

ROMAN SLAG DISTRIBUTION IN THE PORTUGUESE SECTOR OF THE IBERIAN PYRITE BELT.

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Abstract

During Roman times, several outcropping massive sulphide deposits in the Portuguese sector of the Iberian Pyrite Belt (IPB) were intensely exploited; up to a maximum know depth of 118 m at Algarçes, Aljustrel (the Roman *Vipasca*). Detailed geological and mining mapping of Caveira, Aljustrel and São Domingos (Cu, Pb, and Zn-bearing pyrite masses) and of Fortes (Cu-rich lodes) allowed a better understanding of the Roman slag distribution at each site. Remnants of *in situ* Roman slag piles were identified, sometimes including pottery fragments. They are key-areas of mining heritage that must be preserved, because of their archaeological and cultural significance. Locally, the Roman slag piles are covered by modern mining waste and have already been used for road paving and building (e.g. Aljustrel, Água Industrial dam). Using a CAD system, the results of the survey performed were compared with the oldest XIX century mine maps available for Aljustrel and São Domingos. The results indicate that Roman slag covers a total area of 200736 m²: 78852 m² at Caveira, 79809 m² at Aljustrel, 28173 m² at São Domingos, and 13902 m² at Fortes; the XIX century maps shows areas of 442424 m² at Aljustrel and 92410 m² at São Domingos. Taking the average slag density and thickness to be 3.1 g.cm⁻³ and 3 m (2 m at Fortes mine), as suggested by field data, a total volume of 1.87 Mm³ (5.79 Mt) of Roman slag is known to have existed in the IPB Portuguese sector: 236556 m³ and 733324 t at Caveira, 1327272 m³ and 4114543 t at Aljustrel, 277230 m³ and 859413 t at São Domingos, and 27804 m³ and 86192 t at Fortes. No remnants of Roman slag piles were so far found at Chança, Lousal and Montinho, also exploited in Roman times.

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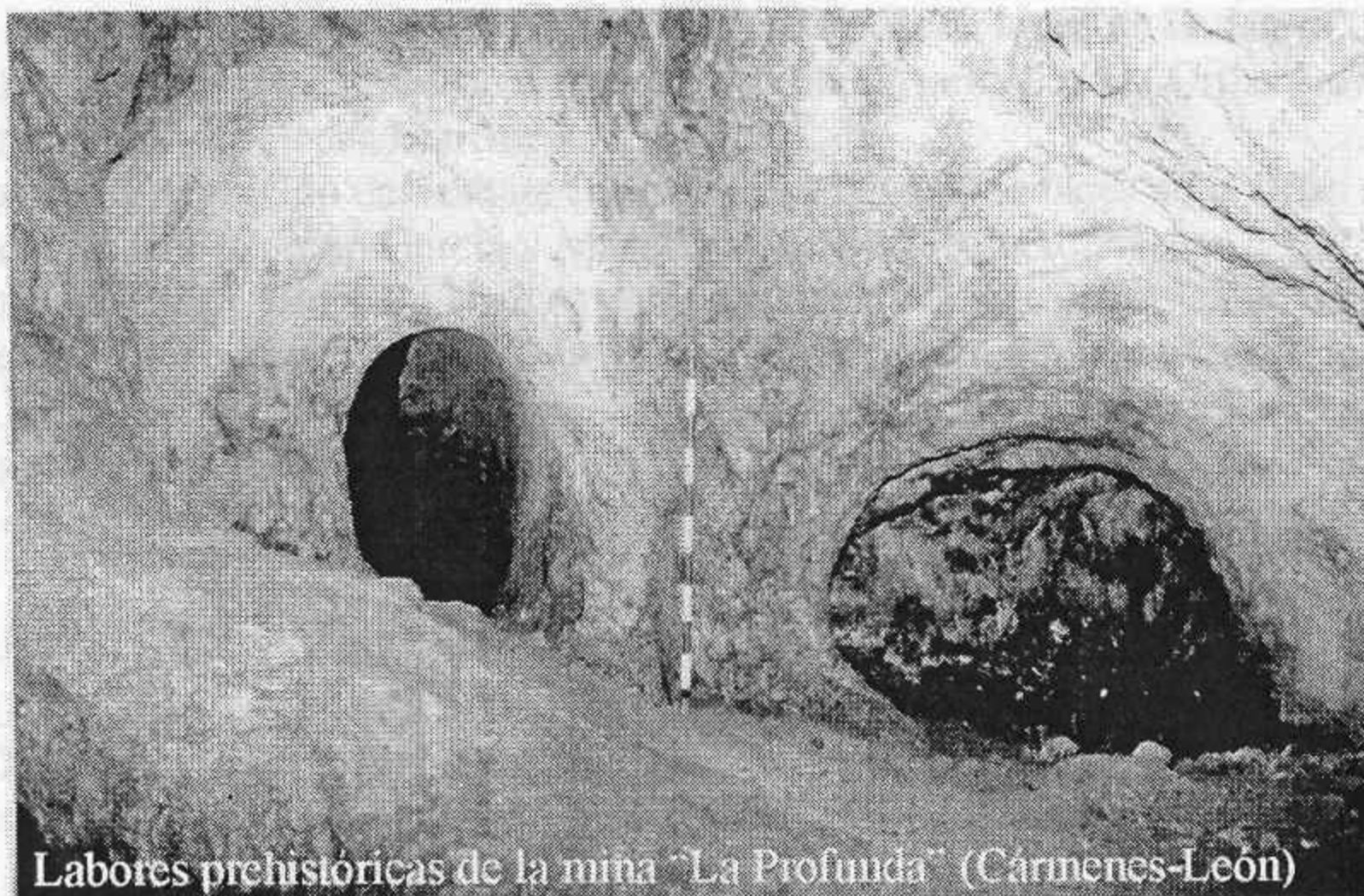


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