Jarbidge, Nevada

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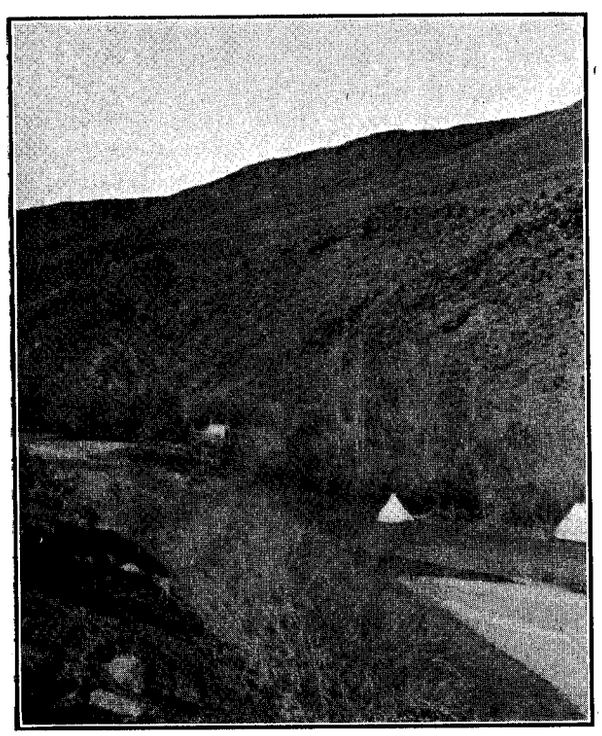
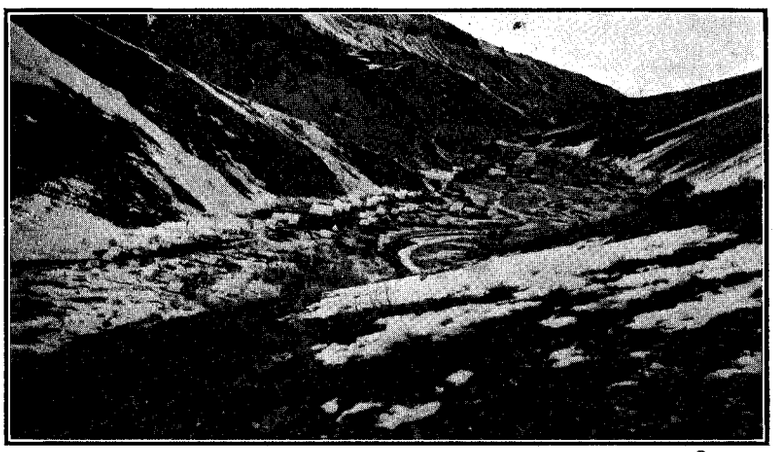
By W. A. SCOTT

The new mining camp of Jarbidge is situated in the northern part of Elko county, Nevada, seven miles south of the Idaho-Nevada State line. It is about 95 miles southwest from Twin Falls, and the same distance from Buhl, in Idaho, these being the nearest railroad supply points on the Idaho side. The distances to the camp from Elko and Deeth, Nevada, are 80 and 65 miles, respectively, the former on the Southern Pacific and the latter on the Western Pacific. The travel to Jarbidge is divided among the railroad points named, though at present most of the passenger and freight traffic appears to be from Twin Falls, which has excellent hotel accommodations. A branch railroad of the Oregon Short Line runs 28 miles southerly from Twin Falls to Rogerson, and the stage trip begins at the latter place, making the distance into Jarbidge 67 miles from the railroad. The stages leave Rogerson at 9 a.m., and arrive at Rim Rock, on Bruneau river, at 6 p.m. Passengers stop here over night, and meals and tent lodgings are provided. The following day the traveler reaches Jack Hole, 12 miles farther, at noon. This is the local name of the canyon formed by the east fork of the Jarbidge river, and which is four miles from the town of Jarbidge. At the time of my trip, Jack Hole was the end of the stage line; the remaining four miles had to be traveled either on foot or horseback, as the route led across the canyon and over a ridge having precipitous slopes. However, a wagon-road was being graded over this part of the route and by the time this is in print stages and wagons will be going into camp, resulting in greatly reducing the freight rate on merchandise.



Rim Rock on Bruneau River, on the Way to Jarbidge, Nevada, From Twin Falls.

Jarbidge is a typical camp of tents with a few log cabins. It is strung along Jarbidge river for a mile, and up Bear creek, which comes into the Jarbidge from the west. The Jarbidge and its tributaries drain the northern slopes of the range of mountains of that name which culminate in Jarbidge peak, reaching an altitude of about 12,000 ft. There are four other conspicuous peaks in this cluster, and travelers approaching from the Idaho side have designated them as the Five Peaks. Their southern slopes drain into the tributaries of the Humboldt river. The Jarbidge river, which flows northerly into the Bruneau and thence into the Snake, is one of the few streams in Nevada whose waters find their way out of the State. The Jarbidge is a swift-flowing stream, having nearly the same volume as Clear creek, in Colorado. The canyon in which it flows is 400 to 600 ft. wide, and has a bed of gravel and sand, the bedrock of which has not been explored. The sides of the canyon rise to a height of 1500 to 2000 ft. above the stream, but the slopes are not too precipitous to be readily climbed in most places. In the river-bed and on the mountain sides are growths of mountain mahogany, cedar, pine, and some cottonwood trees. The entire section, embracing both slopes of the Jarbidge range, is within a National Forest, and persons wishing to cut trees for tent poles, cabins, and mine timbers are required to secure permits from the local Forestry official.



Jarbidge, Nevada, March 10.

The country is covered principally by rhyolite, in which are, apparently, some dikes of andesite and dacite. Cutting through this formation are numerous dikes of silicified rhyolite and quartz which carry the gold and silver of the camp. The croppings of the latter dikes, or lodes, are very prominent, in some instances protruding from 5 to 30 ft. above the adjacent surface. On the east side of the Jarbidge are three of these outcropping veins, more conspicuous than the others, which strike northwest; they are cut obliquely by the stream. The

one farthest north is now known as the Bourne lode, the 11 claims on and contiguous thereto having been located by D. A. Bourne in August, 1909. The next lode, or zone, paralleling the Bourne, is the Pavlak, five claims along which were staked in September, 1909, by Mike Pavlak and Peter Thourot. Still farther south, on the east side of the canyon, is the Pick and Shovel group, which was located at about the same time by John Escalon. The vein on the last named may or may not be the same as that of the Pavlak. Bourne, after making his locations, secured the co-operation of some Boise men and the North Star Mining Co. was organized to develop the property. J. E. Clinton, of Boise, is president of the company, and D. A. Bourne, manager. Mr. Clinton is a banker, and Charles Reynolds, a banker of Bruneau, is a stockholder and director. The only work thus far performed by the company consists of an adit 100 ft. long on what is considered the principal lode, some 30 ft. of cross-cutting from the adit, and a 15-ft. shaft on the same lode. F. V. Bodfish, of Victor, Colorado, who spent 12 days in the camp and thoroughly sampled this lode and had assays made, favored me with data showing the results of his investigations. In sampling what he considered as mill-dirt, not including picked specimens, he found that 13½ ft. of the surface outcrop averaged $8.54 per ton; that 11 ft. of cross-cutting from the main adit, neither wall exposed, averaged $8.50 per ton; that samples across one side of the shaft, that was sunk on the east wall, ran an average of $12.32 per ton. Assays of 23 samples from this lode gave results as low as 40c. and as high as $19.15 per ton. As showing exact results for gold and silver, 8 ft. of the outcrop gave 0.28 oz. gold, 1.88 oz. silver; 3 ft. more of outcrop gave 0.34 oz. gold, 0.9 oz. silver; the first 2½ ft. across the south side of shaft gave 0.92 oz. gold, 1.5 oz. silver; the next 2½ ft. showed 0.32 oz. gold, 2.40 oz. silver; the next 1 ft., 0.32 oz. gold, 0.5 oz. silver. Mr. Bodfish also made assays of picked specimens from the Bourne lode, six of which assayed as follows: $64.50, $88, $211.93, $305.90, $151.60, $414. He believes the Bourne orebody is a lode in the rhyolite, with defined walls, that its strike is south 40° east, dip 80° east, and its probable width 30 ft. Free gold is visible in some of the ore, and may usually be obtained by crushing and panning. The highest-grade ore occurs in dark streaks in the quartz, in which the gold is associated with sulphide of silver. There are those in the camp who assert that they find petzite in the ore, though experienced assayers here have failed to find it. Three supposed high-grade specimens from the Pavlak gave $13.44, $35.60, $12.90; two from the Pick and Shovel ran $42.24 and $46.70 per ton. Mr. Bodfish is of the opinion that there is a mineralized zone, in which is embraced the principal lodes, which has a length of 12,000 ft. The Bourne company is undertaking the development of one part of the group, and has let a number of leases on other parts. The first lease was let to Frank W. Riddle, of Twin Falls, and he is starting systematic work. The second lease was let to Roberts & Lamb, who have begun work. Ten or twelve other leases have been given, and most of these lessees were to make their selections April 10. Among these are Wyman & Wyman, of Boise; P. L. Williams, of Salt Lake; and others from Goldfield. Some of the leased ground covers what appears to be cross-veins or spurs from the principal lode. The small amount of work performed, however, makes the system of veining uncertain.

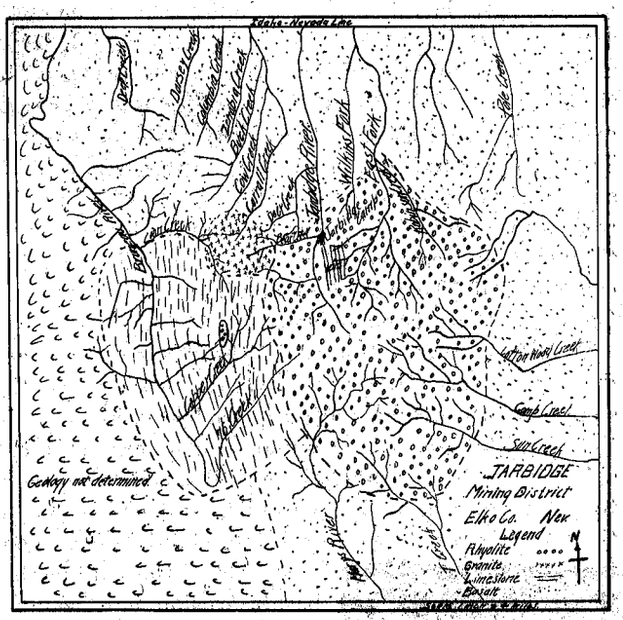
The Pavlak group has been bonded to the Pavlak Mining Co., in which Coburn & DeWitte, and Brunn, Kinney & Co. are principals, the price named being $100,000, a payment of $10,000 to be made in May. The outcropping vein on this group is a strong one and seems well defined, but the development is very limited. A cross-cut has been started from the base of the mountain, on the river, which is expected to intersect the vein by driving 400 ft.; this will give about 600 ft. of backs. The Twin Falls Jarbidge Development Co. holds a bond from John Escalon on the Pick and Shovel group at $100,000, a payment of $2000 having been made. A shaft is being sunk on the foot-wall of the vein, with the idea of driving cross-cuts from it to the hanging wall of the vein at various depths. This plan assumes that the vein dips east. This vein runs nearly parallel with the canyon at this point, and ample opportunity is offered to obtain great depth by driving cross-cuts to the vein from the side of the canyon. The characteristics of the ore at the Pick and Shovel and Pavlak are similar to those at the Bourne, and so far as can be ascertained the value of the ores is much the same. There is a large area here that is attractive to prospectors. The streams head in snowy basins near the summit of the range, each cutting deeply into the formation. Bear creek is one of those streams. It runs almost parallel to the Jarbidge for some distance before making a turn to the east and into the latter. The high ridge between the two canyons is marked by east and west andesite dikes, which also extend westerly from Bear Creek canyon. A part of this area is covered by the group of the Belmont Mining Co., in control of W. A. Stevens and associates, of San Francisco. Some work is in progress here; one adit is being driven easterly and another westerly from the bed of Bear creek. Assays obtained here make it seem worth while to continue development. Mr. Stevens spent two months in camp last fall and has done a great deal of prospecting and testing. Information obtained at the district recorder's office was to the effect that over 500 claims have been staked and filed for record in the district. Aside from the ore obtained on the three most prominent veins in the camp—Bourne, Pavlak, and Pick and Shovel—there seems to be gold-bearing ore distributed over a wide area where quartz croppings occur. At the time of my visit there were hardly 20 men at work on all the claims of the camp. It is but fair to say, however, that work has been held back till the wagon-road from Jack Hole was finished and until finances were arranged. Many claims were staked by men who will do little in the way of actual mining, as they not only lack the means but are without experience. Probably the proportion of this class is not greater here than it has been in other new camps. Mine operators of Colorado, Utah, Ne-

not an unimportant item, by any means; one engineer, who has some interesting figures from an extensive examination in Colombia, mentions that his white assistants were incapacitated 16⅔% of the time from sickness. On another trip the young engineer in charge contracted a fever which proved fatal. In foreign countries, as elsewhere, in making investments in dredging, much money may be saved, and disappointment avoided, if prospective investors will insist upon having reports by experienced engineers rather than listening to the advice of optimistic incompetents, and going blindly into enterprises that, to be an economic success, require experience and good judgment in every phase of the work. With the drawbacks of operating in foreign countries, together with unfamiliar government regulations, and other disadvantages incident to operating so far from home, there is little doubt that possible dredging areas in California, and other States, though of lower grade than some that are being at present worked, and of much lower tenor than necessary for profitable operation in foreign countries, will nevertheless be more attractive to conservative investors than the foreign fields. Many investors, however, will be attracted by the higher value of the gravels claimed for these latter places,

Geology of the Jarbidge Mining District

By Nelson W. Sweetser

Much has been written during the past year in regard to the wealth stored in the hills of the Jarbidge mining district in Elko county, Nevada, but very little has been told of the hills themselves. The name Jarbidge, called by the Indians 'Ja-Ha-Bich,' is given to the high peaks of the range, and means 'The Devil.' The Jarbidge district is situated between the west and the east forks of the Bruneau river, including the middle fork, or Jarbidge river, a district of about 18 miles in width, and from the Idaho line, which bounds it on the north, southerly for 25 miles, including the head waters of the Marys river. The highest and most prominent range of hills occurs between the Jarbidge river and East Fork, and runs north and south, reaching an altitude of 11,000 ft., yet this range does not determine the drainage of the district, which is generally nearly



north-south; from a high divide running east-west.

Geology.—The district exposes several geological formations, the oldest being the sedimentaries exposed on its western part. These for the most part strike east-west, and dip north at an angle of 60°. They consist of quartzite, limestone, and shales, named in the order of deposition. The beds show a thickness of several thousand feet. No fossils have thus far been found in them.

Granite.—An intrusion of coarsely crystalline gray hornblende granite has faulted and tilted the sedimentaries, and concurrent with or immediately following, the intrusion of the granite dikes of granodiorite have cut the limestones, further faulting them. This disturbed area then underwent extensive mineralization. A long period of erosion followed, which wore down the overlying strata and exposed the granite.

Rhyolite.—Resting unconformably upon this basement complex is a series of Tertiary eruptives, consisting almost entirely of rhyolitic flows. These at

one time covered the larger part, if not all of the district. Erosion has removed them in the western part, except a few remnants upon some of the higher peaks. The greatest thickness exposed in these Tertiary beds is in the Jarbidge peaks, where from the level of the river to the summit of the peaks it presents a thickness of 4700 ft. But even here, 1000 ft. above the river, amid the rhyolites is a ridge of the old basal plane, a stratum of micaceous and graphitic quartzite, striking N.W.-S.E., and exposed for a distance of two miles, being 200 to 400 ft. in width. The rhyolite flows vary in thickness from 50 to 500 ft., and upon the east fork of the Bruneau 12 successive flows can be distinguished where cut through by the river. Their texture grades from the true rhyolites, to the quartz and granite-porphyries, pale green in color. They contain considerable magnetite, which in weathering tints the cliffs with beautiful coloring. The beds rest conformably upon one another in level lines. Between several of them, beds of shale occur which are only a few feet in thickness. Whether or not these are fine-grained eruptives, or of sedimentary origin, could not be determined without petrographic study, but I judge them to be sediments. The rhyolites lie horizontally, showing neither faulting nor folding. The latest eruptives in the district are the basalt flows, which are the lower end of the vast area of the Snake river lava flows. They are crystalline, showing phenocrysts of feldspar. These rest unconformably upon the rhyolite and form a plain, which surrounds the rhyolite upon the north and east sides, rising to a height, near the east fork, of 10,000 ft., and showing several separate flows which are homogeneous.

Erosion.—Across this plain the streams have cut deep canyons, often with vertical walls. As the sources of the streams are approached, which are in the rhyolite area, the canyons widen out, and the sides form steep, grass-covered hills, with even contour, except where sharp needles and cliffs, due to the varying resistance to erosion, stand in bold contrast to the smooth surface. Along the contact between the rhyolite and basalt erosion has been an important factor in the present relief of the district.

Mineralization.—There were two periods of mineralization in the district. The first probably concurrent with, or immediately following the granite intrusion in the western part of the district, where a series of fissures, running N.E.-S.W., cut the limestones and grano-diorites, and a large number of small quartz veins have formed. These veins carry gold and silver, the gold often free at the surface, and some placer has resulted from their erosion. The ores are base, however, at shallow depth, and this fact, coupled with lack of transportation, has retarded the development of the district. The veins in Jarbidge camp occur entirely in the rhyolite. The mineralized district seems to be about three miles long and three miles wide. In the centre of the district are the quartzite strata previously mentioned. Veins occur on each side of its strike, and have several distinctive features. Those on the west, at present the most promising, have the form of a network of veins, whose general strike is N.20°W., with a dip of 80° to the east. These appear to be more of a brecciation of the rhyolite than of clean open fissuring. Evidence is lacking at this time of any movement of the vein-walls, either during the deposition of the mineral or subsequent to it, with the exception of the large Buster vein, which shows slight slickensides upon its walls. There has been no important faulting in the district since the vein formation. The rhyolite forming the wall-rock of the veins is unaltered, and remarkably fresh, only a few inches from the vein matter. The gold does not penetrate the walls of the fissure. The rhyolitic breccia is silicified and distinct walls are often lacking. One would judge the solutions to have been neither very hot nor concentrated, and their chemical activity very slight. The veins upon the east side of the quartzite strike nearly north-south, and dip west at 70°. They are beautifully banded, the bands often being separated with small seams of gouge. The walls are clear and distinct and accompanied by several inches of gouge. The formation of these fissures was accompanied by normal faulting. The veins of the camp vary in width from 6 in. to 12 ft. The values are irregular, and sufficient work has not been done to prove the average value of the ore. The silver occurs both as an alloy with the gold, and probably, as argentite.