Archaeology of Hehe Iron Smelting Technology at Kalenga, Southern Tanzania

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Abstract

The culture and technology of African traditional ironworking are greatly varied and have been examined within various traditional ironworking societies in sub-Saharan Africa. Unfortunately, archaeometallurgical remains in some societies that once practised ironworking such as the Hehe, a Bantu-speaking people of southern Tanzania, have not been adequately studied. This paper examines the archaeological materials of ironworking in Kalenga Division, with a view to illustrate the iron production techniques of the Hehe and compare these techniques to metal production technologies in other parts of the continent. The macroscopic analysis of the remains indicates that the Hehe iron smelting was a forced-draft operation. The furnaces were made of clay rolls, and the slag was collected at the bottom of the furnaces in the slag-pits. This iron production technique, as is herein argued, relates to furnace designs of the last millennium BC and the first millennium AD in eastern Africa. However, it is noteworthy that the Hehe ironworkers did not decorate their furnace clay rolls as it was with some of the Early Iron Age (EIA) furnace materials.

Key Words

ironworking, Ngongwa furnaces, overlapping furnaces, flared tuyeres, working place (WP), Kalenga, Uhehe, iron smelting, clay rolls.

Introduction

Ethnographic research interest on African iron metallurgy matured at the beginning of the 20th century (e.g. Wychaert 1914; Cline 1937). The early research focussed on investigating, among other aspects, (1) the origins and spread of ironworking, (2) the techniques and processes of iron metal production, and (3) the symbolism, medicines and rituals of ironworking. Based on most of the 20th century research evidence, students of African iron metallurgy can now cast away claims that iron technology was introduced in sub-Saharan Africa from north Africa, Europe or Asia (Schmidt and Avery 1983; Mapunda 2010). There is no proof that ironworking technology was introduced from anywhere else (Killick 2004: 101). In addition, because the Early Iron Age (EIA) research evidences from Taruga in northern Nigeria as well