

The formation is slate intruded by monzonite. The ore occurs in two nearly parallel fissure veins traversing both the slate and monzonite. The vein on which most of the work has been done strikes N. 10° E. and dips 50° westerly. The economic minerals are silver, gold tetrahedrite, galena, and sphalerite and their oxidation products in a gangue composed chiefly of quartz with a little pyrite. Width of veins ranges from a few inches to 5 feet, and where the ore has been stoped the veins average about 2 feet in width.

BERNICE DISTRICT

The Bernice district is on the west slope of Clark Alpine Range in east Churchill County, 90 miles by road, a little south of west from Fallon and 70 miles southeast of Lovelock, both towns being on the Southern Pacific R. R. From Fallon the district can be reached by automobile over the Lincoln Highway to Dixie Valley turn off, a distance of about 40 miles, and thence up Dixie Valley to the mines situated in Bernice and Hoyt Canyons. The last 25 miles of road is in poor condition, but with careful driving is passable.

Silver and antimony ores were discovered in the district in the late eighties. The principal ore mined has been silver ore from the Williams mine; probably about 500 tons of antimony ore has been shipped. In 1939 the only activity in this area was by lessees on the Bluebird group of claims.

Silver Deposits

The Williams mine at the head of Bernice Canyon comprises two patented and three unpatented claims owned by the Warren W. Williams estate. This property was discovered by James Wardell in the late seventies and was sold to Williams, who operated it from 1880 to 1890. A 10-stamp mill was erected below the mine in Bernice Canyon; silver produced is said to have amounted to \$300,000. The ores contained considerable arsenic in the form of arsenopyrite, and the mill was equipped with two White-Howell roasters. The ore is in a series of narrow veins in shale. The outcrops carried considerable antimony, which decreased at depth. The mine has been inactive for many years.

The tailings pile below the old mill site, containing about 6,000 tons, is owned by C. M. Beeghly and L. T. Ellis, according to a location notice dated March 18, 1939.

The Bluebird group, comprising six unpatented claims owned by Albert Lofthouse, of Fallon, is in the northern part of the district. In 1939 the property was under lease to D. G. Brunner, A. J. Cooley, and associates, who, up to April 1939, had made one small shipment of ore to the McGill smelter. Here the ore occurs in a narrow vein in limestone.

Antimony Deposits

Antimony was first discovered in the district in the eighties by H. Hoyt. W. W. van Reed shipped several cars of hand-sorted ore containing 62 percent antimony to the Star and Matthews smelter in San Francisco. A small quantity

of antimony ore was produced in 1893 by Sanders and Young, and the last production of record was made in 1906, when 200 tons were shipped. C. Solomon, Jr., of San Francisco, identified with the Chapman Smelting Co., was active in the district during the World War. Although considerable development work was done at that time there is no record of any production.

The Antimony King and Lofthouse mines are the principal antimony properties. The former is at Bernice and the latter about 5 miles southwest. The deposits have been prospected by numerous superficial workings. According to Mallory,^{9/} the prevailing geological formations are a series of sedimentary rocks, chiefly slate, shale, and limestone intruded by granite. The commercial antimony ore occurs in quartz veins in the lower slate stratum of the sedimentary series closely associated with limestone strata. At the Antimony King mine are two siliceous limestone beds averaging about 2 feet in thickness and being 300 feet apart. The most persistent bed is traceable on the surface for 3 miles. The croppings of limestone are stained yellow from antimony oxide along the cleavage planes, but it is not present in commercial quantities.

The Antimony King vein is traceable on the surface for 900 feet and strikes N. 10° E. with a dip of 50° W. It cuts the slate and limestone strata at nearly right angles. The width of the vein ranges from 4 inches to 4 feet, and both walls have a parting of black slaty gouge. The vein filling is predominantly quartz containing shoots of nearly solid antimony in places. The weathered zone contains cervantite, the yellow oxide of antimony, which in places forms coatings on stibnite. Sphalerite occurs sparingly. The best ore is near the intersection of the vein with the southern limestone stratum.

The Lofthouse vein parallels the Antimony King vein; the best ore likewise occurs associated with a limestone stratum in the enclosing shale. In the Lofthouse vein the antimony is less massive, occurring in fibrous or needle-like forms.

CHALK MOUNTAIN DISTRICT

The Chalk Mountain district is in the southeastern part of Churchill County in the vicinity of Chalk Mountain in the southern end of Dixie Valley. This mountain, isolated from the main Alpine Range, is 3 miles long and 2 miles wide and rises to a height of about 1,000 feet above the surrounding terrain. It is composed of whitish dolomitic limestone, which forms a conspicuous landmark in the region. The nearest railroad connection is at Fallon, 44 miles west-northwest of the principal mine. The district is midway between Wonder and Fairview, sometimes being considered part of the latter, which lies about 8 miles south. The mineral production is included under the Fairview district.

Chalk Mountain was prospected in the early years of mining activity in Churchill County, but received little attention until 1923, when E. M. Dawes interested a Minneapolis group and acquired control of the Chalk Mountain Silver

^{9/} Mallory, Willard, Antimony Veins at Bernice, Nev.: Min. and Sci. Press, Vol. 112, 1916, p. 556.