

Title: ARCHAOMETALLURGICAL INVESTIGATION OF IRON PRODUCTION TECHNOLOGY IN BUTIRU, EASTERN UGANDA

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Abstract

This study focused on the technology used in ancient iron production in Butiru located in eastern Uganda. It was guided by four specific objectives: to characterize the archaeological assemblage, to examine the technological features and processes of iron production and working, to establish the chronological timeline of the Butiru archaeological sites, and to explain the environmental characteristics associated with iron production in the area.

Using an archaeological research design and an archaeometallurgical approach, the study examined the technology employed in the production of iron from start to finish. Data was collected using various methods namely archaeological surveys and excavation, ethnoarchaeological interviews, and participant observation. Additionally, dating and environmental samples were collected and physical attributes of cultural materials were analysed. Samples for dating were sent to the Beta Analytic Lab in the USA.

Drawing on the two theories of *chaine operatoire* and practice, the study reveals that iron production technology in Butiru was a two-stage process involving the smelting of ore and the smithing of the final product. An analysis of the tuyeres suggests a slag-tapping technology. Additionally, the furnaces recovered were the small standing shallow type, an indication that they were most likely used only once. Dating of samples revealed that while some areas like Bubwayo fall within the Early Iron Age (EIA), others namely Bumulumeti, Bumufuni and Khatsonga fall in the Late Iron Age (LIA) period

Iron production in contemporary Butiru uses raw materials such as scrap metals acquired from abandoned old vehicles and garden tools. It does not involve smelting. The study enriches archaeological knowledge of iron production in the region. The dates give precise periodisation of the sites and more insight into the technology used in a decentralised setting compared to the information acquired from the areas with centralised systems.