

# BONANZA MINE, WORLD'S RICHEST COPPER DEPOSIT

Ore Is Copper Glance, Technically Known as Chalcocite, and Outcrop Shows 8,000 Tons of Product in Sight--Extensive Development Work in Progress.

The Bonanza mine, situated on a high ridge between McCarthy creek and the Kenecott glacier, in the Copper river country, was discovered by C. L. Warner and Jack Smith, in the month of August, 1900. These men formed one section of a company of ten prospectors, who were endeavoring to prospect the whole Chittyna country. They located a number of claims in the names of the whole company, and on their return to Valdez, a deed was given Captain Abercrombie for an equal interest "for services rendered," making eleven original locators in all. Among the ten in addition to Warner and Smith were Millard, Amy, Fitch, McClellan, McNeer, Gates, and two others. Nothing was done the first year, except to carry away some of the rock as specimens and advertise the find broadcast. In 1901 Stephen Birch, the present manager, acquired his interest by purchase and the property was visited by two mining engineers, J. S. Fursca for a San Francisco company, and Alfred B. Iles, representing a New York syndicate. The following winter the property was transferred to the Haveneyers of New York, and active operations began which have continued ever since.

The Bonanza is considered to be one of the greatest copper deposits ever found. The ore is copper glance, or chalcocite, and samples across the entire outcrop, which varies from 4 to 12 feet of solid ore, average 77 per cent copper and 20 oz. silver to the ton. The ore body has been exposed by erosion of the limestone, in which it occurs, leaving it a cracked-up mass that needs only a sledge hammer to get it ready for transportation to the smelter. Experts vary as to the amount of ore lying there as Nature mined it, but the most conservative of them places it at 8,000 tons. This of course represents only the ore on the surface, and has no relation to that developed under ground. There is also a large tonnage of concentrating ore, and still another source of wealth in the slide rock which has caught hundreds of tons of the float ore as it broke away from the lode above.

The vein is supposed to be a true fissure, but as to that fact, even if it were true, adds nothing to its value as a mine. In our mind it is simply a replacement of the copper which permeates the greenstone all through that district. The waters of the thermal springs have dissolved the particles of copper in the greenstone and loaded with the mineral they have followed the fractures in the earth's crust in their travels to the surface. When descending waters impregnated with lime meet the ascending warm waters loaded with copper, the result is easy to forestell. However, the ore is there and so far its limit has not been reached, which fact is much more interesting than the story of just how it happened, which is only a supposition anyhow.

Two years after its discovery, this great property became involved in litigation, eventually falling into the hands of the present owner, the Kenecott Mines Company. Under the terms of a contract on file in the Valdez recording office, the Kenecott Mines company agrees to deed a 40-per cent interest in the Bonanza and contiguous claims to Daniel Guggenheim and associates, in consideration of which the latter are to furnish transportation facilities for the mine product from the property to tide water before the end of the year 1910. This is the incentive for the construction of the Copper River & Northwestern railroad, now building from Cordova.

Experts of the mining world have inspected this property, and the estimates of the ore in sight range as high as \$20,000,000 in value. Extensive development is now in progress, and by the time the transportation facilities are furnished the mine will be ready to produce a daily tonnage. Last winter machinery for an aerial tram was freighted in and the tram placed in position during the summer season. A large sawmill has been built, substantial buildings constructed, wagon roads made and everything is practically in shape, or will be, at the first foot of the locomotive. Several hundred tons of supplies are now being freighted to this property by the old reliable double-enders from Valdez.

F. H. Moffit and A. G. Maddren, geologists of the government, made a comprehensive report on the Bonanza, which they describe as the largest and richest body of ore in the country, and the ore in sight amounts to "several hundred tons," which, for government officials, is saying a good deal. This ought to be interesting stuff for the Guggenheims, who are spending fifteen or twenty millions on a railroad in order to bring out those "several hundred tons of ore."

**Interior Copper Fields**  
Encouraging copper prospects have been found on the Kotsina, one of the best known being the Crawford properties. On the Chitty and on Barrett creek, tributaries of the Kotsina, bor-

found, but no important sulphide discoveries have yet been made. Roaring creek, a close neighbor, has several fine showings which only await the hammer and drill to transform them into productive properties. The Elliott creek basin was first exploited in 1899 by Hubbard & Elliott, and discoveries of copper are reported by them.

**Alaska, the Golden**  
Alaska the Golden is becoming a land of rare surprises. Neglected and abandoned for years as an almost out-cast territory, it is now rapidly coming into its rich and glorious heritage. If the present rate of progress is kept up for a decade, and there appears to be no reason why it should not continue, Alaska will be found knocking for admission to the Union as one of its richest States. There is enough quartz and placer mining in Alaska to keep half a million miners busy for a century; there is sufficient coal, copper, and other minerals to keep busy another half million of miners for the same period, and, strangest of all to the uninitiated, investigation has shown that the fertile valleys of that far northern country will support 500,000 prosperous farms and homes. The government agricultural station

# FIRST COPPER LOCATION IN COPPER RIVER BASIN

Nicolai Property Was First Claim to Be Staked, It Being Pointed Out to Millard-McClellan Party by Old Native Chief, Who Received Gifts of Food.

Col. B. F. Millard, R. F. McClellan, James McCarthy, Edward Gates and A. H. McNeer are generally accredited to be the men who first attracted public notice to the mineral resources of the Copper river country, by the location of the Nicolai mine in the year 1898. The Nicolai mine is named for Chief Nicolai of the Taral Indians, who pointed out the vein to Lieut. Allen and party in 1886. The property was not located, however, until

though less prominent, also contain copper minerals, and the rock between is cut by many stringers of ore. In the vicinity of the shaft the main vein has a width of from 8 to 12 feet, and is divided about equally by a horse of greenstone 3 to 4 feet across in which the shaft has been sunk. The ore on either side of the horse is practically pure bornite, with only a small amount of quartz associated in an irregular way. Locally, as shown



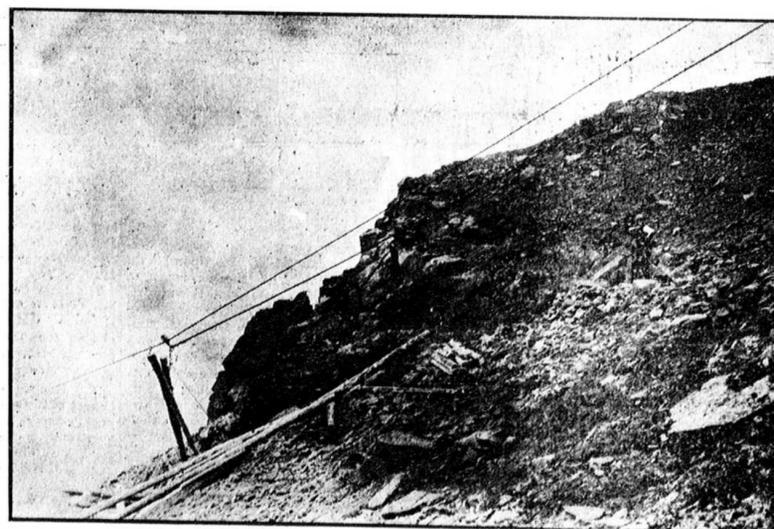
Cabin at Bonanza Mine which cost \$14,000



Family of Copper River Settlers



Interior Headquarters of Kenecott Mines Co., center of Bonanza Mine



Bonanza Mine and Aerial Tram Leading from it to the Valley Below

show valuable ore bodies, but like all the other claim owners of the district are awaiting the advent of a railroad before they can send their ore to the smelter.

**Native Copper**  
On Kluyvesa creek is the identical formation of greenstone carrying native copper that is seen all over the Wrangell district. It occurs in bedded planes, and sometimes, as on the Lakina, it can be followed for a thousand feet, and varying in width from a few inches to 40 feet. The copper occurs usually in small particles scattered profusely through the rock, but along the bed of the zone the copper appears in large nuggets, sheets and all kinds of fantastical shapes, as if the hot metal had fallen through water and settled at the bottom of the pot. The large nugget on Nugget creek and the nugget copper which clogs the sluice riffles on the Nizina all have a common origin, which will be found in the altered diabase, or as the boys in the interior prefer to call it--amygdaloidal greenstone. The writer has sampled this rock by pan concentration in many places with almost invariably the same results--3.3 per cent in the tailings after washing off the free copper. This is not a very close saving, but serves to show what a field for concentration there is awaiting the enterprising mill man in this unlimited field. The free copper washed off varied from 4 to 10 per cent of the rock crushed. The Calumet & Hecla stands off the sheriff by milling anything from 1 per cent up, and the rock is the same as in the Chittyna; if it would send one of its stamp mills over here it might be able to pay a dividend.

The Strelina is another creek on which important copper strikes have been made. Strelina was the first creek on which native copper was

at Copper Center has demonstrated that wheat, oats, barley, and practically all of the common garden vegetables can be grown to perfection in the rich virgin soil of Alaska.

Railroad development is all that is needed to bring about a wonderful transformation, and already lines of steel are penetrating into this new empire. Frederick H. Chase, in a current review, says: "Alaska has more gold than ever had California, Australia or South Africa; it has more copper than twenty Buttes; it has more hard coal than Pennsylvania, and it has more tin than Wales. The hay that rots on its tundras and plains would fatten all the cattle that roam on the plains of Kansas, Oklahoma and Texas. And their the wild, fertile, untouched plains and valleys await the ax, the spade, the plow, and the reaper of half a million American farmers."

Three railroads are now being constructed from points on the Pacific coast to the interior, and other projects are under consideration. The roads now being built are the Alaska Central, from Seward; the Valdez-Yukon, from the head of Port Valdez, and the Copper River & Northwestern at Cordova, on Cordova bay. The completion of any one of these roads to the Yukon means the opening to settlement of an agricultural and mining territory larger than Texas. But the primary object of the railroads is the development of the copper and coal fields, said to be among the richest in the world. One of the bridges on the Cordova road, it is stated by the engineers, will cost \$2,000,000, good evidence that some one believes in a rich and prosperous future for the territory.

A new era is dawning for Alaska, and it may not be long before the vote from beyond the Arctic circle will be a more or less decisive factor in the election of a president of the United States.--Washington (D. C.) Post.

The Millard-McClellan party did so in 1898. The old chieftain, in consideration of gifts of food, was induced to reveal the location of the mine to Millard and associates, who realized its value, regardless of its inaccessibility. Walter C. Mendenhall, a government geologist, thus describes the property which was responsible for the later discoveries in the Chittyna region:

"The Nicolai mine is near Nicolai creek, a tributary of McCarthy creek, and is situated 1,000 feet or more above timber line, at an elevation of 4,200 feet. The country rock in the lower part of the creek is Triassic shale intruded by porphyry, but a great fault brings up the Nicolai greenstone, which forms the bed rock from the vicinity of the main forks of the creek to a point above the mine. On the south side of the gulch, opposite the mine, the greenstone is opposed by the unconformable beds of the Kenecott formation, but to the north the Chittistone massive limestone is seen dipping steeply into the mountains, and this is followed by the Triassic shales, covering a large area between McCarthy creek and Nizina river.

"The vein occurs in the greenstone at a horizon not more than 50 feet below the bottom of the limestone, which outcrops in the creek bed a few hundred feet above the shaft. It is a true fissure vein, with well-marked walls, and there has been displacement along the vein to the amount of perhaps 50 feet, with the upthrow on the northwest. The vein may be traced for several thousand feet, though it shows no ore on the surface except near the place of discovery. The main fissure is parallel at a distance of 90 and 140 feet, respectively, by two fissures which,

near the creek bed, there is a band of chalcocite lying next to the hanging wall. Ore having a thickness of from 2 to 4 feet has been exposed, and in the bottom of the shaft the horse has been penetrated and hornite ore was found on the foot wall side. The development has been sufficient to show the presence of a large chute of ore which can be mined from the present shaft or from a short adit which could be driven to cut the vein at a depth of perhaps 100 feet, but whether the ore is generally distributed or whether there are other large ore bodies along its course is yet to be determined.

"Rich deposits of native copper are reported to occur at the headwaters of the Chittyna river, and since the geological structure of the region adjacent to the west indicates the probable continuation of the greenstone belt into this region, it seems likely that workable amounts of copper will be found there. The region lies directly between the exposures of greenstone on the Nizina and those which carry native copper at the head of White River across the intervening range."

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References: The White Co., S. Blum & Co., Bankers Owl Drug Co., Ostrander & Donohoe, Attorneys



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