

## HISTORY IN LEAD AND LEAD POISONING IN HISTORY

JEROME NRIAGU

*Department of Environmental Health Sciences, School of Public Health, University of Michigan,  
Ann Arbor, MI 48109, USA. E-mail: jnriagu@umich.edu*

ABSTRACT.—Lead ores were probably the first to be refined to the metallic state, hence the production and use of lead have been intertwined with the history of human culture for a very long time. Although there was never a “Lead Age” (lead romanticism did not dominate any period of human history), lead and its compounds were nevertheless present in all the metal ages and have certainly played important roles in industrial, scientific and military progress as well as in trade, material comfort, human vanity and curing of diseases. The use of lead had reached such an impressive level by about 2,000 years before present (estimated at 550 grams per capita per year) that lead is oftentimes referred to as a “Roman metal.” The massive demand for lead that began subsequently with Industrial Revolution continues unabated until modern times. Throughout human history, it is estimated that over 350 million tons of lead have been mined, used and ultimately discarded in the environment. More lead has been discharged into the environment than any other toxic metal, and the consequences of this continuing human experiment of fouling our nest with lead remain to be fully understood. My presentation will focus on three periods in human history when lead poisonings were particularly pandemic: (a) Ancient Time especially during the Roman Empire period when many aristocrats were heavily exposed to lead in their foods and drinks; (b) Middle Ages when the adulteration and contamination of foods and wines were again rampant and saturnine drugs became a mainstay of the pharmacopoeia; and (c) Modern Times when poor people are being disproportionately exposed to lead in their environment. I shall let the dead in the cemetery population of Isola Sacra (in the outskirts of Rome) made up of middle class traders and craftsmen speak about their exposures during the 2nd and 3rd centuries AD through the lead in their bones. I shall talk about the mad and impotent princes (and princesses) of Europe during the Middle Ages and their affliction with gout of saturnine origin. I shall conclude with a brief discussion of changing phases of lead poisoning associated with environmental risk transition and how exposure of African children to lead in their environment may be altering the pathogenesis of some communicable diseases.

NRIAGU, J. 2009. History in lead and lead poisoning in history. Abstract in R. T. Watson, M. Fuller, M. Pokras, and W. G. Hunt (Eds.). *Ingestion of Lead from Spent Ammunition: Implications for Wildlife and Humans*. The Peregrine Fund, Boise, Idaho, USA. DOI 10.4080/ilsa.2009.0102

Key words: Lead poisoning, Roman, Middle Ages, modern.