

17th Century Indian-Colonial Trade in Indiana



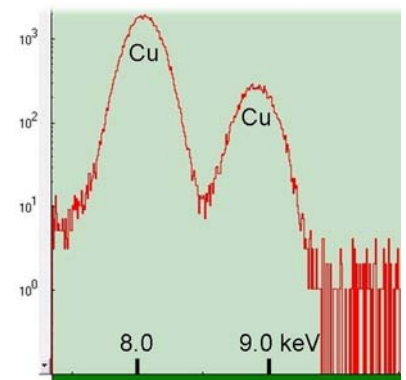
Two samples, a copper tinkler, presumably from necklace, and copper bracelet found at archaeological site in Western Indiana

When Europeans and Native Americans encountered each other in North America during the seventeenth and eighteenth centuries, a fur trade developed that dramatically transformed the lives of people from both continents. Furs and other natural products flowed to Europe in exchange for manufactured articles, the most important of which were made of metals such as brass, iron, and silver. Archaeologists like to explore the manufacturing sources and trades routes of metal objects which are largely unknown, and thus their ability to tell us about economics and cultural connections remain almost completely unexploited.

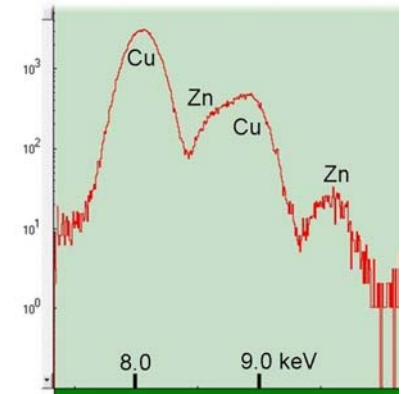
In collaboration with the Department of Anthropology a program was initiated at the Notre Dame accelerator facilities to analyze the composition of copper samples of Western Indiana native heritage. The goal is to determine the provenience of the material and provide information of 17th -18th century cultural connections and trading patterns between Western Indiana and the British and French Colonies. Native material is made of pure copper, presumably from the upper Great Lakes regions, material of European-Colonial heritage is characterized by Zn content (brass).

Proton Induced X-Ray Emission (PIXE) is a unique tool for determining the composition of metallic archaeological samples. A 2 MeV proton beam from the KN Van de Graaf accelerator was exited to atmosphere through a differentially pumped windowless gastarget system. The samples were positioned 3cm in front of the exit aperture. The characteristic X-ray spectra were obtained with a Si(Li) detector. The initial tests were very successful. Two artifacts thought to have been made from the same sheet of brass were found to have separate origins. While the x-ray spectrum of the tinkler resembled native copper from the upper Great lake regions, the bracelet sample showed clear evidence of Zn indicating European Colonial origin.

This project was supported by the National Science Foundation under NSF Grant PHY04-57120.



Characteristic X-ray spectrum, from tinkler, indicating native copper.



X-ray spectrum of bracelet indicating Zn content in the material, suggesting colonial origin.

Researchers:
M. Schurr¹, E. Stech², J. Görres, L.O. Lamm, M. Wiescher²,
¹ Dept. of Anthropology, Notre Dame
² Dept of Physics, Notre Dame