

# *Great Lakes Copper Research*



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# Great Lakes Copper Research Americas And The World

## MISSION STATEMENT

The purpose of Great Lakes Copper Research is to add to our reservoir of knowledge on the subject of man's early use of copper, his exploration, mining, trading, crafting and use of copper, firstly in the Great Lakes area, secondly in the Americas, and finally in the world.

In pursuit of this knowledge, Great Lakes Copper Research will:

1. Collect and archive historical documents and research material relating to prehistoric use of copper.
2. Supply a repository for artifacts relating to copper mining, crafting and use.
3. Provide library services and materials pertaining to the early utilization of copper.
4. Furnish a museum for public display of copper and copper related artifacts to increase interest in this area.
5. Advance the study of early copper related subjects matter by providing facilities and scholarships to students for the study of copper related topics. Make grants to universities and individuals to complete carbon testing and other costly procedures relating to the advancement of knowledge about early copper use.
6. Train and provide public speakers on the subjects of early copper mining, manufacturing and use.
7. Engage in all other tasks to advance knowledge about the early use of copper in man's history.

We believe the study of early copper use will significantly increase our understanding of human development.

Great Lakes Copper Research  
7890 West Leonard Street  
Coopersville, Michigan  
49404

616 837 8468  
tomotr@aol.com

## **NEW FACTS ABOUT OLD COPPER ARTIFACTS**

By  
Don Spohn

Great Lakes Copper Research hosted a conference on Native American Indian copper on March 19 through March 21. This first copper conference was improvised when copper enthusiasts, Steve Livernash and Steve Miller, from the Copper Culture Club of Wisconsin suddenly became available. On short notice, we invited as many of our Coffinberry members as we could reach. Five Coffinberry members plus Jack Koopmans' dad and Don Spohn's wife were in attendance, together with a few representatives from other Michigan organizations.

Greg Baldus exhibited a copper point found on his land along the Grand River. Several pieces of copper, all Michigan finds, found by Jack Koopmans were exhibited. Mr. And Mrs. Don Vandyke from Grand Rapids brought a dozen personal finds from Michigan. Don Spohn exhibited prehistoric copper from many different states while Steve Livernash and Steve Miller exhibited copper from central and northern Wisconsin. Brian Geib exhibited a select group of non- copper objects from Michigan. Our guests from Wisconsin also exhibited many fur trade and Civil War area items. Between three and four thousand copper items were exhibited and some noteworthy copper findings were reported for the first time.

### **Water Recoveries**

Steve Livernash and Steve Miller exhibited water finds and reported on significant characteristics, often very different from dry land copper finds. Copper artifacts, which rested in water for hundreds, and even thousands of years, are sometimes recovered as shiny as a new penny, often completely free of patina.

The movement of water and sand thins water-copper, and often washes away creation marks, removes erosion patterns associated with pounding and annealing, and can produce glassy smooth surfaces with sharp regular outlines. Knife blade edges may remain surprisingly sharp. Archaeologists and collectors sometimes mistake water-copper for reproductions.

Newly salvaged shiny copper begins to darken in the weeks and months following its recovery. Most pieces eventually turn very dark or black in color, while some few pieces turn brown or green.

*Two Water Finds From Wisconsin*



*Two Knives, Bottom Fish Knife, Perhaps Hopewell*

Newly recovered, shiny, copper pieces with defused lap lines often show a black patina between opened laps.

### **Demonstrating A Theory**

Greg Baldus demonstrated one of Don Spohn's theories on the creation and use of extemporaneous copper tools. See photograph below. As prehistoric miners pulled rough sharp chunks of copper from its matrix in the ground, they scoured and prepared it for storage and shipping. This involved creating compacted base ingots.

To create base ingots miners folded in and pounded down rough sharp edges, protrusions and appendixes, making it compact and safe for storage and shipping. In this process, Don theorized, miners sometimes created



extemporaneous tools. Extemporaneous tools were created on base ingots, bar ingots and raw copper for immediate and temporary uses, and included knapping tools. Don believes that in his study of modified copper, he has also found an assortment of extemporaneous tools. These include hammers, anvils, mandrels, drills, punches, scrapers, and more, all created by ancient miners and coppersmith and found today on base ingots and other forms of worked or modified copper. Knappers appear to be the most common extemporaneous tools found among mining and workshop caches of modified copper.

*Greg Baldus*



*Knapping*

*with a  
Prehistoric*

*Copper Tool*

Greg used one of Don's prehistoric extemporaneous copper tools to discover if the tool, a base ingot with an attached, hardened protrusion could have been used to knap chert arrowheads. He used the ancient base ingot

pictured below as a hammer stone or percussion hammer and its protruding appendage as a pressure flaking tool. Using only this prehistoric extemporaneous tool, Greg successfully knapped the arrowhead pictured below. He is probably

*A Base Ingot With An Extemporaneous Tool*



*Chert Arrowhead Produced With A Prehistoric Tool*

the first man in modern times to do so. And he proved that Don's theory is possible.

### **The Mandrel's Use In Coppersmithing**

Scholars have long puzzled over the technologies involved in crafting sophisticated prehistoric copper implements. In examining conical points and sockets found on tools and weapons, it was obvious that some form of tool was required to create complex sockets. Stone mandrels were suspected, but we have no recovered examples of stone mandrels or if recovered, they have not been recognized. If organic materials were used for this purpose, they may have worn out or deteriorated over time.

*Copper Conical Point with Copper Mandrel*



*Recovered by Steve Livernash, Vilas Co., Wisconsin*

At the Great Lakes Copper Research Copper Conference, copper mandrels were reported recovered for the first time. Don Spohn exhibited a suspected

*Copper Spud With Copper  
Mandrel Used To Form Its  
Socket*

copper mandrel candidate, but CCC members from Wisconsin actually recovered a copper mandrel remaining in a copper conical point. Steve Livernash found two more copper conical points and their copper mandrels lying side by side, both from Vilas County, Wisconsin.



Vilas County also produced copper spuds and what may be copper mandrels for those spuds. It may be that copper was the resource favored for mandrels by coppersmiths. There are three possible reasons for this choice. First, copper was the most available resource at copper mines and in copper workshops. Second, coppersmiths may have found copper the best consistency for shaping sockets around; and finally, Trevelyan, 2004, considers copper a most ritualistic medium. Coppersmiths may have felt spiritually and culturally obligated to use copper as mandrels, even if another medium worked better. Jack Koopmans assisted in researching mandrel technology.

**Old Copper Complex Coppersmith Shop**

Steve Livernash excavated and preserved the first Old Copper Cultural complex coppersmith workshop. The workshop included a stone anvil, 41 modified pieces of copper and a stone celt. Recovered pounded pieces of copper fit perfectly into imprints on the stone anvil's work surface. Imprints were impressed in the sand stone anvil as copper was hammered into shape.



Imprints found in the top of the anvil are the shape of the worked copper's bottom. These imprints are not molds or swage pits, but simply the results of pounding copper on the anvil's surface and proof of the stone's use as a copper-crafting anvil.

Steve Livernash exhibited the workshop and explained how it was used. He found this workshop, anvil, stone hammer and 41 modified pieces of copper all within an area a little over the size of a basketball. The bottom of the anvil was recovered 15 inches below the surface. Fourteen pieces of the worked copper remained on top of the stone anvil. See photograph below. Steve found another 30 worked pieces and the stone celt nested around the foot of the anvil. He preserved each group in separate containers.

*Coppersmith Workshop*



*Notice Imprints From Hammered Copper*

This ancient workshop is a snapshot from our prehistoric past. A primeval coppersmith stood up one day, walked away from his work, never to return. Several thousand years later, Steve was the next man to touch these artifacts.



We can thank the ancient craftsman for leaving his workshop for us to study, and we can thank Steve Livernash for recovering and preserving what would otherwise be lost.

As far as we know this is the first copper workshop to survive modern road building, farming, and commercial and residential construction. In recognizing and preserving this workshop, Steve is one man out of many thousands. Countless other copper workshops have been unknowingly destroyed.

An Ancient Copper Mining Pit



Michigan's Upper Peninsula

Many of the hammer stones used in ancient open pit mining are still found in pits like the one above. It is generally agreed that such pits produced copper as early as Archaic times and were still in use during early contact times. Periods of times may have existed between these two dates when the mines were not used. All successful modern copper mines were built over these ancient mining pits.

## About The Cover Picture

The copper projectile point on the cover is pictured life sized. It is one of two nearly identical points found near Three Rivers, Michigan in 1943. Nearly 8 inches long, 3 1/2 inches wide and 1/8 inches thick, it weighs nearly a pound. This type of point is named the Pine Tree point although it was probably used as a knife.

Pine Tree points are associated with the Hopewell culture. This point and its twin mate, (see photo below) both lack the erosion pattern often associated with some Pine Tree Points and other early Hopewell copper artifacts. Based on these facts we believe these artifacts were probably crafted around 1 to 500 AD. This point is pictures in Who's Who In Indian Relics, No. 7, page 179, by Ken Spaulding. Both pieces are owned by Great Lakes Copper Research.

*Second Pine Tree Point Reduced By One Fourth*



*Mate To Cover Photo Reduced By One Fourth*

Our first copper convention was a fantastic success and we anticipate scheduling a second such conference on Native American Indian copper in 2006. We hope even more can contribute to and benefit from our next copper symposium. In the meantime Great Lakes Copper Research welcomes knowledge of Native American Indian copper from all sources.