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Item 1

Star District

The Star district is near Star Creek Canyon on the east slope of the north end of the Humboldt Range 6 miles north of Unionville and 12 miles south of Mill City, a station on the Southern Pacific Railroad. The district was organized in 1861. In 1867 it was the scene of one of the wildest mining booms in the State after the discovery of rich silver ore in the Sheba vein. Star City became a town of 1,000 inhabitants and boasted two hotels, a Wells-Fargo Express office, a special telegraph line to Virginia City, and daily United States mail service. By 1868 the boom had collapsed. So sudden was the decline that in 1868 a writer of the period quaintly remarked, "the daily mail, the express office, telegraph office are all in operation yet, but the entire population consists of a single family, the head of which is mayor, constable, postmaster, express agent, telegraph operator, and I believe the sole unanimous voter!"

The principal mines were the Sheba and DeSoto, the outputs of which have fluctuated widely. Production from the district is reported to have been several million dollars. The mines have been idle for many years.

The rich silver ore occurred in lenses in limestone and sandstone. The sulphide ore contains stibnite, sphalerite, galena, fahlerz (tetrahedrite and tennantite), and pyrite in a gangue of white quartz. It is said that the first-class ore mined in the Sheba property was worth $300 to $500 per ton. The second-class ore was worth $60 to $70 per ton.

The base character of the ores rendered their reduction difficult by the processes in use at the time. Amalgamation methods of treatment which were applied to the Comstock ores in the early days were tried, but these did not prove very successful. In 1873 a Krom concentrator was erected to treat the ores. The Krom process employed dry concentration. Power for mining and milling in this area was partly generated by water wheels. Star Creek drains a considerable area, and at certain times of the year its flow of water is quite large.

One mile below the Sheba mine in Star Creek Canyon is a quartz vein that carries stibnite. Another deposit of stibnite occurs in Bloody Canyon several miles south of Star Creek Canyon. Antimony ores have been produced in a desultory manner for many years. Antimony was last produced in the district in 1917 and 1918.

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Trinity District

The Trinity district is in Trinity Canyon on the east flank of the Trinity Range 11 miles north of Lovelock by unimproved automobile road. It was discovered in 1859 by George Lovelock. The principal property is the Evening Star, which produced considerable rich ore in the early days. Some ore was hauled to Sacramento by ox team and shipped to Swansea, Wales, for treatment. No authentic figures are available on past production. A small mill built at the Evening Star mine in the early days operated for several years. Lessees worked the property intermittently from 1914 to 1916 and shipped some ore. In 1934 the Evening Star patented claim was purchased by Clayton Mendham at a tax sale. The mine was re-opened by Mendham and associates, and several lots of ore totaling 13 tons and averaging $90 per ton net were shipped to smelters in 1935. In the fall of 1935 a small Gibson mill was installed, and about 25 tons of ore were treated. The ore

milled is reported to have averaged about $50 per ton. Mining was done by hand methods.

The property is developed by an inclined shaft several hundred feet deep and several adits. Workings total about 1,500 feet. Ore occurs in two parallel veins in granite. Values are in silver and gold. The gold is free and associated with iron oxide. A little copper and zinc are present in some of the ore. The gangue is hard, laminated quartz. The width of the veins ranges from several inches to 3½ feet, averaging about 1½ feet, and the veins dip about 55°.

The mill equipment consists of a 5-ton Gibson mill, a 1- by 5-foot silver-plated amalgamating plate, and a small concentrating table. The capacity of the plant is reported to be only 1/2 ton of ore in 8 hours. Power for milling and pumping is furnished by 7-hp. Satley gasoline engine. Water for milling is pumped from a well 24 feet deep sunk in the canyon a short distance above the mill. Amalgamation and table concentration is reported to extract about 60 percent of the ore. The tailings from the mill were treated in a small, experimental, cyanide leaching plant consisting of four tanks, 4 feet high and 5 feet in diameter, of which two are used for leaching, one for barren solution, and one for stock solution. Solutions are circulated by hand pumping. Zinc shavings are used to precipitate the gold and silver. The total cost of milling equipment has been about $2,000.

A small lot of ore shipped to the United States Smelting Co. on June 29, 1935, gave the following information:

Metal quotation:

Ag - per oz.	$0.77
Au - do.	34.9125

Settlement assay:

Au - oz.	.90
Ag - do.	43.0
Cu - percent	.2
Insoluble - percent	90.4
Fe - percent	3.9
Zn - do.	.2

Metal value:

Au, 100 percent at 31.8183		28.64
Ag, 100 percent at 0.77		33.11
		61.75
Less 5 percent, value of Ag.		1.66
		60.09
Less working charge		7.50
		52.59

Total weight - lb.....	4,002		
Sacks (29) - - do.....	41		
	3,961		
Moisture 1.0 percent - lb.....	39		
	3,922		
tons....	1.961 at $52.59 per ton ...		$103.13
Freight	$18.47		
Freight surtax, 10 percent.....	1.85		
Assay charges and handling.....	7.50		
Sacks returned	.55		
	28.37		28.37
Net payment			74.76

When the writer visited the property a Sullivan 150-cubic foot portable compressor had been purchased, and preparations were under way to develop the property on a scale larger than was possible by hand methods.

Several other groups of claims above and below the Evening Star property are held by various owners, but these claims are still in the prospecting stage.

Unionville (Buena Vista) District

The Unionville or Buena Vista district is on the east slope of the Humboldt Range 20 miles south of Mill City, the nearest railroad point. The district was organized in 1861 and the town of Unionville founded. This town became the center of mining activity and was the county seat of Humboldt County up to 1883.

Silver-bearing lodes were discovered in this area shortly after the first developments on the Comstock. The most prominent mine was the Arizona, which was discovered in 1862. The mine was purchased by John C. Fall and company in 1866. The property was shut down in 1880 but was subsequently worked at various times. Other important mines that were worked in the early days are the Henning (Wheeler) and Pfluger (Manoa). In the early seventies three 10-stamp mills were treating the lower-grade ores in the district; the higher-grade ores were hauled by team to Sacramento and shipped in sailing vessels to Swansea, Wales. The stamp mills employed the Washoe pan-amalgamation process in which the ores were crushed wet and amalgamated in pans without roasting. The ores in this area were not so amenable to pan amalgamation as those in the Comstock, therefore the yield from the first treatment was little more than 50 percent of the assay value. The tailings were reworked by the same process after standing a while, to recover additional values. Table 4 presents interesting data on mining and milling costs at Unionville in 1869.[18/]

18/ Raymond, R. W., Mines and Mining West of the Rocky Mountains: 1869, p. 190.