HORNSILVER DISTRICT, NEVADA.

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*The town of Hornsilver, which came into existence in 1907, lies in Esmeralda county, Nevada, 26 miles south-southwest of Goldfield, 14 miles southwest of Cuprite, a station on the Las Vegas & Tonopah and the Tonopah & Tidewater railroads, and 12 miles southeast of Lida. Mining in this vicinity is not wholly recent, and an earlier settlement on the site of Hornsilver was known as Lime Point. Prospecting of this region began about 1868, and over 20 years ago ore was hauled to a mill near Lida from the Grand Central and other claims near Lime Point; but most of these claims had long been abandoned when the growth of Tonopah and Goldfield called attention anew to this part of Nevada and provided better facilities than formerly existed for its economic development. Work on the Great Western vein began in 1905, and the Grand Central was relocated early in 1908, after the presence of rich ore in the Great Western had been established. The following notes are based on a visit of a day's duration in June 1908. At that time there were about 500 people in the district and considerable prospecting was in progress in the hills west and south of the town. Water was hauled from a spring 12 miles away and supplies were brought from Goldfield by wagons or partly by rail by way of Cuprite. One mine only, the Great Western, was shipping ore.

Hornsilver, at an altitude of 5900 ft., lies on a gentle alluvial slope, which opens northward into one of the broad desert valleys of the region and is inclosed on other sides by hills rising from 500 to 1000 ft. above the town. The rocks of the district are limestone and calcerous shales, which are intruded and in places more or less metamorphosed by masses of granite. The stratified rocks are mapped by S. H. Ball[1] on his reconnaisance map as the Prospect Mountain limestone,[2] of Cambrian age. He described briefly[3] the rocks of Slate Ridge, south of the new town, and shows that these old stratified rocks are continuous with the more metamorphosed beds at Tokop and Gold Mountain, southeast of that ridge. Near Hornsilver some shale is interbedded with the limestone, but a considerable thickness of shale with subordinate calcerous beds underlies fairly massive limestone, which is exposed in the hills south and east of town. The ores lie mainly in these shales.

The principal veins are southwest of town, within a distance of a mile. They constitute an approximately parallel system and cut across the bedding of the shales with a prevailing strike of N. 55° to 66° W. and with steep dips. Although the wall rock is generally shale, the veins are parallel to some fine-grained and rather obscurely exposed dioritic dikes. The two principal veins are the Great Western and Grand Central, which are about a quarter of a mile apart, the Grand Central being the farther from town. These have been traced by trenches and pits for distances of 3000 to 4000 ft. along their not very conspicuous outcrops. There are also three or four other veins on which less work has been done. All of the vein material that could be seen in 1908 was thoroughly oxidized and for the most part soft. The fissures after being filled with quartz and sulphides evidently had been crushed by later movement along the original dislocation and the vein was thereby rendered permeable to oxidizing solutions. The valuable constituents are native gold and chloride of silver.

The Great Western mine at the time of visit was developed to a depth of 200 ft. and equipped with a 15-hp. gasoline hoist. The 100-ft. level was about 600 ft. long and the 200-ft. level about 175 ft. long. Since that time a 300-ft. level has been opened. The gross product of the mine in June 1908 was, according to the owners, between $30,000 and $40,000, the shipments ranging in assay value from $75 to $400 per ton. The Great Western vein strikes N. 60° W. and near the shaft dips 50° N.E. At the northwest end of the 100-ft. level, however, the vein is nearly vertical. There is a very regular and persistent hanging wall with a thin skin of soft gouge separating ore from country rock. The vein is in some places about 20 ft. wide and consists of the usual crushed rusty quartz found in the veins of this district. Much of this material is said to yield assays of about $30 per ton, but only the higher-grade portions have been stoped. The ore from these portions shows abundant cerargyrite as sparkling olive-green crusts on the rusty quartz fragments and as small crystals in spongy limonitic material residual from the oxidation of the original sulphides. Minute quantities of a bluish-green mineral in thin crystalline rosettes associated with the cerargyrite are probably embolite or bromyrite, but have not been chemically tested. The ore shipped in 1908 contained relatively little gold; not more than 15% of the total value of the precious metals present. Recent reports, however, indicate that ore with a much higher proportion of gold has been stoped in the northwestern part of the 200-ft. level. A second vein has been cut near the shaft on the 100-ft. level, samples from which are said to contain more gold than silver. It had not been stoped at the time of visit. In January 1909 the mine was reported to be shipping 12 tons of ore per day by way of Cuprite.

A short distace southeast of the Great Western mine the vein passes under alluvial material and little is known of its extent or value in that direction. It has been traced northwestward, however, for 3000 ft. or more, and several sets of lessees were engaged in 1908 in exploring this vein or others in the same general zone of fissuring. No work was in progress on the Grand Central vein in June 1908, although some shipments have since been reported in the mining press.

About 1½ miles due south of Hornsilver, on the other side of the limestone ridge (Slate Ridge), which separates the town from a small arm of Death valley, known as Oriental Wash, is the Redemption mine, worked superficially many years ago and recently re-opened by lessees.

*Abstract from Contributions to Economic Geology, 1908. Bull. 380, U. S. Geological Survey.

[1]A geologic reconnaissance in southwestern Nevada and eastern California: Bull. U. S. Geol. Survey No, 308, 1907, Pl. I. [2]Now known as the Eldorado limestone. [3]Op. cit., pp. 182-195.