

Native Copper Mining Artifacts

by Dave Johnson

The Copper Country of the Upper Peninsula of Michigan is unique in its' copper deposits. While other copper mining districts have produced native copper, none have produced it in anything approaching the amount mined in Michigan. The deposits are broken into three types - amygdaloid, conglomerate and fissure (or mass).

The term amygdaloid is of Greek derivation and means almond-like. In these deposits the native copper is found in sizes from less than pinhead to rather large pockets. Mineral rock shot through with mere specs of copper had to be stamped to sand-like consistency in order to wash the worthless rock away from the metal, this required stamp mills. Better than half the copper taken from Michigan mines came from amygdaloid deposits. An early successful amygdaloid mine was the Isle Royale, located near Houghton, better known and much more successful was the famous Quincy Mine, at Hancock, working the Pewabic Amygdaloid Lode.



Copper Nail: The cavity left where a drill was stopped in the copper. When the bit is extracted it leaves a "nail" where the center hole of the bit was

Conglomerate deposits consist of boulders, gravel and sand all cemented together by native copper. The successful conglomerate deposits produced many more pounds of copper to the ton of rock mined than amygdaloid deposits. The rock removed from the conglomerate deposits was harder and required better equipment than was available in the early stamp mills which were able to work the more friable amygdaloid rock. In the Copper Country all material removed from the mine is termed "rock" with no distinction made for "ore" as in other mining areas.

Until the discovery of the famous Calumet Conglomerate Lode the known conglomerate deposits were small and could not be worked at a profit. It was the development of the Calumet Conglomerate that turned the Copper Country into one the greatest copper producing areas of all time and Calumet & Hecla into one of the greatest copper mining companies.

The third type of deposit, and the one we are most interested in here, is the fissure or mass deposit. It was these deposits that started the Copper Country on the road to greatness. Mines like the Minesota, Central, Cliff, Mass, Evergreen Bluff, National, Rockland, and Bohemian, all early producers, were mass mines.

In 1856, the Minesota Mine rocked the mining world when it found a single mass of solid native copper argued at the time to weigh between 420 and 550 tons. To give some idea of the immensity of this mass one need only to look at its' dimensions, which although irregular were immense. Measuring in at 46 feet in length, 18 feet at the widest point and 8' thick at its' thickest, it took 20 men laboring for 15 months, using 2,750 pounds of black powder, to free it from surrounding rock so that the process of cutting it up could begin.

At this time the only method of cutting up these masses was with two and three man drill teams using a 3/4" wide chisel of varying lengths. As the chisel was driven into the malleable copper a strip about 1/4" thick was peeled off the mass. When several strips had been peeled off they were struck at the bottom and a fan of chiselings resulted (see photo).



A chiseling fan: when native copper was removed by chiseling, this is an artistic result.

This process was repeated until a manageable chunk of the mass was cut free and could be hoisted to the surface. A good days work was considered to be the exposing of a single square foot of surface. Walking along the surface at several of the mass lode mines I have picked up dozens of individual chiselings from 1' to 10" in length with the use of a metal detector, but have only found one chiseling fan.

When the mass in the Minesota Mine was finally removed, 27 tons of chiselings had been shipped in barrels. The Minesota Mine was blessed or cursed, depend-

ing upon your point of view, with huge masses of native copper. When Number 2 Shaft was sunk a mass of copper was struck at the 60 fathom level that required a year to cut through. The Minesota ever-after had the distinction of being the only copper mine with a shaft lined with solid copper. By 1867 the Minesota Mine had paid out \$1,760,000 in dividends

Other early mines had similar experiences similar to the Minnesota with mass copper. The Quincy Mine produced a mass of 300 tons, the National Mine 200 tons, Flint Steel Mine 125 tons, Aztec Mine 100 tons, Mass Mine 80 tons and the Rockland and Caledonia Mines each produced a 40 ton masses.

The Cliff Mine, the first in the Copper Country to pay a dividend to investors, in 1849, had three-quarters of all copper taken from its' workings in the form of masses weighing from 1 to 100 tons with one mass weighing in at 1800 tons. This 1800 ton mass was actually several large masses held together by stringers so it cannot be considered a single mass. The Bay State Mine produced a 600 ton mass that was also several masses connected by stringers. Whenever the discovery of a large mass of copper was reported there was a jump in price of that company's stock.

Hand drilling through native copper of any significant thickness was a difficult task due to the malleability of the metal, it did not powder like the rock under the blows of the sledge-hammers. Even with the development of air-powered drills the malleable native copper plagued the miners. A common occurrence was for the drill bit to become imbedded in the copper and break off in the hole. I have personally over the years picked up numerous pieces of copper while digging through the mine dump piles that had drill marks where the drill bit had stopped in the copper. These drill marks are sought by collectors and bring a premium price for local rock shops. Even more sought after are what are known as copper nails, the point where a drill has stopped in the copper and when extracted leaves a "nail" where the center hole of the bit was. These pieces are extremely rare, I have only seen four examples of them in collections in all my years of hunting in the Copper Country and I feel fortunate in having been able to purchase one of them almost 30 years ago.

The copper nails and the copper chiseling fans are two unique mining artifacts that are an integral part of the mining history of the Michigan Copper Country. Unfortunately most of these artifacts were destroyed since they were the material that the miners sought to recover.

Sources:

Strangers and Sojourners by Arthur A. Thurner
Red Metal by Harry C. Benedict
Boom Copper by Angus Murdoch
The Copper Handbook by Horace Stevens
Minesota Mine Annual Reports 1866, 1872 and 1880