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Iron Production in Northern Benin: Excavations at Kompa Mousségoubou

Caroline Robion-Brunner, Anne Haour, Marie-Pierre Coustures,
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Abstract

In the context of the "Crossroads of Empires" project led by Anne Haour, one strand of enquiry aims to understand the history of blacksmith groups and the development of iron production in Dendi country, in the northern Republic of Benin. Numerous remains of iron production have been discovered, showing a great variability in furnace design and waste assemblages. At least three smelting traditions can be distinguished. In this paper, we present the smelting site of Kompa Mousségoubou (10th/11th c. AD) which has been investigated by archaeological and archaeometric methods. Beyond the archaeometallurgical results, the excavation of a 1 x 2 m trench on a settlement mound nearby and survey work, which place the site within its wider context, are also discussed. In particular, we offer a detailed analysis of the ceramics recovered during test pitting and within one of the furnaces itself. This paper thus offers a rare opportunity to combine archaeometallurgical and ceramics data.

Résumé

Dans le cadre du projet « Crossroads of Empires » dirigé par Anne Haour, un volet de paléométallurgie s'est donné pour but de comprendre l'histoire des forgerons et l'évolution de la sidérurgie dans le Dendi, au nord-Bénin. Un grand nombre de vestiges sidérurgiques a été découvert, montrant une grande variabilité dans la morphologie des fourneaux et des déchets. Au moins trois traditions sidérurgiques ont été distinguées. Dans cet article, nous présentons le site de réduction Kompa Mousségoubou (10ème/11ème siècle ap. notre ère) qui a fait l'objet d'opérations archéologiques et d'analyses archéométriques. De plus, la fouille d'un sondage de 1 x 2 m sur une butte d'habitat proche et le travail de prospection, qui permettent de placer le site dans un contexte plus large, sont également discutés. Cet article offre ainsi une occasion rare de combiner les données d'archéométallurgie avec l'analyse de la céramique.

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Keywords: Dendi country, North Benin, iron production, archaeometallurgy, ceramics

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Introduction and aims

The date for the beginning of ironworking in Africa is still debated[1]. However, for past communities the most important stage would not have been the initial discovery, but rather the development of iron production and its generalisation of use. Iron played and continues to play a key role in the everyday life of societies in Africa, as elsewhere in the world. Because of its ready availability and its favourable thermo-mechanical properties, iron is the material most suited for making efficient agricultural tools and weapons. The manufacture of iron agricultural tools allowed for the rapid clearing of larger areas and an increase in crop production. Wear-resistant iron weapons could be quickly produced in great numbers. Thus, iron gives both life and death, and is found just as well in the utilitarian spheres as in the symbolic (Schmidt 1996; Vogel 2000; Huysecom 2001; Childs & Herbert 2005; Serneels 2009).

The spread of ironworking was complete in West Africa in the course of the 1st millennium AD. The study of this specific human activity has demonstrated its exceptional significance and its astonishing variability of practice. Researchers have attempted to characterise this variability by devising different typological systems, based on furnace morphology (Sutton 1985; Martinelli 1993; McNaughton 1993), technological criteria (Kense 1985; Pole 1985; Tylecote 1987; Killick 1991), or social, political and economic organisation of production (de Maret 1980, 1985; Childs 1991; Martinelli 2002; Langlois 2005–06).

In order to write a history of iron production, we require more systematic regional surveys to be carried out (de Barros 1985, 1986; Robert-Chaleix & Sognane 1983; Fowler 1990; Robert-Chaleix 1994; Robion-Brunner 2010; Serneels *et al.* 2012; Robion-Brunner *et al.* 2013; Serneels *et al.* 2013). This is one of the aims of the "Crossroads of Empires" project (Haour *et al.* 2011; Haour 2013). The project as a whole aims to make a first inventory of archaeological sites in northern Benin, along the Niger River, in an area known as Dendi; and, ultimately, to yield an archaeological and ethnographic map for the area, focusing on the materialisation of past polities and on past craft productions. In this sense, part of the project activities has been dedicated to understanding the development of iron production in Dendi country. To do so, a multidisciplinary approach was used. The ethno-historical approach focuses on collecting oral traditions related to metallurgy. Due to the fact that living memory is still rich, we were able to recover much information about the history of producers and consumers of metal in the last few centuries. Such enquiries help to understand the historical, social and economic aspects that are impossible to identify through the material record alone. They also provide information on the spiritual and symbolic world in which iron production and iron working were integrated. Finally, the practical knowledge of modern craftspersons helps to understand and reconstruct early practices. The archaeological approach has focused on the inventory, description and interpretation of the material evidence of iron metallurgy: mine pits, bloomery furnaces serving to extract iron during smelting, and smithies in which objects were made. These sites have been systematically located across the landscape and documented through detailed description, photographs and topographic mapping. Characteristic sites were selected and studied in greater detail via test excavations. Such fieldwork has exposed bloomery furnaces, making it possible to study their operation, to collect charcoal samples in stratigraphic contexts with a view to establishing the chronology of the site and the kinds of wood used as fuel, and to sample metallurgical residues (ore, slag, technical ceramics) subsequently analysed in laboratory conditions in order to better understand technological aspects, different modes of production and their development through time.

During our two field seasons in Dendi country, a zone of 10 by 100 km was systematically surveyed. About forty previously unrecorded smelting sites were inventoried, mapped and studied. Iron production in this region of Africa (and across the continent) has progressively decreased since the middle of the 20th century, replaced by the use of scrap iron. Data are in fact currently insufficient to date the beginnings and the fluctuations in iron production, but we observed significant variability in metallurgical remains within this relatively small geographic region. In order to explain such diversity, we have aimed to construct a classification based on technological, cultural and socio-economical criteria. We have accordingly distinguished three smelting traditions: that of the reusable furnace with tapped slag, that of the non-reusable furnace with internal slag, and finally that of the reusable furnace with internal slag. The first tradition was the most frequent and was observed throughout the area surveyed (***Fig. 1***).

On 15–16 February 2011, Anne Haour, Alexandre Livingstone Smith[2], Didier N'Dah[3] and Inoussa

1 See notably volume 8 (1) 2010 of the *Journal of African Archaeology* containing several articles dealing with this question, and the article by B. Clist (2012) offering an overview of chronological data and main bibliographic references.

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