

The production of the lead mines in the Wallis area (Switzerland) during Roman times

Guénette-Beck, Barbara

*Mineralogy and Geology, Department of Geosciences, University of Fribourg, Switzerland

The history of the exploitation of the lead-mines during Roman times in the Wallis area (Switzerland) has been determined by comparison of the isotope signature of the lead from dated archaeological objects, with those of the ores (Guénette-Beck 2005). For this purpose, the lead isotope signatures of 144 objects with a high lead content (ingots, lead anchors, water pipes, smelting residues, etc.) found in the western part of Switzerland (Wallis valley, the lemanic basin and the surrounding area), dating from the end of the Iron Age up to the 4th century AD, were measured. The results were compared with the lead isotope signature of 57 mines and ore deposits in the Wallis area and approximately 2000 samples of the most important ore deposits in Europe collected from the literature.

Before the Roman time up to the 1st century AD, lead is supplied mainly by the mines of the Iberian Peninsula then in full activity. A contribution of the mines of Eastern France, in particular of the Vosges, remains to be confirmed. From the 1st century AD onwards, lead was chiefly imported into Western Switzerland from Germany (Eifel region). The local lead mines in the Wallis began to be exploited at the same time. They first met local demands, but their metal was also exported to the lemanic basin and, to a lesser extent, beyond. Newly produced lead, imported or from the local mines, was mainly used when large quantities of metal were required (lead anchors for important buildings, production of large objects like sarcophagi). In general, small artifacts were made from recycled lead. From the 4th century AD on, the demand of lead was met only by the production from local mines and the recycling of old objects. This change in the market is probably linked to the trouble caused by the invasions of the germanic tribes during the second half of the 3rd century AD. As a consequence, the Swiss market is cut off from its traditional sources of supply in the north, i.e. the Rhine valley.

REFERENCES

Guénette-Beck, B (2005): *Minerais, métaux, isotopes: Recherches archéométriques sur les mines de plomb et d'argent en Valais, Suisse*. PhD Thesis, University of Lausanne, 377, unpublished.