

# Rooiberg revisited—the analysis of tin and copper smelting debris

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*ABSTRACT: It is nearly a century since the first description of indigenous tin mines at Rooiberg. Sporadic archaeological research has not demonstrated tin mining prior to the mid-2nd millennium AD at Rooiberg, and the presence of tin bronzes at sites such as Mapungubwe and Bosutswe prior to this date could implicate other sources of tin. Nevertheless, all the southern African archaeological tin ingots analysed for their trace element composition are thought to have originated at Rooiberg, but this is not yet proven. The actual technology of tin production at Rooiberg is poorly understood, and is complicated by the production of arsenical copper and possibly also iron in the immediate vicinity. This paper summarises the published literature, presents new analyses of tin and copper production waste collected on a brief reconnaissance visit, discusses the technology of metals production at Rooiberg in the light of these new data, and poses questions for ongoing research.*

## Introduction

This paper contributes to developing an understanding of local tin and bronze production in southern Africa, by reporting analyses of ores and slags collected in 2005 from sites near Rooiberg (Figs 1 and 2), and discussing the results in the light of earlier published analyses. Issues of chronology are not dealt with here. They are the subject of ongoing archaeological investigation (see Chirikure *et al* 2007). Rooiberg is of significance because it is the only known location of Iron Age tin production in southern Africa (Grant 1999), and one of only two such tin sources in Africa, the other being in Nigeria (Chikwendu *et al* 1989).

At Rooiberg, in the southern Waterberg 100 km north-west of Pretoria, the mineralization is associated with the terminal emplacement of granites and felsites of the Bushveld Igneous Complex (Crocker *et al* 1976; du Toit and Pringle 1998). The Rooiberg constellation of archaeological sites includes early mines on a number of contiguous farms, smelting sites on a prominent hill called Smelterskop at the foot of the Elandsberg, and smelting debris eroding out of a nearby drainage channel known as Blaauwbank Donga (Fig 2). It is

nearly a century since the first descriptions of evidence of tin mining at Rooiberg prior to European colonisation (Recknagel 1908; Kynaston and Mellor 1909; Trevor



Figure 1: Map of the wider region, showing some of the major archaeological sites.