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Sierra County, N. M., Vanadium Deposits.

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In the variety and magnitude of its mineral deposits, Sierra county, New Mexico, is undoubtedly one of the richest, if not the richest, districts in the territory. Lead, zinc, coal, copper, gold, silver, iron and manganese have been produced, and recently large deposits of vanadium have been uncovered.

In the past, the county was famous for the enormous production of silver from the Apache, Kingston and Lake Valley districts, and a large gold production from the mines of Las Animas district, while the Caballos has produced considerable copper and some lead and coal. The Apache district is now producing silver and lead, and the largest gold property of Las Animas is in active operation, making regular shipments of bullion and concentrates, but the mining interest of the county is now centered upon the vanadium mines.

Two deposits have been found in Sierra

No development work has yet been done on the Dewey, save the sinking of two shafts, one 15 ft. and the other 50 ft. in depth. More attention has been paid to the White Swan, and the main shaft, equipped with a 40-hp. steam hoist, is now down 140 ft., with a level at 80 ft. some 150 ft. in length, run on the ore. Another level is just being begun at the 140, and large masses of ore are being encountered.

For treatment, the ore will first be taken to the old lead mill, of 50 tons daily capacity, about $1\frac{1}{2}$ mile distant, which is being remodelled and equipped with four new A & E slime tables, where it will be given a straight concentration. These concentrates will then be hauled to Cutter, 12 miles distant, where the company is now preparing to erect a \$100,000 leaching plant, consisting of 10 leaching tanks, 2 evaporating furnaces and 1 calcining furnace, where the lead sulphides will be separated and shipped to the paint manufacturers, and the vanadium pentoxide prepared. The daily capacity of

mas district are controlled by the Vanadium Queen Mining Co., which has been devoting its entire attention to the prospecting and development of the properties and the testing and analyses of its ores, before deciding upon the type of plant to be erected. After careful experiments the management has decided to erect a plant of 1000 tons daily capacity on the banks of the Rio Perche, which flows through the property for a distance of about 2400 ft., giving a copious supply of water for all milling and domestic purposes.

The properties consist of 20 contiguous mining claims, and extending in an unbroken chain for about 3 miles, in a northwesterly by southeasterly direction, through which runs a well-defined contact vein, lying between lime and shale and showing numerous outcroppings. Various openings, such as 30-ft. shafts and tunnels, have been made along this vein, and have conclusively shown that a continuous body of vanadium-bearing ore extends for a length of about 3 miles. The greater portion of the development work has been done on the Perche mine, which lies just south of the river. The main shaft has been sunk to 115 ft. to connect with a 300-ft. tunnel run into the hillside below, which can be used as the main exit for ore, if desired. Above this is another tunnel some 200 ft. in length, which also connects with the main shaft. Other levels have been run north and south, connecting with this shaft, from which drifts have been extended some 400 ft. irregularly, east and west, along the shale-lime contact, disclosing the lead vanadates in an unbroken vein, varying from 3 ins. to 3 ft. in width. Considerable work has also been done on the Metamorphic, on the north side of the Perche, showing the same character of ore, 12 ins. in width, while some 500 ft. of openings upon another claim, nearly all in ore, have shown the ore to be in part a sulphide and in part a lead carbonate, the vanadium content assaying from 3.25 to 7.25% metallic vanadium.

Considerable ore has thus been blocked out, and when the mill is put into commission there is little doubt but what the Perche and Metamorphic, the nearest mines, can alone furnish a large proportion of its daily capacity, not to mention the enormous amount of ore which can be supplied by the development of any of the other openings along other portions of the vein.

Mines Hospital at Cobalt.—The Red Cross hospital at Cobalt, to which nearly all the mining companies in that camp subscribed, and which is now operated by the Cobalt Mines Hospital, Ltd., brings no profit to the company. Whatever surplus may accrue is devoted to improvements or reduction of fees. Each company subscribed for shares of stock *pro rata* with the number of men it employs, and is assessed 50 cts. per man per month for the support of the hospital, for which they received full hospital privileges in case of injury or illness.

During the first six months of 1910 Italy imported 4,539,712 tons of coal.



Coal Issuing from the Hopper to the Scraper Conveyor Line.

county, one in the Caballos district, on the eastern slope of the Sierra de los Caballos, and the other amid the foothills of the eastern slope of the Black range in Las Animas district. These properties have been carefully prospected and are now being opened up, and both managements are planning the erection of reduction plants and the production of vanadium pentoxide, the commercial form of vanadium, in large quantities.

The Vanadium Mines Co.'s property is in the Caballos district and is now the scene of much activity, owing not only to the development work on the White Swan mine, but to the remodelling of the old lead mill, the erection of offices, laboratories and other buildings, and the installation of power lines.

The vanadium-bearing ore occurs in two parallel true fissure veins, lying about a quarter of a mile apart, and known as the Dewey and the White Swan. They run in a northeasterly by a southwesterly direction cutting across the limestone, and are between 300 and 400 ft. in length.

this plant will be 2000 lbs. of pentoxide. The situation of the reduction plant at Cutter is most fortunate, as this town is located on the main line of the Albuquerque & El Paso division of the Santa Fe, at the junction of the branch railroad to the Elephant Butte dam, which is the largest irrigation project yet attempted by the Reclamation Service, and excellent water is to be obtained in abundance at a depth of about 100 ft.

The various buildings and offices of the company are connected by telephone lines, and electric power, lights and water are supplied by a power plant situated about 5 miles east of the mine, on the edge of the Jornada del Muerto, where are three excellent 300-ft. wells. Two 125-hp. horizontal tubular boilers have been installed to operate a 200-hp. Monarch Corliss engine, direct connected with a 110-kwt. A. C. generator, which is to supply all electric power. Water is pumped to the various parts of the works by a 12 by 4 by 12 steam pump.

So far as can be learned, the entire

End Caballo mtns
Section
Begin Hillsboro section

* This is Macy's mine
not Caballo area!

2
Mining Work
has run together
two different
articles by
Leatherbee!
Seems like
Leatherbee
was his
editor's!