An 8th-9th century AD iron smelting workshop near Saphim village, NW Lao PDR

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ABSTRACT: A rare example of an organised industrial workshop is reported, from the environs of the ethnic Lamet village of Saphim in Luang Namtha Province in NW Lao PDR. The archaeological site contains the remains of seven sub-circular furnaces in a distinct linear arrangement. Two furnaces were excavated, one of which was largely complete and provided evidence for a forced blast, multiple use, slag-tapping iron smelting operation. Six thermoluminescence dates derived from wall fragments provide a date range from 621±270 to 1181±170 AD, indicating that the workshop relates to production in the historic pre-European contact period. The organised layout of the furnaces is suggestive of either simultaneous production or a production sequence, rather than the distribution expected of chronologically superposed production within dating resolution limits. A multi-furnace workshop level of supply was probably in excess of local demand, and thus contemporary regional comparisons for social contexts of iron production and exchange networks are explored.

Introduction

Despite a relatively early start under the late 19th/early 20th century French colonial administration (Colani 1935), Laotian archaeology long remained a substantially under-developed field, especially when compared with research activity in Thailand and Vietnam. Efforts by local and foreign scholars over the last two decades have begun to rectify this situation with investigations of Palaeolithic, Neolithic, Metal Age, and Historic sites and landscapes (collated in Goudineau and Lorrillard 2008). In the coming years the synthesised results of these projects can be expected to provide a much fuller picture of the Lao PDR’s past to complement existing and on-going ethnographic and text-based studies of the country’s rich cultural and ethnic diversity.

In terms of early metallurgy the Lao PDR has been remarkably silent in light of the substantial mineral wealth of this predominantly mountainous nation (Wu 2007). Excavations in the 1990s by Anna Källén and Anna Karlström at Lao Pako (102.860°E, 18.160°N) on the banks of the Nam Ngum (River Ngum, a tributary of the Nam Mekong in central Laos) revealed evidence of 4th to 6th century AD iron smithing and possibly copper-base founding activity in association with a settlement and burial site (Källén and Karlström 1999). More recently, collaboration between the Laotian Ministry for Information and Culture, James Cook University, and a commercial mining company has resulted in the discovery of a c2000 year old copper mining and smelting complex near Xepon in central-southern Laos (106.013°E, 16.966°N; Pryce et al 2011); comparable in significance to the prehistoric copper production centres at Phu Lon (102.140°E, 18.205°N) and the Khao Wong Prachan Valley (100.678°E, 14.971°N) investigated by the Thailand Archaeometallurgy Project (Pryce et al 2010; Pryce et al 2011).

Despite these advances, the paucity of data on Laotian metal technologies is important because, as David Killick (2008, 3045) noted, the Lao PDR lies on key potential transmission routes (particularly central and northern Laos) for competing models for the origin/s of Southeast Asian metallurgy at some point in the 2nd millennium BC (eg Higham et al 2011; White and