

## Archeology of Ancient Mines and Metallurgy on the Edge of Lut Desert Case Study: Deyhuk District of Tabas City

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### Abstract

Tabas city in South Khorasan province is one of the regions that has high capabilities in terms of ancient mining and metallurgy studies and is unknown in comparison with other regions of Iran. Meanwhile, Deyhuk Tabas district due to the mass of smelting sites and slag accumulated in one direction and the entity of mineral cavities in order to extract the metal mineral is evidence of extensive mining and metal extraction activities in this region, which plays an important role in the region's economy and ecological sustainability along with other economic activities. Despite the volume and quality of studies that have done so far on the study of ancient mining and metallurgy in this city have not been worthy of the cultural-historical talents of this cultural area and have not been introduced as it should be. During archaeological studies, by writers and experts' South Khorasan Cultural Heritage Office in Deyhuk district of Tabas city have discovered a copper mine and seven metal smelting sites, which shows the role and importance of ancient mining and metallurgy in the social and economic life of Deyhuk cultural area. This research tries based on the results of archaeological field methodological study, texts and written sources in Deyhuk district to identify the evidence related to metallurgy industry, smelting technology and type of extracted ore deposit to better understand the process and cycle of metallurgy including three stages of mining, extraction and provide melting of metals. With the studies done, typology and comparative comparison of the discovered slag with the known metal centers, it seems that the composition of the slag includes the main elements of iron, lead and copper, Archaeological field studies performed in mines and metal smelting sites identified show that metallurgists in this area used open and underground methods to extract minerals and after transferring mineral parts to workshops and smelting furnaces, they used roasting method for melting metals. Cultural materials (pottery) obtained from around the only furnace identified show that the relative dating of this mine is based on pottery finds from the Islamic Middle Ages.

**Keywords:** Mining Archeology, Ancient Metallurgy, Slag, Tabas, Deyhuk.

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