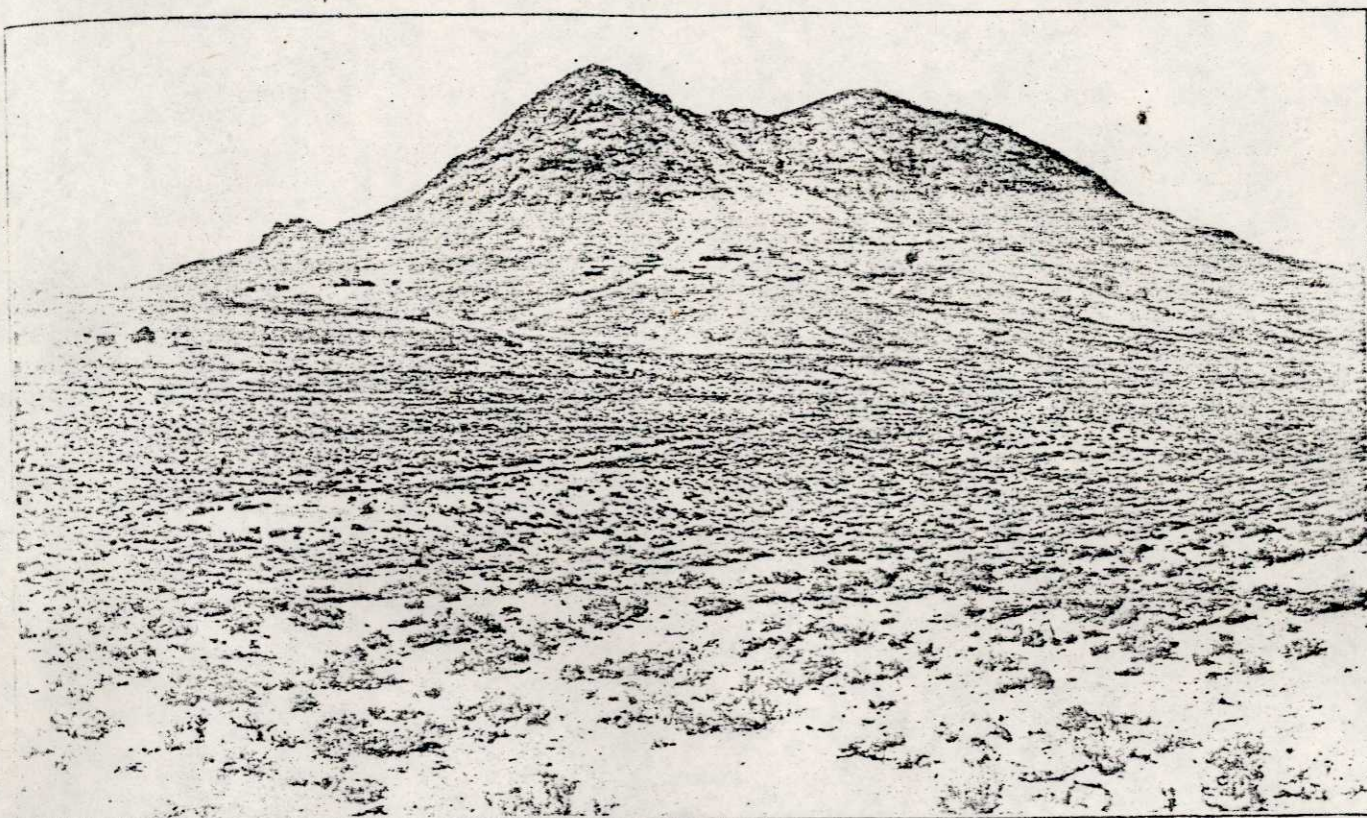


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GOLD MOUNTAIN, IN THE TONOPAH DIVIDE DISTRICT OF NEVADA

The Divide District

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Attention was first attracted to the Divide district of Nevada by the presence of free gold, but the lack of high-grade gold ore prevented extensive exploration at the time of discovery. Recent developments have disclosed the presence of silver ore, which shows increasing richness with depth. At present

the district is undergoing experiences similar to those met by earlier Nevada mining-camp booms. There is, of course, the speculative element which has characterized every rapid development in the mining industry, but sufficient stable exploration is being done to promote the future activity of the camp.

THE Divide district, near Tonopah, Nev., has suddenly sprung into prominence owing to the fact that within a few months one large mine has been developed from a prospect, and the investing public is told that further development will bring forth more productive properties. The district is advantageously situated and is reached by the main high-connecting Tonopah and Goldfield, being only six miles south of Tonopah, yet lying within Esmeralda county, of which Goldfield is the county seat. Before Goldfield was discovered the Divide district had its name and was located for miles by Tonopah prospectors. Because of the persistent showing of free gold over a

large area, it was known as the Gold Mountain district. Considerable surface work was done, but high-grade ore was not disclosed, and the discovery of Goldfield lured away both prospector and capital.

Geologically speaking, the district is one of nearly horizontal flows of rhyolites, breccia, and basalt. Erosion has left many small mountains, most of which are overlain by a later rhyolite flow, though a few are capped with basalt. There is little to indicate that any of these mountains are rhyolitic necks. The tufa, or lake-bed formation, frequently appears. The most prevalent breccia is a light colored, rhyolite ground-mass variety containing small, sharp fragments of other rhyolites, tufa, and siliceous pebbles. Another breccia is vitreous, and is filled with large andesitic fragments.

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certain slopes have the appearance of weathered andesite, and granite outcrops to the west of the district. Across these formations numerous wide zones of fissuring and silicification, the so-called dikes of the district, can be traced for long distances. This fissuring usually has a persistent northwest strike, and both the rhyolites and the breccia are thus fissured and silicified. These zones show heavy oxidation of the original iron content, and the characteristic red color can be traced by the eye. Oxidation has evidently extended to considerable depth, and the rhyolites outside of the zones of silicification are much weathered. The breccia has withstood the weathering, and often stands out in bare, rounded hills.

There are surface indications of faulting, and the workings of one property in the tufa or lake-bed formation show a marked step faulting. The term fault is also applied to the lines of fissuring where the fissuring has been intense enough to shatter the rhyolite into thin plates and there has not been the usual cementing silicification. These fissures are practically vertical, and displacement is, therefore, not easy to detect.

The gold makes its appearance as free mineral in the fissuring in the silicified rhyolite. The body of silver that is now attracting attention to this district occurs along the same characteristic fissures, but in the breccia formation, and shows little silicification, but marked kaolinization.

OPERATIONS IN DISTRICT SLIGHT FOLLOWING BOOM

Following the decline of the district in 1903, only a few properties continued to be worked spasmodically for the next 15 years. One of these, a silver mine known as the Hasbrouck, produced a dense quartz, almost a malachite, and the other, known as the Gold Mountain, mined a silicified rhyolite carrying free gold and a large percentage of iron oxides. Both ores were treated at the West End mill, in Tonopah, after 1913, and the Hasbrouck is about to resume shipments. In addition to these few properties, several prospectors held their claims with remarkable persistency, and finally two of them took a lease on the Gold Mountain property.

PRELIMINARY WORK AT TONOPAH DIVIDE SUCCESSFUL

The favorable showing made by the two men on this silver vein in the rhyolite near the mountain top engaged the principal owner, Cal Brougher, to incorporate the Tonopah Divide Mining Co., for the purpose of sinking a shaft on the hillside below and crosscutting the vein. Although Mr. Brougher has been identified with the Belmont, Midway, and other mines of Tonopah since the discovery of the camp, the stock went begging, and he financed the undertaking practically through his own resources. The shaft was sunk just below a prominent northwest outcrop of rhyolite breccia. At the 165-ft. level a crosscut, driven toward the gold vein, at a short distance cut a well-defined wall in the breccia, with a change in hardness and color. Assays were made of this material, and the silver content, as shown by the returns, was such that it was deemed advisable to sample each round, and the results soon confirmed the fact that a remarkable discovery had been made.

The find occurred in war times, Tonopah was accused to large bodies of silver ore, and the new discovery was considered a freak because it was not found in a regular quartz vein in trachyte, and for the further reason that mineralization occurred in "mud seams" in the worthless breccia. However, George Wingfield, of the Wingfield Consolidated fame, who had sold out his inter-

est in the property two years before, on geological advice, did not hesitate to plunge in for a half interest with Mr. Brougher. At 265 ft. the breccia was again crosscut, and subsequent drifting cut a larger and higher-grade orebody than that on the 165-ft. level. On the surface an old cut in the breccia, unnoticed for years, was sampled, and assayed several ounces of silver to the ton. The original prospector had relied on the gold pan instead of the fusion furnace, and had missed a fortune.

TREATMENT TESTS ON ORE FROM 165 LEVEL UNSATISFACTORY

Samples of the ore from the 165-ft. level were submitted to the Tonopah mills, but the tests showed high cyanide consumption and low extraction, which fact was attributed to the combination of the silver with oxidized molybdenum minerals. The molybdenum content was sufficiently large to warrant considerable work on a process to save it as well as the silver.

Development on the 365-ft. level disclosed a larger and richer orebody than that on the 265-ft. level. The drift to the southeast from the shaft crosscut disclosed mill ore for 400 ft., with the face still in ore, and crosscuts at 50-ft. intervals showed a width of from 10 ft. to 60 ft. of ore. As on the levels above, the ore was found to follow a series of vertical northwest fissures or faults, and at certain points both well-defined hanging and foot walls are found, but they are not continuous. A set of fissures cutting across the others at rather an acute angle is of considerable importance, for the ore at the contact shows enrichment and grows impoverished when distant from them. The richest ore is a blue-black clay, heavy with fine silver minerals.

EXTRACTION PROCESS SIMPLIFIED WITH DECREASE IN MOLYBDENUM CONTENT

Silver sulphides and native silver, finely divided, appear with the silver chloride on the 365-ft. level. The ore is soft, and the silver minerals are finely divided, so that the beautiful specimens that characterized the Tonopah ores are lacking. On this level the molybdenum practically disappears, and the ore gives excellent results to straight cyanide treatment. It is much easier to crush and grind than Tonopah ore, and extracts more rapidly, but requires a much greater settling and filtering area.

The improvement with depth of each succeeding level attracted capital to the adjoining properties along the strike of the breccia outcrop at the Divide shaft. The Gold Zone, the Brougher Divide, the Divide Extension, the Tonopah Dividend, and the Divide Consolidated were amply financed. The breccia on the surface at the Divide mine contains little of value, and the ore from the levels below is oxidized and carries mostly horn silver. Consequently, the idea is prevalent that the surface has been leached and that depth by shaft sinking must be obtained before the formation is prospected.

Work on the 465-ft. level of the Divide mine has been in progress only a short time, but the remarkable showing on this and on the 365-ft. level, considering the development work done, has caused great excitement in the Divide district. The assay value of the ore on the 465-ft. level in the hanging-wall drift to the southeast, as given to the public and to the newspapers, has greatly exceeded that reported as coming from the 365-ft. level. The first 110-ft. is said to have averaged \$60 a ton, and after that extremely high assays have been reported

to 2604 oz. of silver per ton for the sample from one end. This drift has been driven over 250 ft., but cross-cutting has not been done. Development work is hindered by the small installation now used, but larger equipment is being installed and the shaft is ready for cutting of the 565-ft. station.

The feature of the development work to date is the fact that such a large proportion of it has consisted of operation in actual ore. The main mineral values to be found are silver, but the gold content is not negligible, as the ratio of silver to gold is about 250 to 1 by weight. Probably several million dollars in silver will be produced from the area opened up by the present development work, and the limits of the mineralized fissure zone, either in extent or depth, are as yet unknown.

FUTURE OF DISTRICT DEPENDENT ON DEVELOPMENT

The Brougner, the Divide Extension, and the Gold Line on their lower levels have cut fair ore in development work in the breccia. Both extravagant and moderate claims are made as to the quantity and grade of ore found, but the fact has been established that with development work these properties have an opportunity to become producers. Tonopah had but one property at which the ore-bearing trachyte formation outcropped on the surface, and only the distinctly quartz veins in the formation carried silver. The surface on the now famous Belmont mine is covered by a barren-looking white rhyolite; that of the Montana, West End, and Extension was covered with a badly weathered barren andesite. Yet companies were formed and money was raised in the hope that the trachyte underlaid the other formations and with the less probable expectation that it also contained rich quartz veins. In the Divide district today the breccia formation can be found for miles in nearly all directions, and with it are wide zones of faulting, fissuring, silicification, and oxidation, with the same approximate N. 45° W. strike of the Divide zone. What a chance for the locator, the promoter, and the mine maker!

PROFITIOUS CIRCUMSTANCES FAVOR DIVIDE BOOM

A boom was inevitable. Here was a new silver mine and great promise in a district that offered equal opportunities for miles around. It was close to one of the leading silver-producing camps in the United States that offered wealth and stability. The war was over, and the "war babies" were off the market. Silver was the king of metals at more than \$1 an ounce, with all the other metals under the cloud of reconstruction. The bold but plunging Wingfield, of Goldfield Consolidated fame and wealth, not content with the rich windfall of the Divide mine, played the wheel of fortune by investing in neighboring properties and buying and financing newly discovered prospects and mines.

With every train came men that have figured in every boom in Nevada for the last 20 years. The daily papers were forced to crowd out national news to give place to tales of prominent men purchasing valuable groups of claims, and incorporating the ——— Divide Mining

Ford cars vibrated up Main St. filled in the back with 4 x 4-ft. posts to be used as location corners. The Tonopah Hotel lobby was jammed with locators, curbers, engineers, promoters, and moneyed men. Allotments of a quarter million treasury stock were oversubscribed in a day by local money, and much of the stock was sold a week later for double the price

paid, and it was listed on the exchange. This easy money is being reinvested in new promotions, and the process is as yet like the uninterrupted course of a growing snowball. The demand for claims resulted in the stiffening of prices until a favored group about a mile from the Divide mine brought \$50,000, and groups of claims within three miles of the Divide, with only location notices up and corners staked, were held at \$5000. The feverish excitement still exists, and will continue as long as the limits of the Divide orebody remain unknown and the adjoining properties continue to report improved showings. This boom phase of the new district's development will probably result in the establishment of fictitious values, and the loss of money to many investors, most of whom are more interested in the stock quotations than in the properties themselves.

The redeeming feature of the boom is that, of the 200 companies incorporated, nearly all are providing themselves with a treasury fund of \$15,000 to \$25,000 for development work. There has been no lavish expenditure for fine offices and autos, and there are no high-salaried officers. The purpose of every company seems to be to get to work. Operations are in charge of reliable and responsible men, and good shaft-sinking equipments are being installed. Competent shaftmen and hoistmen are already hard to obtain, and several hundred good workmen from the quiet copper camps will find employment here this summer.

PROMOTIVE ACTIVITIES CONDUCTIVE TO THOROUGH EXPLORATION

The large sums of money spent on development will thoroughly explore the possibilities of the district. Much unnecessary work will be done on ground that does not justify the expenditure or effort, but, at the same time, the work will determine to what extent the pronounced fissuring and silicification of the breccia and rhyolites have been accompanied by the mineralization of these same formations. Until the Divide mine found the ore, investors and engineers were skeptical of the small surface showings of the district, but today claim buyers do not demand even a surface showing, and many are more interested in knowing about their neighbors than concerning themselves as to whether or not the best formation and fissuring are present.

The high price paid for claims has put heart into prospectors, for they had been discouraged by the demand of the engineers for more ore in sight and for further development work. Claims at a strike sell like hot cakes, and for the first time in years the hills of Nevada will be covered with prospectors. This time they will travel in "flivvers" and with a grubstake large enough to pay for an assay on every promising piece of quartz, breccia, or rhyolite.

Conservative investors looking over the Divide district are already giving consideration to the many evidences of ore in the surrounding camps which dollar silver has made worth development work, and, with the advent of the Divide mine, a sharp revival in the search for and development of precious metal mines in Nevada has come.

Every Nevadan, loyal to the traditions of the Comstock, remembers with a thrill the stirring days of 1902 to 1906 that brought forward Rhyolite, Manhattan, Tonopah, and Goldfield, and devoutly hopes that the Divide is just the first of the new camps that will reestablish Nevada's prestige as the premier producer of the precious metals.