Archaeological and palaeoecological implications of charcoal assemblages dated to the Holocene from Great Zimbabwe and its hinterland

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DECLARATION

I declare that this thesis is my own, unaided work. It is being submitted for the Degree of Doctor of Philosophy in the University of Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

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(Signature of candidate)

8 day of May 2014

Dedication

This thesis is dedicated to my late brother in – law who even on the last stroke of his breath continued to encourage me until I get to the top. The road of life has many detours, till we meet again.
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Abstract

In most of Africa archaeological charcoal samples are often used to establish chronology through radiocarbon dating, but are rarely used to address why people may have selected specific wood taxa for particular purposes. This thesis is an enquiry into the palaeo-ethnobotanical and palaeoecological implications of charcoal assemblages dated to the late Holocene from the Great Zimbabwe and Chigaramboni sites, Zimbabwe. The research provided a more detailed picture of socio-economic utilization of wood, such as the use of woods for iron smelting, construction and domestic hearths. Previous excavations at Great Zimbabwe and Chigaramboni have produced large samples of charcoal at specific activity sites and at a few different depths thus giving a minor perspective of time. There was a wider selection of wood at Great Zimbabwe as compared to Chigaramboni. Charcoal samples analyzed in this thesis are a product of purposeful human action and they represent a subsample of the local vegetation and related human activities contemporaneous with the period of sites’ use. A substantial effort has been invested in the development of a modern vegetation reference collection database. This will go a long way in assisting future researchers in the region and is an extremely valuable and essential primary contribution to the development of wood charcoal studies in the region.

Thirty different tree species were burnt at Great Zimbabwe and indicate the multipurpose nature of the settlement. In contrast only 14 species were exploited at Chigaramboni which is an iron and metallurgical processing site. The latter fuel woods were also used at Great Zimbabwe. Based on the cracks and fissures in the charcoal it is postulated that the firewood used in metallurgy were collected whilst they were wet.
Since *Spirostachys africana* and *Colophospermum mopane* do not occur in the area today it is suggested that there was long distance movement of wood, particularly those with excellent construction qualities. It is quite possible that the inhabitants of Great Zimbabwe, or their trading partners, opted to travel long distances in order to collect those particular logs. The fuel woods used at the two sites occur in the region today so it is likely that the Miombo woodlands of Great Zimbabwe and Chigaramboni have not changed notably from the time of occupation by their original inhabitants to date. Based on the mesophytic species identified, such as *Acacia robusta*, *Acacia sieberiana*, *Acacia xanthophloea*, *Acacia polyacantha*, *Acacia burkei*, *Faurea saligna*, *Schotia brachypetala*, *Kigelia africana* and *Parinari curatellifolia*, it is concluded that the inhabitants of ancient Great Zimbabwe and Chigaramboni archaeo-metallurgical site experienced a mesic environment. New excavations of different occupation levels would be required to determine vegetation and climate fluctuations during the past but at present there is a moratorium on such disturbance of the historical sites.