

An Experimental Study of Iron Smelting Techniques Used in the South East Rajasthan, with Special Reference to Nathara-Ki-Pal, Udaipur

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Abstract : The aim of this paper is to discuss recent research conducted in experimental studies related to the process of the iron smelting. The paper will discuss issues related to the selection of iron ore, structure of furnace, making of tuyeres, fashioning of blowers and firing temperatures through experiments conducted recently and scientific analyses of experimental work. Experiments were conducted in order to investigate iron smelting techniques used at the Early Historic site of Nathara-Ki-Pal. (73°47'E; 24°16N is located about 70 km south-east of Udaipur city). Geographically, Nathara-Ki-Pal has located the foot hills of Aravalli's. Iron ore and iron slag can be seen on the surface of the site. The remains of 4 broken furnaces were recovered during excavations (2007 and 2008) and the site was excavated by Prof. Pandey from the Department of Archaeology of the Institute of Rajasthan studies, Rajasthan Vidyapeeth University. This shows that the site of Nathara-Ki-Pal was a center of iron smelting. Results of experiments performed both in the field reconstruction of a bloomery furnace and in the laboratory are discussed.

Keywords : experimental studies, furnace, smelting techniques, making of tuyeres

Conference Title : ICA 2018 : International Conference on Archaeology

Conference Location : Paris, France

Conference Dates : March 15-16, 2018