

3560 0075

318

Item 75

REPORT

UNIV. NEVADA - RENO

OF

U.S. DEC 31 1991 DEP.

J. ROSS BROWN E

MINES LIBRARY

ON THE

MINERAL RESOURCES

OF THE

STATES AND TERRITORIES WEST OF THE ROCKY MOUNTAINS.

for 1867

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1868.

they would have necessarily been tilted and displaced in the same manner as the associated rocks, partaking of all the flexures and faults of the mountain range near which they lie. Instead of this being the case, the stratification is nearly horizontal, or only slightly inclined. In some places the beds have been somewhat tilted, probably by the causes which finally raised them above the water level, and gave the present configuration to the surrounding country. The conclusion is almost irresistible, that whatever coal is found in the neighborhood of Crystal Peak will be confined to the small valleys in that vicinity, which, at the period when Steamboat valley was an inland sea bounded by the Sierra on the west and the Virginia mountains on the east, formed small arms of the lake, and collected more or less of the vegetable *débris* which during violent storms was washed down from the pine forests on the surrounding hills. There is yet another consideration to be taken into account in estimating the probable extent of the deposit. The loss of bulk during the conversion of vegetable matter into coal is equal to about three-fourths of the original mass. It becomes evident from this that an extensive bed of coal can only be found where there has been, at some remote period, most luxuriant forest growth and water sufficient in quantity to convey the *débris* to vast tracts of marshy ground favorable for decomposition. The coal fields of the Eastern States and England afford abundant evidence that they were at one time extensive tracts of swampy forests, with a tropical climate and a luxuriance of vegetation with which even equatorial forests in the present day cannot compete. On the other hand, the remains of plants found in the associated rocks at Crystal Peak do not warrant us in entertaining the belief that such conditions ever existed in that neighborhood. What we do find point rather to a scanty growth, such as is found on the hills to-day. The almost entire absence of animal remains in the beds strongly supports this idea. Where there is an abundant vegetation there is generally a corresponding abundance of animal life, which could scarcely have failed to leave some mementos of its existence. If these views are correct, as there is good reason to believe they are, no body of coal will be found in this vicinity which, from its extent or thickness, will repay the capital expended in its development. The mere fact of the formation having accumulated in a contracted mountain valley, limits its extent and value at the same time. The thin seams of bituminous matter found between the layers of tufa may have been the product of dense growths of tule and other water plants.

SECTION III.

COPPER.

Among the more promising cupriferous localities in the State, is

THE PEAVINE DISTRICT, situated about 30 miles northwest of Virginia City, being six miles north of the Truckee river, and about the same distance from the Central Pacific railroad, with all which it is connected by good wagon roads. This district, erected in March, 1863, has a length of about 20, and an average width of 10 or 12 miles. Near its centre is a cluster of small springs, at which a house was built in 1860. About these springs grow quantities of wild peavines, hence the name of the station and subsequently of the district, which covers a region of low hills stretching along the eastern base of the Sierra Nevada. The country about the mines is dry, barren, and treeless, though it contains several small lakes with a number of springs, and water can be obtained in many places by digging wells from 30 to 50 feet deep, while wood, both for fuel and lumber, abounds in the Sierra, four or five miles distant. The lodes in this district, found almost invariably in a granite and metamorphic formation, have a northerly and southerly strike, and are from 3 to 12 feet in thickness, with a few of greater dimensions. They do not project much above the surface, and although a small number have been traced by the outcrop for several hundred yards, and have been found persistent for a considerable depth, many of them have the appearance of segregated rather than deep fissured veins. The lodes possessing the best local reputation as based on size, assays of ore, and extent of development, are the Great Eastern, 20 feet thick, the Bevelhimer, American Eagle, Enterprise, and Metropolitan, upon which tunnels have been run, varying from 50 to 300 feet in length, and the Pacific, Indian, Occidental, Young America, Great Western, Orient, Challenge, and Bay State, all somewhat explored by means of shafts, open cuts, and other excavations. The Tolls Company have expended some

\$4,000 in prospecting their lode, from which they have taken quantities of ore assaying from 15 to 40 per cent. of copper, and from \$60 to \$500 per ton in gold and silver. While the above-mentioned claims, as well, perhaps, as many besides, cover large and permanent lodes, others in the district have the appearance of being merely limited and superficial deposits. The Peavine ores, composed chiefly of carbonates and oxides, besides assaying largely in copper, contain a sufficiency of the precious metals to defray cost of transportation to the seaboard, when, as will be the case in the course of next year, railroad transit can be had. In the metalliferous portions of these veins free gold can frequently be detected by the unassisted eye; particles of this metal being sometimes found on the surface where the veinstone has undergone decomposition. The ores of this district give by assay from 10 to 50 per cent. of metallic copper, selected samples often going much higher. Small lots of the better class of ores have been found by working tests to yield from 30 to 40 per cent. of metal. By an assay of these ores made by Mr. Ricard, the following results were obtained:

Gold.....	.0005	\$2 50 per ton.
Silver.....	.0200	7 85 "
Oxide of copper.....	34.1000	135 00 "
Peroxide of iron.....	2.3200	
Alumina.....	.2200	
Sulphur.....	1.3600	
Carbonic acid.....	11.2000	
Silicia.....	46.6600	
Water.....	3.8400	
Loss.....	.2795	
	100.0000	145 35 "

Some choice ores reduced at the English Company's mill, seven miles distant from the mines, yielded 100 ounces of silver to the ton. Smelting works on the Swansea plan, with a capacity for operating 10 or 12 tons of ore daily, have been erected in the district, plumbago, obtained from a bed of that mineral near Washoe City, having been employed in their construction. This material is abundant in the locality mentioned, and although not yet thoroughly proved, there is good reason for believing it well adapted to this and similar uses. Several other furnaces, some of them on a different plan, have been projected, and there is a likelihood that one or more of these will be completed and in operation in the course of a few months. It is probable, however, that the bulk of these ores will be shipped to San Francisco for a market, or sent elsewhere for treatment when the railroad shall have been completed to this point; an event that promises to revive operations, now nearly suspended, enhance the value of claims, and repopulate this eligibly situated and promising district. A town, also named Peavine, was laid out in 1863, at the group of springs mentioned. It contains several houses, and being adjacent to the mines, should the latter turn out according to expectation, its growth will no doubt keep pace with their future development.

THE WALKER RIVER COPPER REGION covers a considerable scope of country lying between and adjacent to the east and west forks of that stream. The principal mines, so far as developments extend, are distant from the latter in a westerly direction, from 3 to 10 miles. This cupriferous belt has an average width of eight and a length of about 25 miles. Within these limits some strong veins occur, and here most of the labor and money laid out in that region have been expended. Like the Peavine, this is an arid, sterile, and timberless district; the only water in the immediate vicinity of the mines is afforded by a few small springs, while the only vegetable products consist of a scanty growth of bunch grass, *artemisia*, and a few other equally scraggy and worthless shrubs. There are, however, scattered groves of piñon on the Pine Nut mountains a few miles to the west, while the west branch of Walker river, in close proximity, and at all seasons a,