Wisconsin’s Copper Complex

There is no specific date or single diagnostic copper artifact has been found indicative of what is often referred to as the “Old Copper Complex” in the Great Lakes region. The majority of copper implements found in Wisconsin from the Archaic are from surface and non-contextual finds that were heavily collected in the 19th century (Martin 1999). Very few sites with in-situ copper artifacts have been excavated; this makes the placement of much of the copper industry in a specific period difficult.

Composition

The Great Lakes region has a long tradition of native copper use in the manufacture of a variety of tools and ornaments. Copper was mined in the Lake Superior area; mainly what is now Michigan and Ontario. The Keweenaw Peninsula and Isle Royale boasted “…veins of 99% pure outcrop naturally (Stoltman1986:221)”. Schroeder and Ruhl (1968) note that the copper they used in their study from Ionia County, Michigan had trace elements of silver in it at 0.025%.
Mining

Early Native American mining activity has been observed in the Lake Superior region. Deep tunnel mining was not used as it is today, but some digging to obtain copper is noted in the archaeological record as well as techniques for extraction. “As evidenced by thousands of open pit mines, some over 20 feet deep, we also know that the Indians extracted the metal via the simple technique of lighting fires to heat the surrounding rock and then by throwing cold water on the rock causing it to crack, then freeing the copper with the aid of stone hammers” (Stoltman 1986:221). Copper nuggets could also be found in glacial deposits further south from their originating sources. This would have most likely occurred during the Upper Great Lakes Post-glacial period during which there was a warming trend which lines up with Old Copper Complex activity (LaRonge 2001).

Working Native Copper

Native copper is soft and malleable due to its purity and can be cold forged or annealed before working. Annealing makes copper easier to manipulate and less prone to fractures, but here is evidence for use of both methods prehistorically (LaRonge 2001).

Copper Cultural Context

The highest concentration of copper artifacts is most notable in eastern Wisconsin. High concentrations found in several sites around southeastern Wisconsin suggest a very active copper industry in the Great Lakes region (Wittry 1951). The archaeological record shows a change in how copper was used over time. According to Stoltman the Middle
Archaic period (ca.3000 B.C. – 1200B.C.) in Wisconsin is associated primarily with utilitarian use of native copper for the manufacture of tools such as fishhooks, awls, needles, points, etc. The Late Archaic (ca. 1200 B.C. – 800/1 B.C.) shows a noticeable decline in copper tools with an increase in copper ornamental objects such as beads, ear and hair ornaments, the exception appears to be awls (Stoltman, 1986). Another shift in technology is in projectile points, “Accompanying this apparent decline in reliance upon native copper was a notable shift in projectile point styles from various Middle Archaic side-notched forms to generally stemmed forms” (Stoltman1986:227).

Copper implements are found in association with Middle Woodland burial sites however, often as decorative or ceremonial pieces rather than utilitarian artifacts (Salzer n. d.). After A.D. 1100, with the appearance of Oneota groups in eastern Wisconsin, copper as a utilitarian tool form returns (Hall 1962; Overstreet 1978).

**Crescent Bay Hunt Club and Carcajou Point 2002 Field School Season**

The Crescent Bay Hunt Club site (47Je904) is on private property in Jefferson County situated on a north-south ridge above marsh lands near the west shore of Lake Koshkonong (see Jeske 2000 for excavation and background information). Culturally it is classified as a Developmental Horizon Oneota Site (Jeske 2000).

The Carcajou Point site is located near Lake Koshkonong in Jefferson County. Most of the area has been subjected to cultivation (Hall, 1962); soil cover in the area of the excavation appears to have been thin. Carcajou has a long history of occupation and
excavation. The first published accounts of archaeological findings at this site were in 1890 by Stephen D. Peet. This site has been noted over the years for its abundance of trade items found in historic context (Hall: 1962). Carcajou is considered culturally connected to the Oneota tradition, but the Kelly North Tract contains deposits from the Late Woodland, Middle Archaic, and Early Archaic/Late Paleoindian periods.

Methods

The following is an analysis of the copper implements excavated during the 2002 field school season from the Crescent Bay Hunt Club Site (47Je904) and the Carcajou Point Site (47Je02). A total of 8 copper implements were recovered, 2 are from the Crescent Bay site (47Je904) and 6 are from Carcajou Point (47Je02) (Table 5.1 and 5.2) (Figures 3.34 and 5.1). Each implement is described by weight, length and width measurement in millimeters (rounded to nearest mm) where applicable and basic visual assessment. Cultural labels or types (fish hook, awl, gorge, etc) are based on Wittry’s (1951:1-18) typology descriptions and illustrations as well as definitions based on these types in Martin (1999).
Table 5.1 Crescent Bay Copper Artifacts.

<table>
<thead>
<tr>
<th>Implement</th>
<th>Weight (g)</th>
<th>Dimension (mm)</th>
<th>Field Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish hook</td>
<td>1.8</td>
<td>Length 42, Width (shaft) 2, Width (hook) 3</td>
<td>Unit 02.04 Feature 02-25</td>
</tr>
<tr>
<td>Wedge</td>
<td>22.9</td>
<td>Length 62, Width 12</td>
<td>Unit 02.04, Feature 02-10</td>
</tr>
</tbody>
</table>

Table 5.2 Carcajou Point KNT Copper Artifacts.

<table>
<thead>
<tr>
<th>Implement</th>
<th>Weight (g)</th>
<th>Dimension (mm)</th>
<th>Field Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awl 1</td>
<td>3.4</td>
<td>Length 59, Width 5</td>
<td>Feature 1</td>
</tr>
<tr>
<td>Awl 2</td>
<td>1.7</td>
<td>Length 49, Width 4</td>
<td>Feature 1</td>
</tr>
<tr>
<td>Socketed Point</td>
<td>12.8</td>
<td>Length 45, Width (shaft) 16, Width (side) 10</td>
<td>Block 2 Level 00 Area A</td>
</tr>
<tr>
<td>Gorge or Awl</td>
<td>2.1</td>
<td>Length 48, Width (tapered) 2</td>
<td>Block 2 50X50 cm</td>
</tr>
<tr>
<td>Gorge</td>
<td>.5</td>
<td>Length 35, Width 1</td>
<td>Block 2 Level 01</td>
</tr>
<tr>
<td>Copper Fragment</td>
<td>.2</td>
<td>Length 19, Width 2</td>
<td>Block 2 Level 01</td>
</tr>
</tbody>
</table>
Visual Analysis

The condition of the possible fishhook at the Crescent Bay Hunt Club site is poor. The lower part just after the curve of the hook is missing leaving firm identification as a fish hook open to argument. It is also devoid of surface salts. Corrosion of the surface sometimes acts to protect copper, and the lack of salts on this piece could have contributed to significant decay. The surface is very rough and porous. The color is a deep red with some small bits of dark purple/black oxidation perhaps a sign of exposure to high temperatures (Schroeder & Ruhl 1968).
A wedge was also discovered at the Crescent Bay site. The surface has a mild build up of green salts on it. The overall preservation of the wedge is good. The surface grain is much smoother compared to the fishhook. One end has some flattening and damage from probable striking; the other end is tapered to a wedge shape with more dramatic beveling and a distinct edge with no apparent signs of striking. The wear on this implement would be consistent with use as a wedge described by Wittry (Group VI) “... the basic tool is flat, thin and tapering, with the working edge perpendicular to the long dimensions of the tool (Martin 1999:235).

The gorges found at Carcajou Point show a variety of preservation levels. The gorge/awl is very porous and oxidized with few salts covering the outside surface; it shows a lower preservation quality that the smaller gorge and socketed point. It also has a dark red appearance with black oxidation on parts of the surface. The smaller gorge and copper fragment are less porous and appear to have suffered less corrosion. The gorge has been folded and flattened to create a taper on the ends. A gorge is defined as a “…curved copper rod made in variable sizes and shapes probably depending on what kind of fish were to be caught” (Martin 1999:242).

The awls from Carcajou Point are encased in green salts; only the tip of the ends are visible. The amount of preservation at this point cannot be fully assessed, but it appears that the basic squared shape found in these implements is present. Awls fall into Wittry’s Group IV, a group that includes a very basic description put forth by Martin (1999:229):
“This is a very general group which includes tools assumed to have a perforating or piercing function.” This group also includes punches, needles, drills, pikes and punches.

The socketed point found at Carcajou Point has a few surface salts on it but is in good condition with few major signs of corrosion and a smoother surface texture. Definite wear and use marks are not discernable. Projectile points are in Wittry Group I.

“Projectile points are the most commonly recovered copper implement in the northern Great Lakes. They were made in a range of forms: flat, conical, beveled and barbed” (Martin 1999:244-245). The point found at Carcajou Point would be considered conical.

Conclusions

The feature analysis for both sites from the 2002 season is not yet finished which makes analysis in feature context not possible at this time. The amount of cleaning the copper implements received in the field or previous lab work is unknown, this could affect approaches to further assessment based on oxidation build up. Micro surface structure and recrystalization would be a plausible next step in evaluating the condition and possible heat temperatures that the implements have been subjected to could help in context or age analysis (Schroeder and Ruhl 1968).