



Origins of inhabitants from the 16th century Sala (Sweden) silver mine cemetery – A lead isotope perspective



T. Douglas Price ^{a,*}, Robert Frei ^b, Ylva Bäckström ^c, Karin Margarita Frei ^d,
Anne Ingvarsson-Sundstrom ^e

^a Laboratory for Archaeological Chemistry, Department of Anthropology, University of Wisconsin-Madison, USA

^b Department of Geosciences and Natural Resource Management, University of Copenhagen, Øster Voldgade 10, DK-1350, Copenhagen, Denmark

^c Department of Archaeology and Ancient History, Lund University, Lund, Sweden

^d National Museum of Denmark, Environmental Archaeology and Material Sciences, Ny Vestergade 11, 1471, København K, Denmark

^e Gustavianum, Akademigatan 3, 753 10, Uppsala, Sweden

ARTICLE INFO

Article history:

Received 29 February 2016

Received in revised form

19 December 2016

Accepted 20 January 2017

Keywords:

Medieval
Scandinavia
Isotopic proveniencing
Sweden
Strontium
Lead
Carbon
Oxygen
Silver
Mining
Mobility
Social identity

ABSTRACT

Historical documents record the operation of a silver mine from the 16th century AD located near the former village of Salberget in central Sweden. The historical record describes several categories of inhabitants, including local families, workers and miners, foreign engineers and mining specialists, as well as war captives and criminals used as forced labor in the mines. A church yard in the vicinity of the village served as a burial ground. Archaeological evidence indicates two distinct grave types (coffin and earthen) and physical anthropology documents differences in age and sex between these grave types, as well as harsh conditions of life. Strontium and oxygen isotopes have been used previously to investigate the place of origin of the cemetery inhabitants and clear differences among the types of graves were seen in the isotope results. Place of origin was more difficult to ascertain however. Here we utilize lead isotopes as an additional isotopic tracer to identify origins. The lead isotope investigations pinpoint several areas outside of the Sala region where some of the inhabitants originated. In addition, the study documents the benefits of using lead isotopes in human proveniencing studies.

© 2017 Elsevier Ltd. All rights reserved.

1. Introduction

1.1. Sala: village and cemetery

The Sala silver mine, located approximately 60 km west of the modern city of Uppsala, Sweden, was in operation from at least the late 15th c. to the early 20th c. AD according to historical records (Fig. 1). The mine was very productive for several centuries and finally abandoned in 1908. Around 450 tons of silver, 35,000 tons of lead and an unknown amount of zinc were extracted from an estimated 5 million tons of ore while the Sala mine was in

operation (Jansson, 2007). South of the mine, a village, Salberget, grew up from at least the middle of the 15th century (Bergold and Öhnegård, 1987). This mining village was the largest aggregation of people in Sala parish before the founding of modern Sala town in 1624 when the original village was abandoned by order of the king (Frankius, 2008, 23).

In association with the early village, there was a small church or chapel with a cemetery (Engelbertsson, 1987). Archaeological excavations of this early Sala cemetery took place in 2004, 2008, 2009 and 2011 (Bäckström and Ingvarsson-Sundström, 2010, 2012; Bäckström et al., 2009; Onsten-Molander and Jonsson, 2005). Investigation of the burials revealed intriguing differences in the location of the graves, the sex of the buried individuals, and the nature of the interments (Fig. 2). Some individuals of varied sex and age were buried in wooden coffins close to the small church. Others, only males, were buried in simple earthen graves at some

* Corresponding author.

E-mail addresses: tdprice@wisc.edu (T.D. Price), robertf@ign.ku.dk (R. Frei), ylva.backstrom@ark.lu.se (Y. Bäckström), Karin.M.Frei@natmus.dk (K.M. Frei), Anne.ingvarsson_sundstrom@gustavianum.uu.se (A. Ingvarsson-Sundstrom).

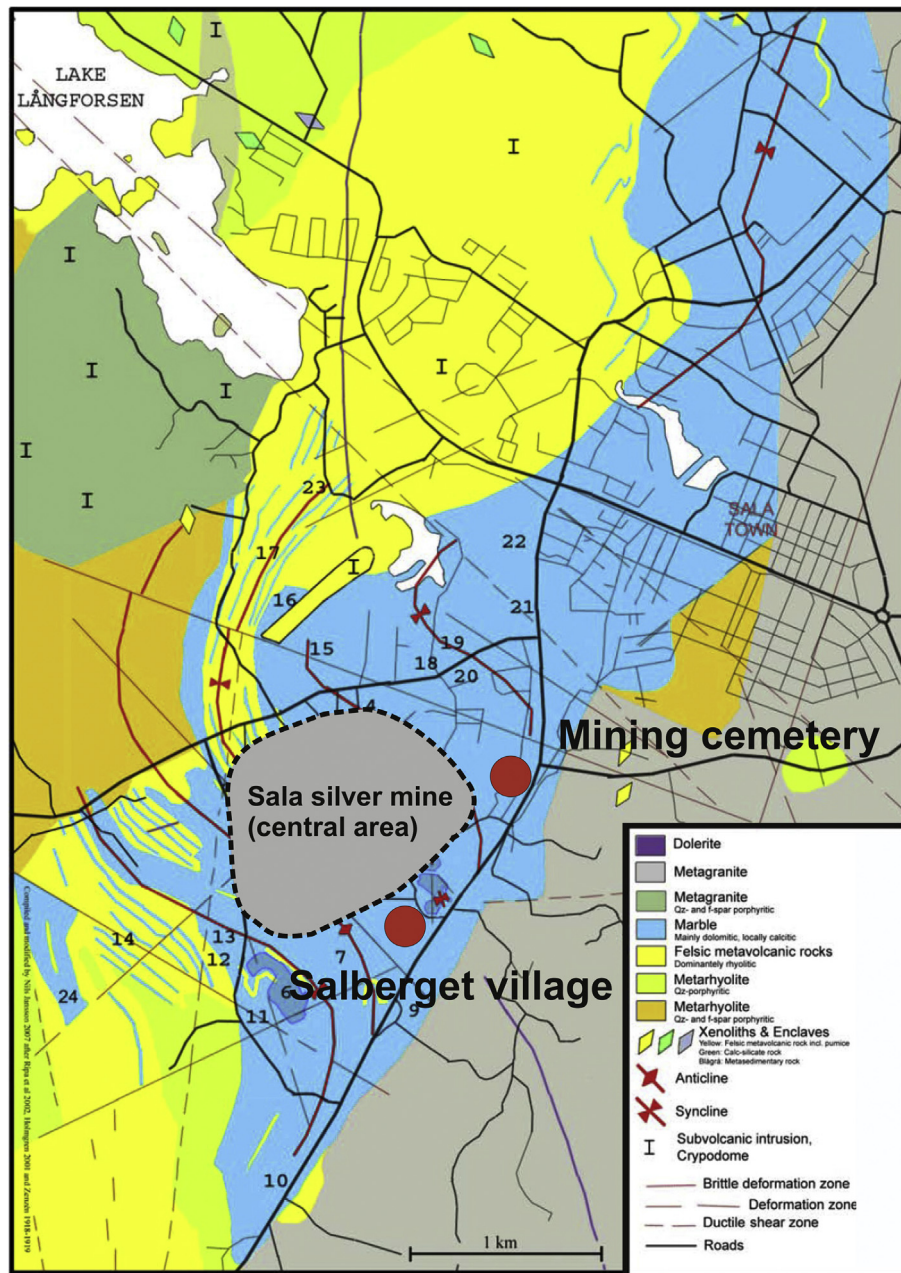


Fig. 1. Simplified geological map of the area around Sala with the locations of Salberget and the cemetery. Modified after Jansson (2007).

distance from the building. The wooden coffins usually contained a single body, in contrast to the earthen graves that often contained between two and eight individuals. Individuals in the coffins were usually buried in shrouds with few accompanying items. The occasional artifacts are metal clasps and needles to fasten the shrouds and in one case a woven band of cloth with 19 small square plates of gilded copper. The surviving artifacts in the earthen graves are related to every-day clothes and include clasps and hooks, personal items such as a knife, a whetstone and some coins (Bäckström and Ingvarsson-Sundström, 2010).

One of the most striking finds in the cemetery was an iron collar found in one of the earthen male graves (Fig. 3) (Bäckström and Ingvarsson-Sundström, 2010). This collar was put on certain miners as a form of corporal punishment for various misdeeds, such as laborers avoiding work in the mine (e.g., Vesterberg, 1997). The general impression is that the earthen grave burials were carelessly

interred compared to the other group of graves, where the dead were carefully buried in wooden coffins.

The cemetery age has been confirmed from coins, dated to 1470–1592, found at the site. Seventeen of the coins were stray finds in the top soil and five were found in three of the earthen graves (Bäckström and Ingvarsson-Sundström, 2010). Together, information from the coins and written sources indicate that the cemetery was in use during the late 15th century to 1600 AD, which coincides with the documented age of the mining village.

Anthropological analysis of the human remains found in the graves was revealing. The skeletons of 102 individuals from 84 coffins and nine earthen graves were examined (approximately 20% of the cemetery). Nine small coffins preserved no human remains and are assumed to have originally contained young children. The estimated age and sex of the buried individuals in the cemetery indicated that females, males, juveniles and children of different

Download English Version:

<https://daneshyari.com/en/article/5112077>

Download Persian Version:

<https://daneshyari.com/article/5112077>

[Daneshyari.com](https://daneshyari.com)