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Characterising marine mollusc exploitation in the eastern African Iron Age: Archaeomalacological evidence from Unguja Ukuu and Fukuchani, Zanzibar

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ABSTRACT

Molluscan remains from archaeological contexts have the potential to provide information related to a range of issues, including but not limited to settlement and economic structures, and local environmental conditions. Shell deposits are ubiquitous along the eastern African coast and offshore islands, with previous archaeological research highlighting the prevalence of these deposits in conjunction with providing some discussion on the variable contribution or role of molluscs within the economy. In general, marine molluscs have been viewed as a secondary or fall-back resource with largely opportunistic harvesting in the intertidal zone. In addition, there is a general expectation that there would be significant variability in exploitation depending on settlement structure, the availability of domesticates, and with status differences. With few exceptions, however, the scale and resolution of archaeomalacological analyses across the broader region have tended to be relatively coarse, making it difficult to adequately assess these interpretations. Here we consider these issues based on detailed analyses of the sites of Unguja Ukuu and Fukuchani situated on the island of Unguja (Zanzibar), providing an assessment of the relative importance of the exploited taxa and ecological niches, in combination with species richness and diversity. These analyses provide a comparative framework for other sites in the region, and a baseline understanding of human interactions with coastal environments through molluscan exploitation.

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1. Introduction

The nature of prehistoric human occupation of coastal environments, and the role of resources contained within these environments in past economies, have been heavily debated for many decades. One position saw coastal and marine environments being largely ignored, until increasing competition for terrestrial resources in combination with increasing populations forced a reorientation of humans to focus on more marginal habitats, particularly following the Last Glacial Maximum (e.g. Cohen, 1977; Osborn, 1977). The alternative and now more influential

perspective emphasises the attractiveness of dynamic and diverse coastal ecosystems, and in particular the general productivity and economic potential of the intertidal zone (Bailey, 2004; Erlandson, 1994; Perlman, 1980; Meehan, 1977; Yesner, 1980; and Erlandson, 2001 for a detailed overview of these issues). In fact, many of these researchers have highlighted the degree of variability in coastal environments through time and space, meaning that simplistic notions of highly marginal vs highly productive are not easily applied.

Tied to these broader issues is the nature of mollusc exploitation; as noted by Erlandson (2001:293), no other class of marine resources has produced more discussion among archaeologists. Over the last century, archaeological depictions of molluscs have largely centred on them being a secondary, marginal, or hardship

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resource, based on their small size and perception as time/energy inefficient resources, as well as relatively simplistic nutritional comparison with larger-bodied terrestrial species (see critiques in Erlandson, 2001:294; Erlandson and Fitzpatrick, 2006:6). The opposing argument is that molluscs require little technological investment and minimal search time, and via mass harvesting can provide reliable yields that, for example, can buffer economic risk (Braje and Erlandson, 2009; Jones, 1991; Erlandson, 2001:294). In fact, there are archaeological examples from around the world that would suggest a multitude of economic roles for molluscs, from fallback, supplementary and or buffering resources (e.g. Colonese et al., 2011) to integral economic components (e.g. Erlandson, 2001:331; Jerardino, 2010). Across much of eastern Africa, however, the notion of mollusc harvesting being linked to environmental deterioration, population pressure and resource stress (Msemwa, 1994) remains prevalent. The main issue with this position relates to the general paucity of archaeomalacological research available, largely due to different research priorities in the region, meaning that this dominant view requires systematic testing and cannot just be assumed.

Following Bailey (2004:46), who advocated for more detailed investigations of recent coastal archaeological records, marine resources and maritime activities (as recently synthesised for eastern Africa by Fleisher et al., 2015), here we present archaeomalacological analyses from Unguja Ukuu and Fukuchani, two late first millennium CE trading sites in the Zanzibar archipelago off the coast of Tanzania, eastern Africa (Fig. 1). The aim here is to systematically explore the nature of past mollusc exploitation as an additional means of understanding human interactions with

coastal environments, and to provide detailed baseline archaeological data from which further exploration of these issues can occur.

2. Previous views on mollusc exploitation in eastern Africa

The Swahili coast of eastern Africa extends from Somalia to Mozambique and includes offshore islands from the Lamu Archipelago to Pemba, Zanzibar, Mafia and the Comoros. It is well known for its role in the western Indian Ocean trading networks. The Swahili present a distinctive, coastal-oriented society, that developed from small-scale, farming and fishing communities, with increasing population sizes, maritime social and economic adaptations, maritime trade, and the development of mercantile urban centres by the second millennium (e.g. Fleisher et al., 2015). The settlements of Unguja Ukuu and Fukuchani both belong to the eastern African Middle Iron Age (MIA) or Early Tana Period, the latter taking its name from the distinctive Early Tana Tradition/Triangular Incised Ware (ETT/TIW) ceramics found at coastal sites between the 7th and 10th centuries CE (following the ETT/TIW chronology provided by Horton and Chami (in press); Fleisher and Wynne-Jones, 2011:253). These wattle-and-daub mixed-farming settlements were linked to expanding Indian Ocean trade and early Islamisation, and are widely considered the precursor to Late Iron Age (or Swahili period, c. 11th to 15th centuries CE) stone towns characterised by an increasing maritime focus, Islamic practice, urbanisation, and the emergence of a merchant élite (Fleisher et al., 2015; Horton and Middleton, 2000).

Previous archaeological and ethnographic research on the eastern African coast and islands has highlighted the rich and productive nature of the intertidal and marine environment, with a diverse range of resources available for exploitation. Unsurprisingly, significant numbers of molluscs are often present in Iron Age archaeological deposits (e.g. Breen and Lane, 2003; Chami, 1994; Msemwa, 1994; Mudida and Horton, 1996). However, as noted by Mudida and Horton (1996:389), Fleisher (2003:354) and more recently Douglass (2016), there is limited information available for molluscs recovered from archaeological sites on the eastern African coast. In general, where molluscan assemblages have been reported, these data are often limited to provision of basic species lists or a focus on the limited range of dominant taxa, and recording of their relative abundance (largely via specimen counts and/or weight) (e.g. Juma, 2004; Radimilahy, 1998; Wilson and Omar, 1997; Wright, 1992; Wright et al., 1984). As such, there is little comparative data available from which to contextualise the nature of mollusc exploitation across the region. The following discussion, therefore, highlights some of the more detailed considerations of molluscan assemblages rather than providing an exhaustive overview of all sites across the region. At the most basic level, these data indicate that, although there are several taxa that commonly occur in archaeological deposits as a part of the general suite of Indian Ocean species, there is a degree of variability in the overall range and abundance of taxa and habitat zones exploited.

Several sites from the Lamu Archipelago off the northern coast of Kenya provide some detail on the nature of the molluscan assemblages recovered and potentially the role of these resources within the coastal economy. Evidence from the large, dense urban 8th to 14th century settlement of Shanga (see Fig. 1 for location of sites mentioned throughout) suggests a highly productive coastal and marine environment, including significant molluscan resources, although Mudida and Horton (1996:392) indicate that direct comparison with other economic resources is problematic due to the large amount of shell discarded relative to comparatively lower protein yield. At Shanga, 15 marine mollusc taxa were

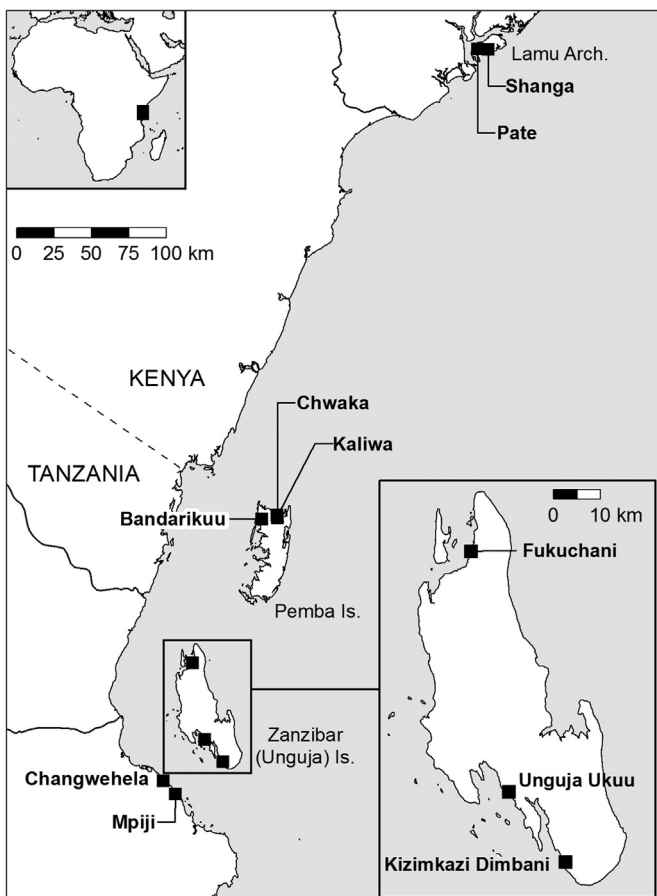


Fig. 1. Regional map showing the location of places mentioned in the text.

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