$3200. The mill is now shut down for want of water. It is stated that the company will soon place enough funds at the disposal of the superintendent to pay off all indebtedness.

**CHRYSOPOLIS.**—The machinery for a five-stamp mill is on the road, and will be put in place as soon as the work is enough advanced.

SAN DIEGO COUNTY—POOR MAN'S DISTRICT.

This comparatively new district was discovered in 1864, and worked in a small way for galena. The mines were abandoned, however, and in 1881 contractors began assessment-work on the Luz mine. Re-location of the abandoned claims was made, and in 1882 other claims were located.

**AMELIA.**—This claim has been opened to a depth of 180 feet by shaft on the foot-wall, showing ore from the surface and at intervals to the floor of the shaft, from which level a cross-cut of 40 feet has been run, tapping the hanging-wall. The chloride streak, four feet in width, is here uncovered, and chloride of the green horn-silver variety found in quantity. From the surface, a shaft, now at a depth of 40 feet, is pushed on the hanging-wall, to connect with the 180-foot cross-cut, and the rock extracted is pay-ore. Negotiations are pending for the purchase of this mine by California capitalists.

**SAND-STORM.**—A strike has been made in two feet of solid argentiferous galena, white and yellow carbonate. Chloride also is found on this location, as also on the Nameless, the extension of the Sand-Storm.

Engineering and Mining Journal

Dec. 1, 1883 p. 345

KERN COUNTY.

SUMNER.—A recent fire has done considerable damage to the property. The latest dispatches from Callente, where the mine is located, state that the fire is in the upper and 160-foot levels, and that it is impossible to say how far the flames are progressing or to estimate the damage. The works are situated at Kernville, forty miles distant, and cost from \$750,000 to \$1,000,000. The origin of the fire is unknown. There is no insurance on the property.

Dec. 8, 1883 p. 358

INYO COUNTY.

SWANSEA.—The smelter is about completed, and was to blow in December 1st. The new furnace is one of Rankin & Brayton's best thirty-ton two-section water-jackets, with the new improvements and appliances. The new works are built about one mile east of the old Swansea works, and on the toll-road from Swansea to Cerro Gordo. The location is convenient, and elevated sufficiently to give plenty of fall for ore to the feeding or charging-floor, and also for a slag-dump. Water is furnished by the old well at Swansea, which gives a permanent and unfailing supply, and is forced up to the new works by a powerful steam-pump. The dumps at the furnace are crowded with smelting ores and rich slags from the old Swansea works. The company mines at Cerro Gordo are worked with encouraging results, and are producing ore in considerable quantities. The company is said to be financially sound, and the new works will start up without one dollar of indebtedness.

Dec. 22, 1883 p. 386

INYO COUNTY.

MAXIM.—This company, which is said to be composed of New York capitalists, some two months ago purchased the Arasta mine, which has since been worked. The *Inyo Independent* says that the mine was worked to a limited extent some seventeen years ago. The shaft which is now sinking has attained a depth of forty feet, and a three-foot ledge of rich ore has been struck. The necessary machinery has been bought, and is now on its way to the mine.

MONO COUNTY.

MAY LUNDY.—Considerable activity prevails in and about this mine, and the force is engaged in extracting ore. The mill is running full capacity, with over 700 tons of ore in the yard. Nothing positive has yet been learned of the rumored sale of this mine to English capitalists.

# Engineering and Mining Journal

April 19, 1884 p. 300-301

## INYO COUNTY.

**INDIAN QUEEN.**—This mine has been worked all winter. New ground is opening by a long, deep tunnel, and preparations are making to start the mill.

**KEARSARGE.**—The mines and the old 10-stamp mill have been bonded for a

large amount to P. S. Tulley, who is the agent for some wealthy Western capitalists. Work on the mines will be commenced soon.

**MONTEZUMA.**—Arrangements have been made to move this old furnace across the mountains to Antelope Springs, Deep Spring Valley, where it will be put to work on ores of that section.

May 10, 1884 p. 355

## SAN BERNARDINO COUNTY—PROVIDENCE DISTRICT.

The prospects of the district are reported to be steadily improving. The Mozart, Lucknow, Mineral Point, the Belle McGilory, the Treasury and Morning Star, and other locations are looking well for the amount of work done.

**BONANZA KING.**—During the past month, two new strikes, showing large bodies of rich ore, have been made in the mine. The company's mill is running steadily.

**KOBINOOR.**—This mine adjoins the Bonanza King. It has a shaft down about 57 feet, having run through a vein of fine ore that dips to the east. The company has not yet cross-cut for the ledge.

May 31, 1884 p. 412

## SAN BERNARDINO COUNTY.

**BONANZA KING CONSOLIDATED.**—The superintendent, under date of May 18th, writes as follows: In sinking on the ore from the northeast end of the fourth intermediate level, I find that it is making rapidly to the southeast as I gain in depth. Therefore we shall have to drive the east cross-cut fifth level north farther to the south and east before intersecting the ore on this level. The ore-body in the uprise above this winze is all of high grade, and continuous in size with marked uniformity. To-day, we cut into a good showing of ore in the west cross-cut, sixth level north. The winze opposite the shaft fifth level is 20 feet deep. The ore-vein in the bottom is small. Bullion shipments for April amounted to \$47,552.55; so far this month, \$19,182.37.

May 31, 1884 p. 412

## INYO COUNTY—WILD ROSE DISTRICT.

This district lies about 23 miles east of Lookout, in the southern end of the county. About seven years ago, the Argonaut, Juniata, Blue Belle, Blizzard, and Virgin mines were located. Thousands of dollars and years of hard labor have been spent in developing these properties. The Juniata has a six-foot ledge that gives an average assay of \$50 per ton. There are 100 tons of assorted ore now on the dump that will yield \$100 per ton. The Argonaut joins the Juniata on the south, and has a ledge of equal size and richness. The Blue Belle is situated about six miles distant from the former mines. It has a well-defined 80-foot ledge, and it is claimed the ore will average \$80 per ton. There are on the Blue Belle dump over 100 tons of this character of ore. The Blizzard and Virgin are close to the Blue Belle. The former claim has a four-foot ledge of fine horn-silver ore. There is plenty of wood and water close at hand, and the mines are

easily reached by good roads from Panamint and Death Valley. At present, enough ore has been developed to keep a 10-stamp mill constantly at work for many years.

June 7, 1884 p. 428

## INYO COUNTY—DEEP SPRINGS DISTRICT.

Prospects in this region are said to be encouraging. The Greely mill is about ready to start up. The Montezuma furnace material is all on its new site at Antelope Springs, where it is to be re-erected immediately.

June 28, 1884 p. 486

## INYO COUNTY.

**MAXIM.**—This company works the old Chase and other mines. The five-stamp mill has just started up.

Engineering and Mining Journal  
Jan. 5, 1884 p. 8

INYO COUNTY.

POTOM.—The developments in this tunnel on the deposit uncovered some two months since are progressing favorably. A recent examination made at the end of the thirty-foot drift running on the main lode disclosed a body of fine ore. An incline shaft has been sunk on the foot-wall at this point to a depth of twenty feet, in which the ore continues to show well, with every indication that at this point begins the pay-chute, and, unless the ground should change radically from its present nature, there must exist in this vicinity a large and valuable body of ore. A force of men is to be put to work at once to open up and prepare the ground for the extraction and shipment of ore.

SWANSEA.—The furnace fired up on its initial run recently and ran successfully twenty-four hours, when, by the breaking of a pump, it was compelled to blow down. As soon as repairs are made, the furnace will be again started. During the short run of the furnace, forty bars of bullion were run out.

Feb. 16, 1884 p. 128

INYO COUNTY.

The Inyo Independent reports that the parties who came from New York recently, Messrs. Elliot and Stevens, to examine the Panamint properties, report favorably, and it is the intention to erect a new mill and begin operations at an early day at this long suspended camp.

It is reported from reliable parties that the Sterling or Silva mine, below Darwin, has been sold to parties who will at once begin the extraction and shipment of ore.

Reports from Cerro Gordo are, that the body of ore in the Ygnacio has been cut, with the most promising prospect of a continuance of high-grade ore.

A recent strike in the Defiance mine at Darwin shows the old mine to be still "a live proposition." A large body of high-grade ore has been uncovered, and, if reports are not colored too highly, the Defiance will, at an early day, come again to the front.

Feb. 23, 1884 p. 146

INYO COUNTY.

DEFIANCE.—It is rumored that a 20-foot vein of good ore has been struck in this mine.

ELNA.—This furnace is again in full blast.

March, 15, 1884 p. 204

HOMER MINING DISTRICT.

C. A. Gregory has brought suit in equity against G. W. Butterfield, in the United States Circuit Court at San Francisco, to obtain a decree that twelve mines in this district, in which are included some of the most valuable mines of the district, are held in trust for the plaintiff, he having entered into an agreement in Chicago, in May, 1883, by which agreement he was to have an interest in said mines.

SAN BERNARDINO COUNTY.

BONANZA KING CONSOLIDATED.—The affairs of this company are attracting considerable attention. The stock has recently been listed at the Mining Exchange in this city, and dividends have been paid regularly for some months past. The official reports from the mine state that the main shaft and development-work throughout are pushed forward with full force. The ore stopes are all in good condition. Five bars of bullion, valued at \$8777.28, have just been shipped, and by the next opportunity a further lot will follow to close the month's product.

March 29, 1884 p. 240

INYO COUNTY.

The late storm has interfered with the mining interests of this county very materially. At Cerro Gordo, the storm was so severe that work on the mines had to be suspended, and much damage was done to other property. The snow on the summit prevents ingress or egress to Deep Springs, Cottonwood Creek, Beveridge, and other districts, thereby stopping a great many mines from working, as no supplies can be got to the mines.

SAN BERNARDINO COUNTY.

BONANZA KING.—A telegram from the superintendent states that the west cross cut opposite the shaft on the fifth level has cut a vein of high-grade ore from winze fourth intermediate slope; the northeast end of the same level has developed an extensive body of ore. Four bars of bullion, valued at \$8100, have been shipped.

April 5, 1884 p. 260

SAN BERNARDINO COUNTY.

BONANZA KING.—Reports state that recently some very rich developments have been made in some unexpected places in the mine. The lowest working is at the depth of 547 feet, and the appearance of the ore at that depth is improving. A 12-foot vein of considerable richness has been discovered in the fourth level back of what was considered the foot-wall of the ore zone. The mill has been running regularly.

MODOC.—The different mines of the company are worked, and ore is hauled to the furnace, which was to have started up April 2d, for a run of at least forty days.

# Engineering and Mining Journal

July 19, 1884 p. 44

## SAN BERNARDINO COUNTY.

**BONANZA KING CONSOLIDATED.**—Reports dated June 30th state that work has been resumed in the east and west cross-cuts on the 7th level and also in the northeast cross-cut on the 6th level. The west cross-cut opposite the shaft is 76 feet in length. The vein in the face of this drift has opened out into a large cave of loose ground intermixed with bunches of high-grade ore. There is a slight improvement in the west cross-cut 6th level north, and it is expected to cut the second chimney of ore in the next few feet. Sinking is going on in a fair showing of ore from the connection in southeast drift 5th level north. The uprise from the 4th level has improved. The formation has a net-work of small seams of rich ore through it, which makes a fair grade of milling material mixed between the walls. On the first, development work will go forward with a full force of miners from San Francisco.

Aug. 2, 1884 p. 77

In the Menifee District, the plant for a large 40-stamp quartz-mill has been ordered, and the Menifee Mining Company is making extensive preparations to develop its mines. For the present, the Menifee ore will be crushed at the San Jacinto mill.

The new mill now erecting at Sweetwater by A. Sayers & Co. will probably be in running order some time in August. Mr. Kilpatrick, of the Bodie Foundry, has charge of the construction.

Aug. 9, 1884 p. 93

## INYO COUNTY.

**FREEBORN CAÑON.**—M. G. Nixon has bought the Freeborn Cañon mill and mines, and expects to have a force of men at work at an early day.

Aug. 16, 1884 p. 109

## INYO COUNTY.

**DEFIANCE FURNACE.**—At the Defiance furnace, six tons of bullion are turned out daily, being a yield of twenty per cent from the ore smelted. The bullion is all high grade. The mine and furnace are the property of Hon. P. Reddy.

**MODOCK FURNACE.**—The Modock mine and furnace at Lookout are turning out bullion steadily. There is a large quantity of bullion at the railroad ready for transportation to San Francisco.

**POLITA.**—William Irwin and Tom Luther, formerly of Bodie, have purchased a three-fifths interest in the famous Polita mine, opposite Bishop Creek, and have also rented the Hawley mill, where they will crush several hundred tons of ore, and ascertain the best method of reducing it. They will then probably put up a mill near the mine. The C. & C. Railroad Company is putting in a side-track at a convenient point for the transportation of ore, and will also probably build a side-track to the Hawley mill.

Aug. 30, 1884 p. 146

**DEFIANCE.**—The *Inyo Independent* says: A run of eight days was completed at the Defiance furnace at the end of last week. The result netted forty tons of bullion, worth \$12,000. The mine in connection with the furnace has already produced in bullion \$1,150,000. Before the building of the Carson & Colorado Railroad, the cost of getting the bullion to San Francisco was \$45 a ton; now, it is but \$24. Last winter, a large body of ore was found in the mine. It is rich in silver, but does not contain lead enough to smelt. For some time past, work has been pushed to reach another body of ore that is known to contain sixty per cent of lead; it also contains about sixty ounces of silver per ton. Mixed with the higher grade ore, this will make a good working combination. The main ledge in the mine is sixty feet wide, and has been opened 500 feet on its length, and 300 feet deep. The cost of reducing the ores is \$10 a ton. On the dump at the mine, are about 30,000 tons of ore, the assay value of which is \$8 per ton. The superintendent of the works, Mr. J. S. Gorman, has gone to San Francisco in search of some method of concentrating this ore by dry process.

Sept. 20, 1884 p. 198

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—During the past three months, the greater portion of the working force has been employed on dead-work. The work to the northwest has developed no very large bodies, but has resulted in furnishing a constant supply of ore, and it is expected to uncover more extensive deposits in this section of the mine. The mill is running finely with most favorable results.

# Engineering and Mining Journal

Sept. 20, 1884 p. 198

## INYO COUNTY.

**ELNA.**—An important addition has been made to the works at the Elna furnace by the erection of a refinery, now almost completed. Hitherto, the bullion was all shipped to San Francisco, thus adding largely to the expense for freight, and taking away lead that was needed to mix with ore in the furnace. Now the lead will be extracted at home, and will help largely to increase the amount of ore that may be worked. The full capacity of the furnace is thirty tons a day, and it will be soon working that quantity. The company can easily supply the furnace fully from its own mine.

**GREENLY.**—Additional machinery and appliances have been purchased for saving the gold at the Greenly mill, Deep Spring District. The mill has been running since June last.

**McMURRAY.**—Some work is doing toward completing this furnace.

## MONO COUNTY.

**MAY LUNDY.**—The company's indebtedness has not yet been settled, and nothing definite has been learned as to what will be done toward arranging the affairs.

Oct. 4, 1884 p. 234

## SAN BERNARDINO COUNTY.

**SILVER KING.**—The underground timbering of this mine at Calico caught fire September 18th. The fire caught in the Cunningham shaft, and communicated to all parts of the mine. There being no water at hand, no attempt was made to smother the flames.

Oct. 11, 1884 p. 255

## HOMER DISTRICT.

**BRYANT.**—Work has been suspended.

**MAY LUNDY.**—The bills contracted on behalf of the mine have been settled. The owners have paid 70 per cent, and agreed to pay the balance as soon as the first payment is made on the purchase price of the mine by the May Lundy Company, Limited, of London, which it is believed will soon be made. This arrangement proved satisfactory to all the creditors, and the liens filed were withdrawn and the attachments on the property released. Nothing is yet known of the intentions of the new company, but it is generally believed that possession will be taken soon, and that work will be resumed.

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—In all the new works in the lower levels, the prospects are promising. The many places now opened and worked are all producing ore. A full complement of men for all work is now at hand. At the mill, every thing is going well.

Nov. 22, 1884 p. 351

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—The weekly report of the superintendent shows that a drift has been started on vein No. 3 on the seventh level. The formation is loose, with a good grade of ore. The east cross-cut on the sixth level has cut into a fair showing of ore. The east winze from the fifth level has this same vein of ore in the bottom. The south winze on the same level is again showing a handsome body of ore in the bottom. We have cut into ore in the north drift next the west wall on the fifth level. We have started a cut to the west in the ore-vein in the north drift on the fourth level, and shall start to sink a winze on the ore as soon as we have sufficient room. The winze on the tunnel level continues in the same body of ore. The stopes throughout the mine are producing well. The shaft is well under headway, and will be pushed with three shifts.

Dec. 6, 1884 p. 383

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—In the third, fourth, and fifth levels, the stopes are looking well, and in the sixth and seventh levels, where the new development on the ore-bodies has been made during the past month, the ore-bodies are gaining in size. In the seventh level winze, the ore is over four feet in width. The main shaft is down below the seventh level between 40 and 50 feet, and good progress is made.

**OCCIDENTAL.**—The shaft is down about 100 feet, and penetrates large deposits of rich ore. This mine will soon be the scene of extensive operations.

**SUE.**—A large amount of horn-silver is produced.

Dec. 13, 1884 p. 399

## SAN BERNARDINO COUNTY.

**SUE.**—This mine is attracting attention on account of the strikes recently made. The developments consist, besides the tunnel, of six or eight openings on the ledge, which extends the entire length of the mine. The ledge uncovered by these openings is from four to six feet wide. It contains spar, some base, but mostly free-milling ore.

SAN BERNARDINO COUNTY.

BARBER.—The mill will soon be ready for operations.  
TIGGART.—The mine has been bonded with a working lease

SAN DIEGO COUNTY.

STONEWALL.—The mine has been sold for \$7500. Pumping machinery is erecting to pump out the mine. A ten-stamp mill will also be built.  
HUBBARD.—The mill is running on ore sorted out of the waste-dump, and pays from \$10 to \$12 a ton.

Jan. 3, 1885 p. 11

SAN BERNARDINO COUNTY.

GOLCONDA.—It is reported that matters have been arranged quite satisfactorily, and that there is a prospect of resuming operations at these mines on a large scale.

ORO GRANDE.—The company advertises in San Francisco papers for narrow-gauge rails and rolling material. It is expected, according to this, that a railroad is to be built between Daggett and Calico.

SILVER ODESSA.—A rich strike has been made in this mine.

SNOW BIRD.—At the recent sheriff's sale, this mine was purchased by E. E. Fink & Co., who will begin operations at once.

Jan. 10, 1885 p. 27

SAN BERNARDINO COUNTY.

BELLE MCGILROY.—It is stated that there is enough ore on the various dumps and in sight to justify the owners in putting up reduction-works.

BONANZA KING.—The mine is opened to a depth of about 600 feet. It is intended to increase the mill's capacity and to develop part of the company's claim.

Jan. 17, 1885 p. 42-43

INYO COUNTY.

CERRO GORDO.—Thomas C. Boland has leased this mining property, including mines and furnace. Work will begin immediately.

CLIFF.—Work has been resumed at this mine, which has been idle for a year.

SAN BERNARDINO COUNTY.

ALHAMBRA CONSOLIDATED.—Bullion shipped from the company's ten-stamp mill during the year just closed was valued at \$387,000. The mines at present worked are the Bismarck, Cuba, Odessa, and Richmond. During the year, the following mines, located in East Calico, were purchased by the company: Cuba, Silveretta, Richmond, Hawkeye, and Dunderberg.

ORO GRANDE.—The gross value of bullion produced during the past year amounted to \$450,000. The mine is developed to a depth of 550 feet. A narrow-gauge railroad from Calico to the mill and thence to Daggett is to be built.

CALIFORNIA.

It is stated that coal of the best quality costs at Daggett, San Bernardino County, from \$16 to \$20 a ton. Coos Bay coal costs there \$16 a ton, and Nogales coal \$14. By many persons, the Nogales coal is considered as good for steam generation and general purposes as the Coos Bay, and efforts are making to procure such reduction of freight on the Nogales coal as to secure its landing at Daggett at \$8 a ton.

SAN BERNARDINO COUNTY.

BARBER MILLING COMPANY.—The first shipment of bullion was made January 20th. The ten-stamp mill has just been completed and is furnished with Bass's patent pans and smelters.

Feb. 7, 1885 p. 93

SAN BERNARDINO COUNTY—CALICO DISTRICT.

There is a likelihood of some interesting litigation over the boundaries of some of the Calico mines since their value has been demonstrated by development. Several lawsuits are on the tapis.

SUE.—The tunnel at the foot of the falls, which has been steadily pushed ahead on two wings, during the past two months, is in 220 feet on one course, and has struck a body of good ore. This tunnel is not less than 1000 feet below the main shaft on the apex of the mountain, which is over 125 feet deep in first-class ore, and there are surface indications where ore has been taken out the whole 1500 feet length of the ledge.

Feb. 24, 1885 p. 111

INYO COUNTY.

INYO CONSOLIDATED.—A judgment of \$7546 has been filed in this city against the company by F. J. Wall.

Feb. 21, 1885 p. 127

SAN BERNARDINO COUNTY.

BISMARCK.—The shaft has attained over 100 feet. A long tramway and chute and a large ore-bin are building at the south end. Preparations are making to develop the mine on a large scale.

BONANZA KING CONSOLIDATED.—It is reported that new hoisting-works are to be erected preparatory to more extensive operations for developing the ore-body believed to be in the lower levels of the mine.

GARFIELD.—Several tunnels have been driven, the longest of which is 1300 feet in length. The lowest depth is 460 feet, from which point rich ore is taken.

Feb. 28, 1885 p. 145

INYO COUNTY.

MODOC CONSOLIDATED.—The superintendent reports, February 14th, that the furnaces have been shut down for want of coal. Five days' run produced 62,718 pounds of bullion, value as follows, namely: Silver, ounces per ton, 16 3/4; gold, per ton, \$39.68; total value of bullion, \$10,954.96. Resumed sinking in the South Lookout mine; average width of ledge at bottom of winze, three feet; the ore contains 36 per cent lead, 69 ounces silver, and \$12 gold per ton.

SAN BERNARDINO COUNTY.

SUE.—The owners have disposed of one half of their interest in the mine. The quartz mill at Resting Springs is to be removed to the mine and increased to a capacity of fifteen stamps, and is to be used in crushing the ore from the Sue and other mines of the company.

# Engineering and Mining Journal

March 14, 1885 p. 179

## SAN BERNARDINO COUNTY.

**BIG HORN ANDER.**—It is reported that this mine, at West Calico, has been sold for \$5000.

**LONE STAR.**—Work on this group has been progressing satisfactorily for several months. The shaft has attained a depth of 70 feet. It is said that there are in the group large bodies of low-grade ore that will pay well to mill, and enough high-grade can be taken out daily to operate the mine with a profit.

March 28, 1885 p. 214

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—It is reported that the company has shut down the mines and mill.

Apr. 4, 1885 p. 231

## SAN BERNARDINO COUNTY.

It is stated that the Belle McGillroy and Mozart group of mines have been bonded to a Pennsylvania syndicate represented at Providence by Mr. A. G. Hoyt.

**BONANZA KING.**—Operations have been resumed. The miners now receive \$3 a day. The mill will start up again as soon as there is sufficient ore ahead. The president and some of the principal owners have visited the mine and arranged for the more complete development of the properties.

Apr. 11, 1885 p. 250

## SAN BERNARDINO COUNTY.

**CALICO WATER-WORKS COMPANY.**—This company has been organized with a capital stock of \$40,000, divided into four thousand shares of the par value of \$10 each. The object is to furnish water to the people of Calico and vicinity for domestic uses and for mining and milling purposes. The directors for the first year are D. Bahten, C. B. Stocking, E. E. Stacy, Isaac Norton, and James Miller.

May 2, 1885 p. 302

**MODOC CONSOLIDATED.**—Work continues at the mine with satisfactory results. The furnace will be started on 10th of May, or before, if coal is delivered on time.

May 9, 1885 p. 320

**BONANZA KING.**—According to the *San Francisco News Letter*, Colonel Ewing and A. K. P. Harmon have sold the Bonanza King to Messrs. Kelly & Warburton, of Arizona, who in turn have bonded the mine to G. de la Bouglise, a French mining engineer, for \$100,000. The intention is to dispose of the property in France.

**ALVORD.**—The work in the mine is progressing, and the ore is hauled to the mill, which is now running smoothly.

**CALICO MINING AND REDUCTION COMPANY.**—This company, which has just been incorporated, is erecting a five-stamp mill in the western portion of Daggett. It is said that the company will work a lower grade of ore than heretofore handled in this camp.

**GÖBLER.**—Work has been resumed in this mine, adjoining the Silver Odessa, after a suspension of operations for about a year. A tunnel on the east side is driven in, to cross-cut the ledge. It is in 60 feet, and the indications for striking a body of ore are good.

May 16, 1885 p. 339

## SAN BERNARDINO COUNTY.

**WATERMAN.**—Waterman & Porter's mill, at Waterman station, is running night and day on ore from this

mine, and also on custom ore. The returns from the mill are said to average \$60,000 a month. The firm offers the highest cash price for free-milling ores, on the cars at Daggett or delivered at its mill. Ores will be received in bulk or in sacks. It has made special arrangements for the purchase or reduction of large lots of from 100 to 5000 tons.

May 23, 1885 p. 358

## INYO COUNTY.

**MODOCK CONSOLIDATED.**—The furnace was to start on the 10th inst. The mine is said to be looking well.

June 6, 1885 p. 392

## SAN BERNARDINO COUNTY.

**BONANZA KING.**—A five-foot vein of ore has been struck on the sixth level. A contract is let to sink the main shaft 100 feet from the eighth to the ninth level. The mill will resume work soon.

**BIDWELL.**—This mill at Ivanpah is about starting up on ore from the old Alps mine and the Lizzie Bullock.

**CAMBRIA.**—The owners of this mine have leased the old Ivanpah Consolidated mill at Ivanpah, and will at once start it up on Cambria ore.

**KERR.**—Connection has been made at the depth of about 100 feet, showing a large body of mineral.

**McFARLANE.**—Part of these mines at Ivanpah may be leased.

**MOZART.**—On the Mineral Point mine of this group, they are sinking and running on the ledge a tunnel that will make a depth of about 200 feet when in another 50 feet. They struck in the face of the tunnel about 6 inches of high-grade ore, with indications of widening.

June 13, 1885 p. 411

## SAN BERNARDINO COUNTY.

**BELLE MCGILROY.**—A connection has been made that opens up a large body of high-grade ore. The ore in sight makes the claim very valuable. Large bodies of ore can now be stoped at small cost.

**KING.**—On or about the 1st of the month, the stopes were to be discontinued and the force reduced by nearly one half, to permit the shipment and reduction of the ore-dump. Until it is entirely disposed of, no ore will be broken in the mine, and prospecting the lower levels will be carried on more vigorously than ever. The ore-bodies recently encountered there indicate larger chambers as depth increases.

## SAN DIEGO COUNTY.

**RAVITT.**—It is reported that John W. Mackay has bonded this gold mine in the Cargo Muchacho District, near the line of the Southern Pacific Railroad.

# Engineering and Mining Journal

June 20, 1885 p. 428

## SAN BERNARDINO COUNTY.

**BISMARCK.**—The mine continues to improve as depth is attained. A shaft has been sunk 100 feet, and at that depth cross-cutting on the ledge is progressing in the midst of good paying ore. From 8 to 12 tons of ore are taken to the mill daily that yields on an average about \$75 to the ton.

**BONANZA KING.**—The company is taking out some rich ore. Several contracts on the lower levels have been let, and preparations are making to put in new hoisting-works with cages.

**ORO GRANDE.**—The Waterloo mine is looking well. A large quantity of low-grade ore is in sight that will mill at least \$35 to the ton on an average, while chimneys of high-grade ore are opening. At the Snow Bird, the work has been confined principally to the surface, but recently a shaft and a tunnel were started, which is the first effort to open the mine in good shape, and to search for ore at a considerable depth. Both mines belong to the Oro Grande Company, and the ore is taken to its mill near Daggett.

Engineering and Mining Journal  
Sept. 5, 1885 p. 168

INYO COUNTY.

CASEY.—The owners are doing a great deal of exploration and making experiments for determining the process by which the ore must be worked. One vein of ore in the mine is sixteen feet wide, another is four feet, and there are several smaller veins. The two large veins are low-grade ore; the smaller veins are rich. If the experiments prove satisfactory, it is understood that a mill will be built immediately.

SAN BERNARDINO COUNTY.

BONANZA KING CONSOLIDATED.—Wilson Waddingham has been at Providence with several insurance officers, who will estimate the loss sustained by the recent burning of the mill, and settle up the amount of insurance on the property. The destruction of the mill, it is said, has entailed a serious loss upon the company. A new mill will be built at once, and in a few months the mine will again be in full operation.

Oct. 3, 1885 p. 244

BONANZA KING.—The *Calico Print* says: Since the burning of this company's mill in August, almost a complete shut-down has taken place. The insurance on the property has been adjusted and paid, the President, and Wilson Waddingham, has gone East to New York, to see what his company is going to do. A new mill without doubt will be erected during the winter, perhaps of greater capacity than the last. When the debris of the old mill is cleared up, every thing will be shut down to await the action of the company. The mine has never had more ore in sight than at present, and especially at the lower levels, the 7th and the 8th.

Nov. 14, 1885 p. 342

INYO COUNTY.

A very fine quality of marble is quarried at Swansea. It is of snowy whiteness, and takes a beautiful polish. Some blocks that weigh thirty tons are already quarried. The extent of the quarry is not yet known.

SAN BERNARDINO COUNTY.

ODESSA MILL AND MINING COMPANY.—The Alhambra Consolidated Mining Company and the Odessa Mining Company have been consolidated, and the business of these companies will be conducted under the name of the Odessa Mill and Mining Company, E. J. Murray, Superintendent, at Hawley's. The company carries on operations in the Calico District.

Nov. 20, 1885 p. 374

SAN BERNARDINO COUNTY.

ORO GRANDE.—The company's mill at Oro Grande has been leased to Denver capitalists for six months, with the privilege of purchasing.

Dec. 12, 1885 p. 405

INYO COUNTY.

INYO MARBLE COMPANY.—This company has been organized under the laws of Nevada, with a capital stock of \$500,000. The principal place of business is Carson City, and the trustees and incorporators are H. M. Yerington, D. A. Bender, and Israel Luca. The first shipment of marble from Owens Lake has been made. It is said to be of good quality and pure white.

Engineering and Mining Journal  
July 4, 1885 p. 9

SAN BERNARDINO COUNTY.

**BONANZA KING.**—The mill has started up, and every thing works satisfactorily.

**ORO GRANDE.**—At the annual meeting, held at Calico, the following officers were elected: C. M. Sanger, President; D. Bahten, Vice-President; C. T. Bradley, Treasurer; and G. Bahten, Secretary. The shipments of bullion for the fifteen months ended May 31st aggregate 378 bars, of the gross value of \$702,650. This company works the Silver King mine. Considerable dead-work is going on in the mine, which is easily worked and requires but little timbering, and has reached a depth of about 600 feet.

July 11, 1885 p. 28

INYO COUNTY.

**MAXIM.**—On the 26th ult., Messrs. Harris & Rhine took possession of the Maxim mill. It is claimed that the sale of the property to William Stansfield last December was not based upon sufficient authority, the notice under which the judgment of sale was obtained not having been served upon parties who were representatives of the real owners. For the purchase money invested by Mr. Stansfield, he will doubtless fall back upon the seller.

**GAVILAN.**—The work of development is pushed vigorously. The ore will be shipped to San Francisco for treatment.

July 18, 1885 p. 45

SAN DIEGO COUNTY.

**HUBBARD.**—The company has leased its dumps, and was to begin work in the mine at the beginning of this month.

**READY RELIEF.**—The mine is working steadily, and gives the owners good returns.

**STONEWALL.**—The weekly production amounts to about \$1500. A large body of ore was recently struck. The ore averages about \$20 a ton.

July 25, 1885 p. 63

SAN BERNARDINO COUNTY.

**CALICO MINING AND REDUCTION COMPANY.**—The new five-stamp quartz mill was set in operation for the first time on the 4th inst. The mill is a few yards above the Daggett Sampling-Works, and the stamps of the former are operated by means of the engine contained in the latter.

August 1, 1885 p. 81

SAN BERNARDINO COUNTY.

**ALVORD.**—A recent fire on this property damaged the mine to such an extent that operations had to be suspended for an indefinite period. The mill has also been closed, owing to a lack of water.

August 8, 1885 p. 97

INYO COUNTY.

**MAXIM.**—The Duncan concentrators in this mill, having successfully worked the galena ores for which they were purchased, have lately worked about 100 tons of gold-bearing sulphuret ore, to test their value on that kind of ore. The success was greater than with the galena ore. The working of the sulphurets is so complete that the yield of gold is very nearly equal to the assay value of the ore. Mr. Stansfield, the superintendent, is fully satisfied with the Duncan concentrator. All varieties of gold and silver ores, found in Inyo County can be successfully worked.

August 8, 1885 p. 97

SAN BERNARDINO COUNTY.

**CALICO MINING AND REDUCTION COMPANY.**—The mill is said to be a success. Since starting on the 4th ult., \$10,000 of bullion have been shipped.

August 15, 1885 p. 115

SAN FRANCISCO COUNTY.

**SELBY SMELTING AND REFINING COMPANY.**—The original works of this company were erected in 1867 at the foot of Hyde street, North Beach, San Francisco, to furnish the shot and lead-works with pig-lead for use in their various manufactures. Since that time, the business has been extended and now embraces the smelting of gold, silver, and lead ores, and sulphurets, refining lead bullion, manufacturing blue-stone and copperas, and parting and refining gold and silver. More room and better railroad facilities being necessitated by the increased business, the company last fall secured its desirable property on San Pablo Bay, near Vallejo junction, where extensive works are now erecting, and which will be in operation soon. The works will have the latest and most approved facilities for quickly and economically handling ores and bullion in large quantities; and as the railroad passes on one side, and the company owns deep-water frontage on the other, coal can be received directly from ships' side, and ores directly from the cars without the expense of reshipment or hauling. There is also sufficient land to greatly extend the works when increased business demands it. In addition to the smelting and refining business, and in connection with the shot-ower, the company is erecting in the vicinity of the smelting-works a factory for the manufacture of shot-gun cartridges under the Chamberlain patents, having secured the sole right to the use of these machines on the Pacific coast.

Aug. 22, 1885 p. 132

SAN BERNARDINO COUNTY.

**BONANZA KING.**—The ten-stamp mill was burned to the ground July 31st. The fire originated from the dry-kiln, a spark having flown out of the furnace-door igniting some cedar bark that caught the east side of the building; the building, being very dry, took the flames at once. It is stated that this mill with its surroundings cost the company over \$100,000. It is thought that the work of erecting a new mill will begin soon, and that its capacity will be greater than the one destroyed. Mr. Wilson Waddingham, of New York City, connected with this company, has arrived at Providence.

Aug. 29, 1885 p. 150-150

INYO COUNTY.

**DEFIANCE.**—A contract has been let to sink the shaft fifty feet deeper. The present depth is 106 feet.

**MINETTA.**—The mine has been leased.

**MODOOK CONSOLIDATED.**—Eighty-three thousand pounds of ore gave \$12,640. Work has been resumed. Water is scarce, and there is no sign of rain. Contracts have been let for coal, wood, and iron.