

ANCIENT MINING AND METALLURGY IN THE EXTREME NORTHWEST OF ARGENTINA

In the context of pre-Hispanic South Andes, the Argentinean Northwest became an important center of metalworking production and innovation. This development is reflected in the variety and quality of the metal objects produced there and in the technological solutions applied to produce objects with desirable characteristics.

The Puna of Jujuy, in the southern extreme of the South-Andes high-plateau and part of the current Argentinean Northwest, is an area of great interest for studying the particular characteristics of ancient mining and metalworking technology. Ores of the four metals employed during pre-Hispanic times, copper, tin, gold, and silver, were available in the area. Therefore, in 2004 we initiated a research project focused on generating new data on this subject by combining historical research on colonial documentation with intensive and large-scale archaeological surveys, excavations and records of pre-Hispanic and Colonial sites. To complement this, we have designed and implemented an archaeometric program to study furnaces, slag, minerals, and any metal found.

As a result of the work completed so far, we have recorded one-hundred sites that show evidence for mining and metalworking production in the area. We have identified pits and trenches for placer mining, adits to extract gold and silver ores, “canchas” (courtyards paved with cobbles), “marays” (grinding stones), furnaces for mineral processing and smelting, isolated shelters near the working areas and even small abandoned villages that were founded due to the mineral wealth of the area.

The evidence collected allows us to suggest that during the late pre-Hispanic period (ca. AD 900-1430), mining was not developed on a large-scale, however during this period the production of metal objects reached its peak in areas such as the Humahuaca Valley. The extraction of mineral



Colonial era adit at Coyahuayma (Jujuy, Argentina).

ores, especially copper and tin, would have been carried out by herder-miners, who would have transported them to regional centers of metalworking, located in the lower valleys but, not in the current Argentinean high-plateau. In this scenario, Puna inhabitants were involved in mining but not metalworking activities.



Reverberatory furnace for silver smelting (18th century, Fundiciones 1, Jujuy, Argentina).

At the beginning of 15th century, the Argentinean Northwest was incorporated into Tawantinsuyu. Several researchers have pointed out the special interest of the Inca Empire on controlling the mines and workers of the Puna of Jujuy, however our investigation shows that the Inkas did not develop large-scale mining activities in this region, nor is there evidence of metalworking production in Inca contexts. The mineral ores, especially gold and silver, in this region were particularly attractive to the Spanish conquerors who arrived at Puna in AD 1535. Such was the will for searching and working these ores that this region, despite standing at 3700 amsl and having difficult weather conditions, had one of the highest population concentrations in Jujuy by the 18th century.

During the colonial period, the landscape of the Puna was structured around mining activity. European and Indigenous people worked the gold placers, labored the gold and silver ores and smelted minerals in reverberatory furnaces. Villages and towns grew up fast with the discovery of mineral sources but, they were also abandoned quickly as the resources depleted. Some of these towns are still inhabited today, and stand as landmarks that remind of the presence of the underground wealth and the gold and silver fever of the past.

Carlos I. Angiorama

Florencia Becerra