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ORIGINAL ARTICLE

Beyond Commoner and Elite in Swahili Society: Re-Examination of Archaeological Materials from Gede, Kenya

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Abstract The Swahili communities of the East African coast created one of the best-known societies of precolonial Africa, combining cultural influences from throughout the Indian Ocean world with those of their continental African roots. Of the many Swahili towns and communities, Gede is among the most famous because of its extensive, well-preserved stone ruins and long tradition of archaeological work. Yet research at the site has primarily investigated its elite inhabitants or pursued broad culture-historical questions. One significant exception was a PhD dissertation project undertaken in the early 2000s by Lynn Koplin, but unfortunately never finished or published. By analyzing the data collected by Koplin, the daily lives of the town's inhabitants and patterns of economic and social difference inside and outside the town walls begin to come into focus. This study provides us with important insights into the functioning of Swahili society during a less well-known period, the fifteenth and sixteenth centuries. Gede reached its apogee during this period. The data especially provide a significant case study for exploring the diversity among Swahili "commoners" in the cosmopolitan centers of the East African littoral.

Résumé Les communautés swahili de la côte est-africaine ont créé l'une des sociétés les plus connues de l'Afrique précoloniale, alliant les influences culturelles de l'ensemble du monde de l'océan Indien à celles de leurs racines africaines continentales. Parmi les nombreuses villes et communautés swahili, Gede est. parmi les plus célèbres en raison de ses vastes ruines de pierre bien préservées et de sa longue tradition de travaux archéologiques. Pourtant, les recherches sur le site ont principalement porté sur ses habitants d'élite ou sur de vastes questions de culture et d'histoire. Une exception notable était un projet de recherche doctorale entrepris au début des années 2000 par Lynn Koplin, mais malheureusement jamais achevé ni publié. En analysant les données collectées par Koplin, la vie quotidienne des habitants de la ville et les schémas de différences économiques et sociales à l'intérieur et à l'extérieur des murs de la ville commencent à se préciser. Cette étude nous fournit des informations importantes sur le fonctionnement de la société swahili au cours d'une période moins connue, les quinzième et seizième siècles. Gede a atteint son apogée pendant cette période. Les données fournissent en particulier une étude de cas significative pour explorer la diversité parmi les «roturiers» swahili dans les centres cosmopolites du littoral est-africain.

Keywords East Africa · Swahili · Kenya · Social difference · Material culture

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Introduction

The cities, towns, and villages along the East African coast created and shared one of the best-known cultures of precolonial Africa. Known as the Swahili, this culture

combined influences from around the Indian Ocean world with those of its continental African roots to create a thriving, cosmopolitan society of independent, sometimes competing city-states in the early second millennium CE (Kusimba 1999; Sinclair and Håkansson 2000). Urban centers such as Kilwa and Mombasa derived great wealth serving as middlemen in the Indian Ocean trade, trading African resources and products for those from the Middle East, South Asia, and China. The initial archaeological and historical investigations of the Swahili focused especially on the largest cities and the exotic features of those places (e.g., Chittick 1974, 1984; Kirkman 1964). Over the past several decades, the focus of the investigation has shifted towards recognizing the African roots and characteristics of Swahili society (e.g., Abungu 1989; Allen 1979, 1982; Chami 1994, 1998 Horton 1981, 1994; Mutoro 1985). Efforts have also focused on documenting the daily lives of non-elite inhabitants of Swahili cities and the non-urban settlements of the coast (e.g., Fleisher 2003; Fleisher and LaViolette 1999; Helm 2000; Kusimba et al. 2013; LaViolette and Fleisher 2009; Pawlowicz 2012, 2017; Shipton et al. 2013; Wynne-Jones 2005). What has emerged is a richer and fuller understanding of Swahili life more attuned to the diversity of Swahili people and their experiences, as well as how those experiences changed over time. Awareness of Swahili diversity has, in turn, produced a more nuanced appreciation of the details of coastal communities' participation in the Indian Ocean networks and the various factors that shaped and motivated such participation.

Nonetheless, gaps in our knowledge of Swahili social diversity remain, especially for certain regions and periods (see Wynne Jones 2018). In this regard, the site of Gede (also Gedi) in southern Kenya is a particularly good candidate for the archaeological study that would help fill some of these gaps. Gede is among the best-known Swahili sites, rightly famous for its extensive and well-preserved standing ruins, which have attracted archaeological attention since the mid-twentieth century. However, the archaeology of the site largely ignored the non-elite, majority inhabitants (e.g., Kirkman 1954, 1963; Pradines 2003, 2010). Moreover, considering that the cultural apex of Gede was later than other Swahili cities, important questions about the site's place in Swahili cultural history remain unanswered. It was with the goal to fill these gaps that Lynn Koplin initiated her doctoral research project in 2001, designed explicitly to extend the archaeological focus to the inhabitants of extensive neighborhoods of earth-and-thatch architecture at the site. Unfortunately, she did not publish the full results of these excavations. With access to most of Koplin's records and her approval to publish the data, I sought to re-examine a broad range of archaeological materials from her excavations. This paper presents the results of that study and, for the first time, an overview of Koplin's main findings. In so doing, I seek to contribute to the understanding of the daily life of Swahili people during the mid-second millennium.

Social Difference in Swahili Cities

The data from Koplin's project force us to carefully consider the internal diversity of Gede and other Swahili communities by going beyond the elite/non-elite dichotomy. As Wynne-Jones (2018, p. 293) notes, that duality uncritically reproduces recent ethnographic categories that may not apply to past situations. It also carries assumptions that originated from the misguided distinctions the pioneer archaeologists of the East African coast drew between urban Swahili living in stone houses and other Africans living in the hinterland. Certainly, features of the stone-house-dwelling Swahili elite reflect social difference, in terms of access to the resources required for such architecture, the concentrations of imported goods associated with them, and permanent ties to the landscape, as well as wealth and the capacity for conspicuous consumption and generosity, especially through feasting (Fleisher 2010a; Wynne-Jones and Fleisher 2016). But in reifying "elite" material culture signatures into a social category, the practices that created and maintained those categories during daily life are flattened or ignored, and variability in the material culture signatures of such practices might not be perceived (Wynne-Jones 2016).

Similarly, grouping all of the Swahili living outside of stone-houses as an undifferentiated class of "commoners" misses the diversity that existed between them. For instance, spatially segregated craft specialization has been found at Swahili sites such as Shanga, Vumba Kuu, Songo Mnara, and Mtambwe Mkuu (Horton 1994, 1996, forthcoming; Sulas et al. 2017; Wynne-Jones 2012), though not at others (e.g., Chwaka) where generalized household production was the norm (LaViolette and Fleisher 2009). Such specialization would likely have created differences in wealth among households

living in earth-and-thatch. At Shanga, occupational specialization has also been connected to ethnic differentiation (Horton 1996), which is supported by linguistic evidence (see Ray 2018). There were certainly differences between the Swahili elite living in stone houses and other Swahili people living in earth-and-thatch (e.g., Wynne-Jones 2013), but there were also differences—in wealth, occupation, ethnicity, and other aspects of identity—among the latter. They were not an undifferentiated group of poor people. Archaeological research at sites like Chwaka has shown that some well-to-do Swahili people may have remained in earth-and-thatch homes and invested in religious architecture rather than stone-houses (LaViolette and Fleisher 2009, p. 454). Koplin's project targeted earth-and-thatch dwelling "commoners" at Gede, and its results demonstrate the diversity within that category. Indeed, the project's greatest contribution is showing some of the various kinds of social statuses that characterized the so-called Swahili commoners.

Gede on the Swahili Coast, Gede in Swahili Archaeology

Gede is located in the heart of the Swahili coast, 4 km inland from the southern Kenya coast between Mombasa and Malindi (Fig. 1). From a geographical standpoint, this location positioned the town to take advantage of the environmental opportunities the Indian Ocean littoral offered. It was near enough to the sea to have regularly exploited marine resources, but also able to utilize the relatively fertile soils and woodland resources available further away from the coast. As part of the Nyali coast, Gede and the surrounding coastal plain received greater and more reliable rainfall than areas further north and further inland, with associated benefits for agriculture (Sombroeck et al. 1982). Gede's inhabitants would have been able to take advantage of abundant marine resources, especially those present in and around coral reefs and mangrove forests. While Gede is not located directly on the ocean, distinguishing it from virtually all other Swahili urban centers, it was near enough to exploit marine resources via Mida Creek, a mangrove-fringed basin connecting to the sea. Gede's location was also within the region of East Africa influenced by the Indian Ocean Monsoon, enabling sailors to reach the Middle East and return to the Swahili Coast within a single year.

The core site of Gede covers 18 ha enclosed within the outer town wall, itself encircled by a forest considered sacred to the surrounding community (Pradines 2003; Prins 1952; p. 47; see Fig. 2). There is also a smaller, inner town wall that was built in the sixteenth century, enclosing the town's urban center: two mosques, the large structure known as "the Palace," ten other houses, and four monumental tombs, all built of coral stone and lime plaster (Kirkman 1975). Other stone buildings are scattered elsewhere inside the outer town wall, some standing and identifiable as houses or mosques, others overgrown piles of rubble. These include at least four large, multi-room stone houses and five mosques, one of which was located along the southern side of the outer wall. While this stone architecture has contributed to much of Gede's fame, the full extent of the town was nearly twice as large as the area enclosed by the outer wall, as Kirkman suggested (1954, p. xiii) and was confirmed by Pradines (2003, 2010).

Gede's occupation coincided with the early second-millennium florescence of Swahili society. The town was inhabited between the twelfth and seventeenth centuries, with an apex in the 1400s and 1500s (Kirkman 1954; Pradines 2010). Gede demonstrated many of the characteristics of Swahili society at the time. The town's population made and used relatively large numbers of open bowls and globular pots, and ate cattle, chicken, sheep, and goats. They participated in Indian Ocean commercial networks, obtaining a wide variety of Chinese and Middle Eastern ceramics and other luxuries, which they incorporated into their daily lives. Beyond material goods, those connections also brought ideas and related practices, most notably Islam, and the prominent presence of Muslims at the site is epitomized by the existence of eight mosques (Pradines 2010). The wealthy at Gede, living in their stone-houses, largely exemplified the model of mercantile Swahili society. At the same time, it is worth noting that Gede is a particular type of Swahili site: while certainly wealthy, it was smaller and probably less powerful than its neighbors, Malindi (Qin and Ding 2018) and Mombasa (Sassoon 1980), and did not appear in the Portuguese sources of the time. It therefore offers the opportunity to understand the dynamics of a well-to-do town that was not a political and economic center, perhaps akin to the role of Songo Mnara or Sanje ya Kati within the Kilwa Archipelago in Tanzania (see Pradines 2006; Wynne-Jones and Fleisher 2010).

Fig. 1 Map of the Swahili Coast, showing Gede

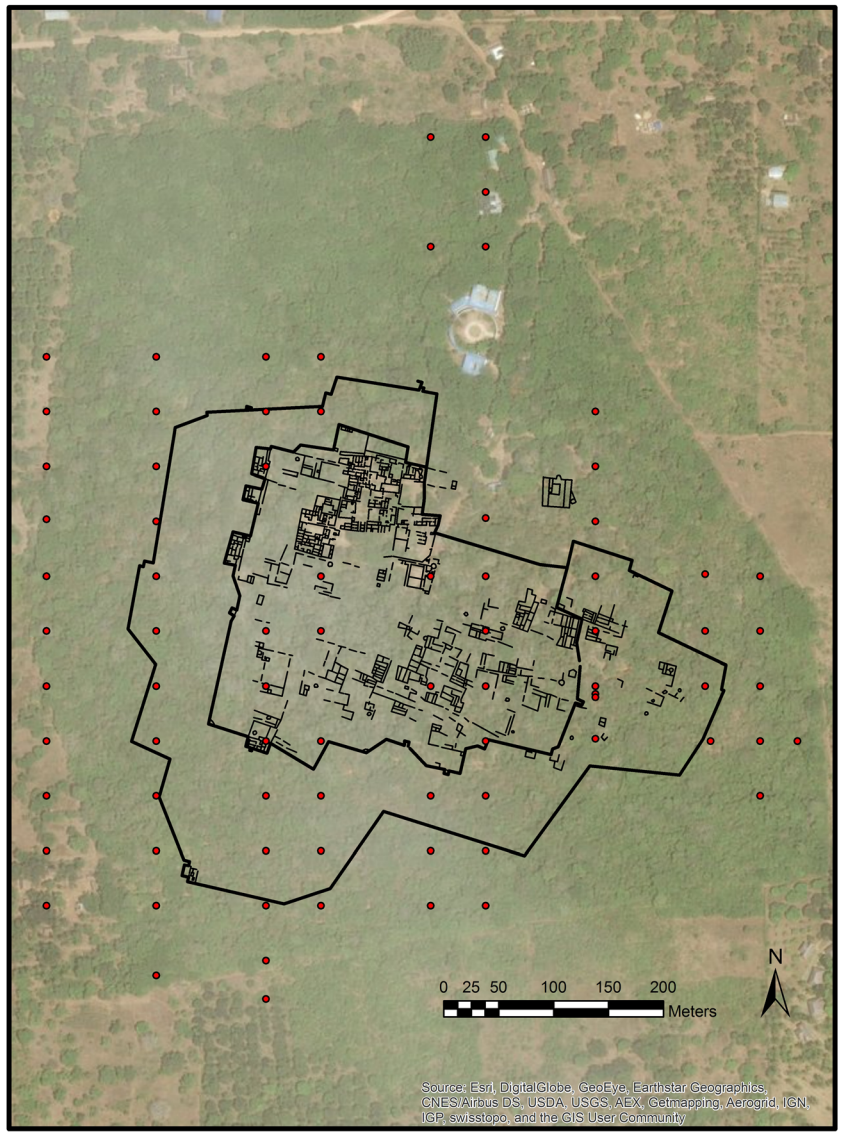

Fig. 2 Map of Gede with shovel test pit locations

In addition, Gede has pride of place in the development of Swahili archaeology that is much grander than its somewhat average political and economic standing (for a fuller discussion, see Pawlowicz 2018). It was the site of the first professional archaeological excavations of any Swahili town, by James Kirkman, which lasted more than a decade beginning in 1948. Kirkman's (e.g., 1954, 1960, 1963) excavations, with their focus on the standing architecture left behind by Gede's elite inhabitants, set the tone for Swahili archaeology over subsequent decades, both in their focus on the elite and the now discredited assumption that the Swahili were Arab immigrants to the coast. Still, Kirkman's work made important contributions to Swahili archaeology, including describing a material culture sequence that could be compared to assemblages elsewhere and documenting common features of stone-built domestic architecture.

Archaeological work resumed at Gede under Stéphane Pradines from 1999 to 2003. Pradines (2000, 2003, 2010) sought to supplement and refine knowledge from Kirkman's excavations by focusing on the earlier centuries of the site's occupation, especially the chronology of urban development. This focus on the early phases of the site was especially welcome, as they had received relatively little attention from Kirkman who classified them as "pre-mosque" and thus, implicitly,

pre-Swahili. Pradines' work was largely successful, recovering the remains of a large early mosque northwest of the town wall and describing the changes in Gede's settlement, architecture, and material culture over several phases between the twelfth and sixteenth centuries. At the same time, Pradines' excavations—like Kirkman's—primarily focused on Gede's stone architecture and elite neighborhoods. He recognized a distinction at the site between the stone-house-dwelling elite and wattle-and-daub-inhabiting commoners (Pradines 2010, p. 162), but his research agenda was directed at the former.

In addition to the important work by Kirkman, and Pradines, Gede has continued to draw archaeological interest due to its standing ruins and important place in Swahili historiography. In 2009, the site was laser-scanned as part of the Zamani Project run by Heinz Rüther (2002; Zamani 2017), providing a variety of crucial spatial data. More recently, the abundant spatial data produced by Kirkman, Pradines, and Rüther have been combined to analyze the internal spatial organization of the largest structure at the site, referred to as "the Palace," and to track the configuration and use of its rooms over time (Baumanova and Smejda 2017). Also, Alders (2016) recently conducted a survey designed to assess the archaeological profile of the areas outside of the town walls and away from standing stone architecture. The study built on earlier work by Kirkman (1954, p. xiii), Wilson (1982, p. 215), and Pradines (2010, p. 22) in the quest to understand the broader landscape of land, sea, and settlements with which Gede's inhabitants would have regularly interacted.

Koplin's Project

Koplin's project, undertaken in 2001, focused attention for the first time on the majority of Gede's inhabitants, with a methodology specifically designed to recover and investigate areas of earth-and-thatch architecture. The project began with a shovel-test pit (STP) survey both inside and outside of Gede's two town walls to efficiently test for sub-surface remains (see Fig. 2). Sub-surface testing is important on the Swahili coast, and particularly at Gede, because extensive vegetation often makes the surface visibility of archaeological remains of earthen occupations difficult or impossible (Fleisher and LaViolette 1999, LaViolette et al. 1999, Pawlowicz 2012). In total, 81 STPs were excavated on a grid centered between the Palace and Kirkman's Great Mosque, with an STP excavated every 50 m along north-south transects spaced between 50 and 100 m apart. Although there were occasional gaps where the planned STPs avoided stone architecture, the survey provided an understanding of the spatial patterns of archaeological remains. It also recovered a robust sample of artifacts from across the site: 13,803 local ceramic sherds; 267 sherds of imported ceramics; 129 beads, of which a hundred were shell beads, rare for a Swahili site at that period; abundant animal bones; and notable quantities of slag and iron artifacts (see Table 1). The survey also revealed compelling evidence of wattle-and-daub structures.

The second part of the project consisted of excavations in earth-and-thatch neighborhoods. Because the survey was able to suggest the locations of earthen structures, 2 × 2-m units were excavated at ten promising areas, with five placed within the town walls and five outside for comparability. These excavations provided detailed information on households in earth-and-thatch neighborhoods and yielded a diverse material culture sample. The units were excavated by arbitrary levels within natural layers, each of which was drawn and photographed. All the excavated materials were screened, and flotation and charcoal samples were collected. The large-unit excavations produced an extensive collection of artifacts that included 66,857 sherds of local pottery and 1009 sherds of imported pottery (see Table 2). The excavations also yielded several features indicative of earth-and-thatch occupations, such as pits, postholes, and intact floors. The quality of these data enables us to compare earth-and-thatch neighborhoods with one another as well as with Gede's wealthier stone-built zones.

At the same time, as often happens when working with older materials, certain weaknesses in the data available from Koplin's project should be noted before continuing. The most problematic is the absence of Koplin's field notes, which were lost while in storage in Virginia after she stopped working on her PhD degree. However, the other records that we have, including plan and profile drawings for each excavation unit, field forms for all STPs, and artifact counts from each excavated level and STP, leave no reason to suggest that any work was done improperly, and the participation of staff from the National Museums of Kenya (NMK) provides further assurance on that count. Nonetheless, the absence of the day-to-day field notes and the absence of certain materials make some aspects of the data analysis

Table 1 Artifacts recovered from Koplin's survey of Gede. Only the presence or absence of shell and bone was recorded. They were found in 28 and 50 STPs, respectively

Local pottery	13,803
Undecorated body sherds	12,712
Weight of UD bodies (kg)	78.12
Undecorated rims	772
Undecorated bases	48
Decorated bodies	228
Decorated rims	42
Lamps	1
Imported pottery	267
Celadon	40
Blue-and-white porcelain	37
Chinese stoneware	5
Takwa stoneware	1
Persian blue and white	4
Sgraffiato	16
Black on yellow	8
Sasanian Islamic ware	2
Islamic monochrome green	28
Islamic monochrome blue	33
Islamic monochrome purple	14
Islamic monochrome light bl.	10
Gudulia	6
Martabani	7
Slipped earthenware	3
Unglazed gray	29
Unglazed pink	23
Refined earthenware	1
Cowries	34
Glass	44
Slag	63
Metal objects	23
Iron	16
Copper	7
Beads	129
Glass beads	17
Shell beads	100
Bone beads	12
Lithics	34
Spindle whorls	7
Pipes	3
Daub chunks	129

difficult. For instance, while charcoal and flotation samples were collected, there is no record that they were analyzed, nor have I been able to locate the samples. Therefore, important chronological and dietary information is missing from the project. This stands in contrast to the faunal remains, which were reportedly analyzed by John Kimengich of the NMK and for which we have a full report. Other classes of artifacts have incomplete analyses. I have visited Fort Jesus Museum in Mombasa, where some of these archaeological finds are archived, to conduct analysis of the local ceramics. However, information is missing for the shell and glass beads recovered. I also did not have the photographs that were taken during the project, nor records of important methodological details such as the mesh size of the sieves.

Another significant issue concerns spatial information. For the survey, the absolute locations of the STPs were not documented in the available records. However, Mohammed Mchulla of the NMK, who worked with Koplin on her project, and I succeeded in obtaining the coordinates for the datum she used in laying out the grid. The recording of the STPs by their coordinates on the survey grid (e.g., 100 m E, 200 m N) made it possible to determine their absolute locations on the ground. Nevertheless, the locations of Koplin's excavations are unfortunately missing because her full field notes are unavailable. We have only some drawings of the excavated units and the records of the artifact summaries. With the assistance of the NMK staff who worked with Koplin, I was able to suggest the general areas where she may have excavated (Fig. 3). However, while I can identify the material culture coming out of each excavation, and compare the excavations' assemblages, I cannot place those excavated units on the map. This prevents us from being able to fully evaluate the spatial trends indicated by the survey. Similarly, the absence of excavation notes forces us to rely on plan and profile drawings to identify features and earthen architecture. Nonetheless, the richness of the recovered materials, stands to make an important contribution to our knowledge of life at Gede and its place in the archaeology of the Swahili.

Spatial Analysis of Site

As noted above, Koplin's initial STP survey of the site, including zones both inside and immediately outside of Gede's town walls, produced a diverse collection of artifacts. The diversity alone is not surprising given the rich assemblages encountered by other projects exploring the site (Kirkman 1954; Pradines 2010). More

Table 2 Artifacts from Koplin's 2x2 m-units

	A	B	C	D	E	F	G	H	J	K	All
Local Pottery	7,359	4,847	4,021	15,953	2,646	12,035	2,050	7,478	6,431	4,037	66,857
Undecorated Bodies	6,557	4,220	3,449	13,562	2,310	10,543	1,781	6,708	5,875	3,575	58,580
Undecorated Rims	370	353	361	1,557	228	688	141	488	330	183	4,699
Undecorated Bases	19	14	36	106	12	33	7	17	20	12	276
Decorated Bodies	136	55	88	279	26	141	24	99	74	34	956
Decorated Rims	11	19	9	85	17	64	38	50	32	20	345
Painted/Burnished Sherds	265	186	77	364	53	564	59	116	99	213	1,996
Handles	1	0	1	0	0	2	0	0	1	0	5
Lamps	0	0	1	3	0	0	0	0	2	0	6
Local Pottery Wt. (kg)	42.44	47.16	34.19	160.29	31.23	98.81	20.2	68.96	42.8	33.04	579.12
Imported Pottery	107	49	88	168	122	127	50	173	72	53	1,009
Glass	18	53	10	7	58	40	23	58	60	6	333
Slag Weight (kg)	0.01	0.01	0.12	0.89	0.03	0.23	0.02	0.17	1.25	0.07	2.8
Metal Objects	2	22	15	11	5	13	24	0	8	0	100
Beads	6	24	129	22	15	95	21	18	295	4	629
Lithics	11	16	15	10	8	8	3	5	42	0	118
Spindle Whorls	0	1	0	0	1	1	0	0	1	0	4
Pipes	0	0	0	0	0	0	0	0	0	0	0
Faunal Material (kg)	1.14	2.36	6.9	4.95	1.86	4.08	0.93	3	2.88	0.47	28.57
Cowries	0	0	0	0	0	33	0	10	31	6	80
Ground Sherds	0	0	0	0	0	7	3	7	2	0	19

significant are the spatial variability and patterning of the artifact collection from the survey, detailing concentrations of wealth and production activities. Certain classes of artifacts, such as local ceramics (Fig. 4), were found across the entire site but were especially concentrated in certain places, suggesting areas of communal deposition, for instance along the western side and easternmost corner of the outer town wall. The absence of artifacts from many of the STPs at the eastern and western edges of the survey also suggests boundaries for the site, confirming Pradines' (2010) estimation of a maximum extent of ca. 30 ha, though there is clear evidence for activity and occupation outside of the town walls, particularly to the north and south. Other kinds of artifacts were encountered less frequently, indicating specialized, spatially restricted production. The distribution of slag shows two such concentrations, one in the southwest part of the site and the other just east of the inner wall (Fig. 5). Shell beads were found in a few concentrations, with a very large number likely indicative of a workshop or distribution center located east of the outer wall (Fig. 6).

Perhaps the most intriguing information came from the spatial distribution of different kinds of imported ceramics recovered by the survey (Fig. 7). Overall, the ceramic imports concentrated within the stone-walled portion of the site, exactly as we might expect from Kirkman's and Pradines' discussions of elite/commoner distinctions. However, distinct categories of imports clustered in different portions of the site, including outside the town walls in some cases. For instance, while the celadons were common throughout the center of the site inside the walls, the monochromes were especially concentrated towards the west, and blue-and-white porcelain was found primarily within the eastern portion of the inner town wall. This evidence shows differential consumption of certain kinds of imported ceramics, with implications regarding access and taste, the nature of interregional trade conducted at Gede, and gradations of performative wealth among its inhabitants. There is also an intriguing temporal component to this spatial variation, as black-on-yellow and sgraffiato ceramics from the early second millennium

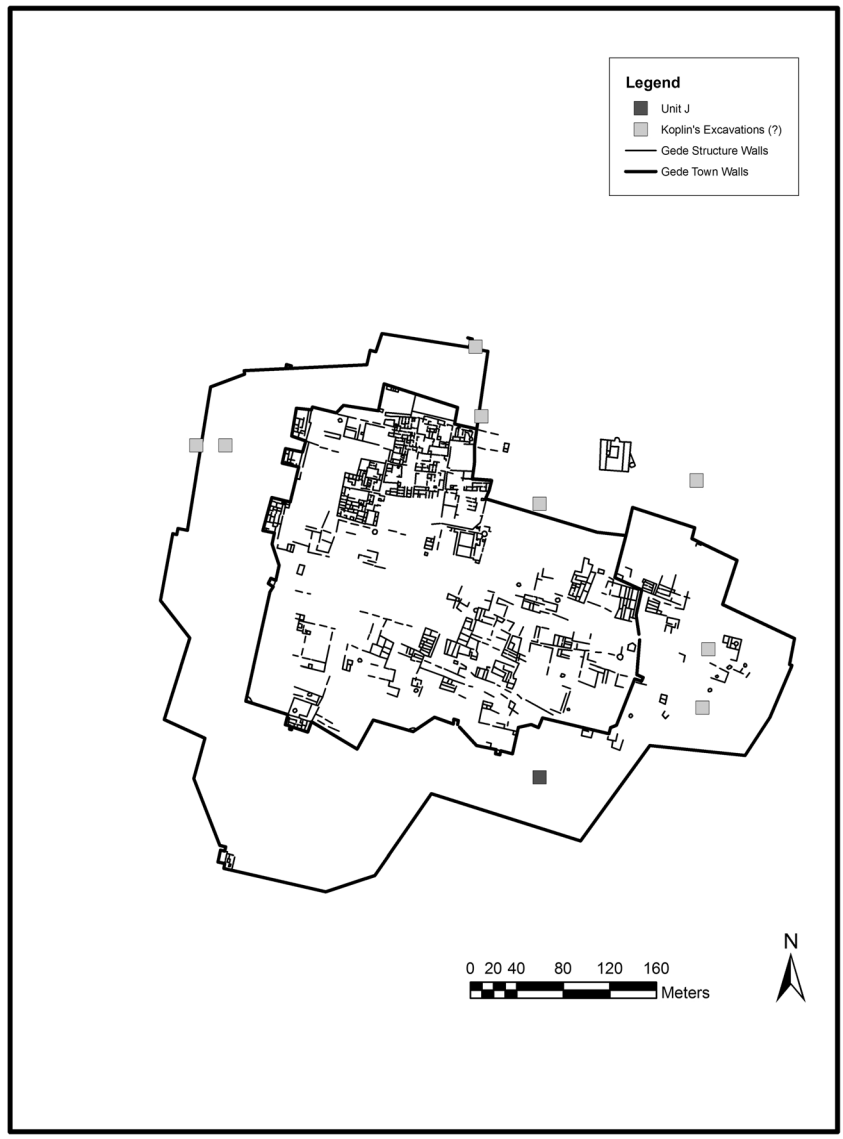

Fig. 3 Map of Gede showing likely areas of excavations

are concentrated outside of the town wall in the northeast, where Pradines' early mosque is located and where he suggested a fourteenth-century city center existed (Pradines 2003, 2010). In contrast, the later-period imported ceramics concentrated further south and west, with the Chinese ceramics mostly within the town walls.

The survey thus provided findings relevant to Koplin's research questions about Gede's chronology and spatial variation in material culture. The boundaries of the entire community, not just the stone-walled portion but including wattle-and-daub neighborhoods, began to come into focus. Across the site, there was clear evidence of differences in wealth, as well as the specialized production of certain commodities, including trade goods. There were also important indications of change over time, with the spatial arrangements of certain artifacts—and the social relationships they indicate—mirroring some of Pradines' (2010) chronological shifts. And so, many of the findings from the survey called out for further detail, particularly to explore differences between earth-and-thatch neighborhoods. Koplin's program of excavations was designed to provide this detail.

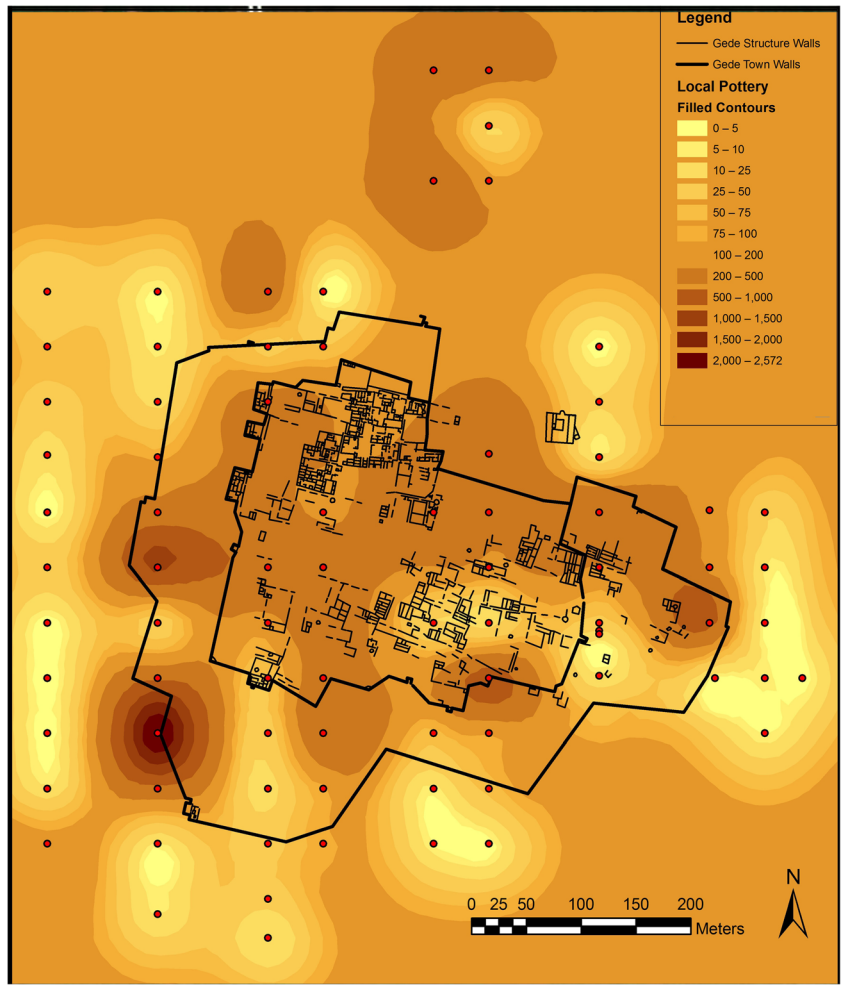

Fig. 4 Predicted density of ceramics (counts) at Gede based on survey results

Excavations Targeting Earth and Thatch

As noted above, Koplin's project excavated ten 2 × 2-m units within earth-and-thatch neighborhoods both inside and outside the town walls (five units each on the inside and outside of the walls). These excavations recovered an abundance of artifacts, which provides us with excellent insight into the practices of daily life for a broad swath of those living in Gede's earthen houses. It also enables comparison between units, with other projects at Gede focusing on stone-walled neighborhoods, and with other Swahili sites along the coast. Unfortunately, the absence of field notes, radiocarbon samples, and spatial data hamper the understanding of the chronological component of these excavations, though certain trends can be suggested based on the local and imported ceramics. Full descriptions and comparison of the artifact assemblages recovered from the excavations are provided below.

Before proceeding to those descriptions, however, it is important to discuss the contexts of the excavated units. While we do not know the precise location of nine of the ten excavations, it is certain that all were located within earth-and-thatch neighborhoods. All the excavated units yielded the remains of wattle-and-daub structures. However, excavators encountered earthen floors, daub pavements, and other structural features in only four of these ten units (units D, E, G, and J) (see Table 3). Unit E also contained an ash-filled pit. Each of these features does not, however, indicate a *single* household or structure. Instead, the evidence from some of the units suggests levels of multiple structures that were likely built over several generations (Fig. 8). Additional floor levels might have been encountered in some of the other units, but excavations in three (units

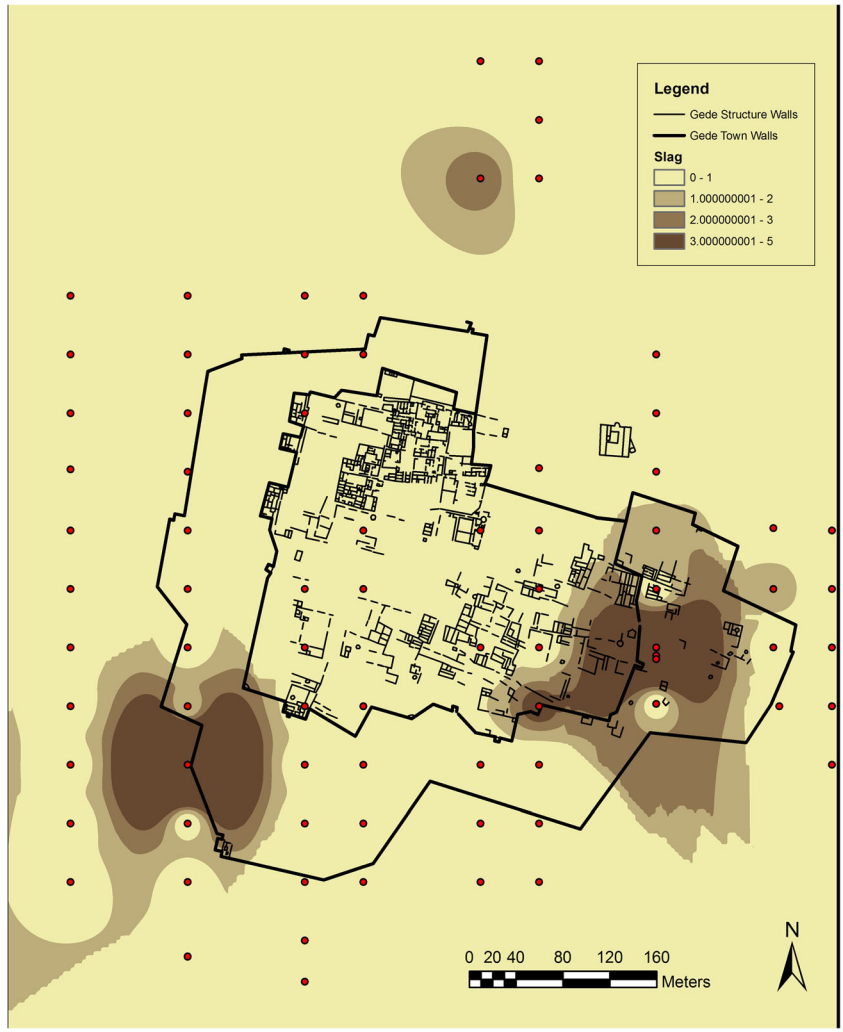

Fig. 5 Predicted density of slag (counts) at Gede based on survey results

C, F, and H) were closed after encountering burials. As described by Pradines (2000) from elsewhere at the site, the burials were oriented with the feet towards the West, the head to the East, and turned to face Mecca. Of the remaining three units (units A, B, and K), all were rich in artifacts and had daub and plaster concentrations in sediments. Unit B had postholes in various levels and unit K a set of two postholes, but it is unclear whether or not the recovered material and postholes were definitively associated with a structure, particularly in the absence of detailed field notes. Some sense of the quantity of daub and plaster would have been important in determining whether these units represented the sites of structures or middens. Unfortunately, we do not have that data. Nevertheless, the excavation plans and profiles suggest that unit D was used as a midden after the abandonment of its most recent structure and that unit F also likely contained a midden. Given the uncertain use-histories of some of these locations and the absence of excavation notes, we should be cautious when interpreting data from the excavations and comparing them. But their assemblages still give us some sense of the variability among the earthen-house neighborhoods and their inhabitants.

Material Culture amid Earth-and-Thatch: Trade Goods

Imported Ceramics

Imported ceramics and beads were prevalent at Gede from its initial investigations (e.g., Kirkman 1954, 1963), and they were also found in substantial numbers

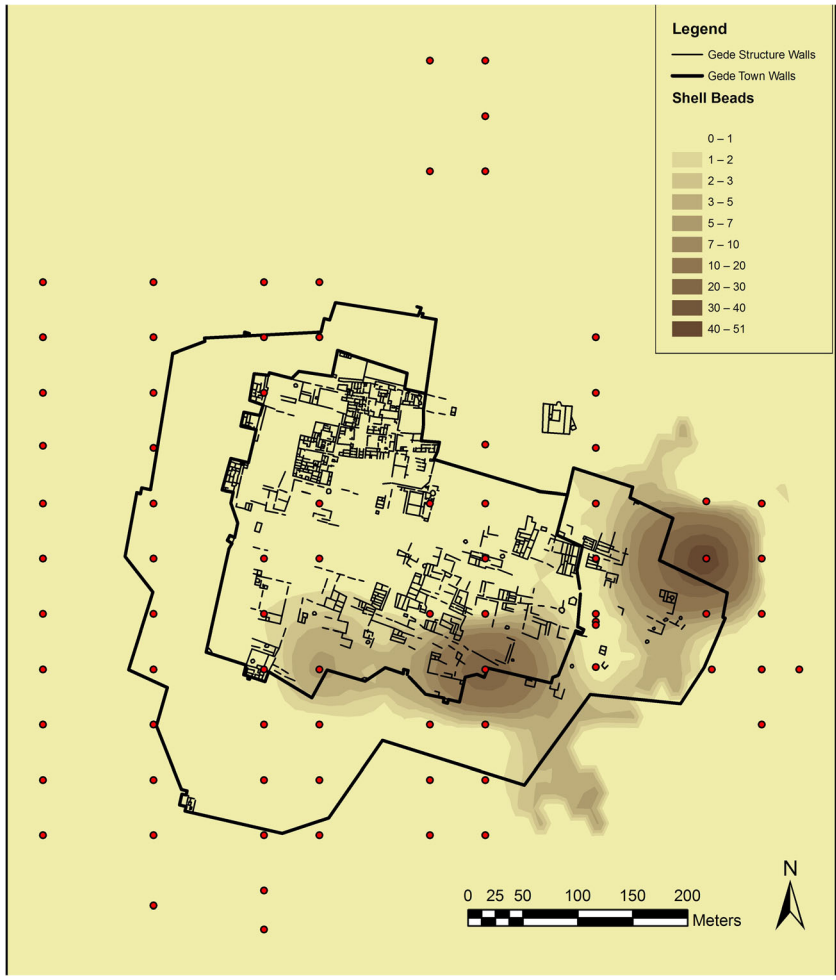

Fig. 6 Predicted density of shell beads at Gede based on survey results

during Koplin's project. Moreover, the kinds and proportions of imported ceramics found in the earth-and-thatch neighborhoods largely mirrored those recorded by Kirkman (e.g., 1954). These facts emphasize that all Swahili people at Gede had access to imported goods during the second millennium. This is not surprising. It has been demonstrated for a variety of other coastal regions that Swahili people, across different levels of the social ladder, incorporated such imported goods into their household assemblages during this period (e.g., Fleisher 2010b; Horton 1996; LaViolette 2008; Walz 2010; Wynne-Jones 2007).

The most prevalent kinds of imported ceramic found during the excavations were the Islamic monochromes (Table 4). These vessels, dating from the mid-fourteenth century onwards, were common on many Swahili sites of the second millennium (e.g., Chittick 1974; Horton 1996; Wilson and Lali Omar 1997). The most common glaze color at Gede was green, though blue monochromes were also quite common. Blue and green monochromes were found in every unit, making up at least a quarter of the imported ceramic assemblage, except for unit G, which yielded no monochromes of any kind, though it did yield other imports. At unit D, almost 75% of the imported assemblage was monochromes ($n = 112$). Other kinds of monochromes found in the excavations included clear/pale cream (in 7 units), purple (recovered in low numbers from 5 units), and manganese purple imported from the Middle East beginning in the sixteenth century (also recovered from 5 units).

The next most common types of imported ceramics were celadons. These likely represent the Longquan green-glazed stoneware that were produced in China and common on the coast from the thirteenth century, but dwindled during the sixteenth century, (Zhao and

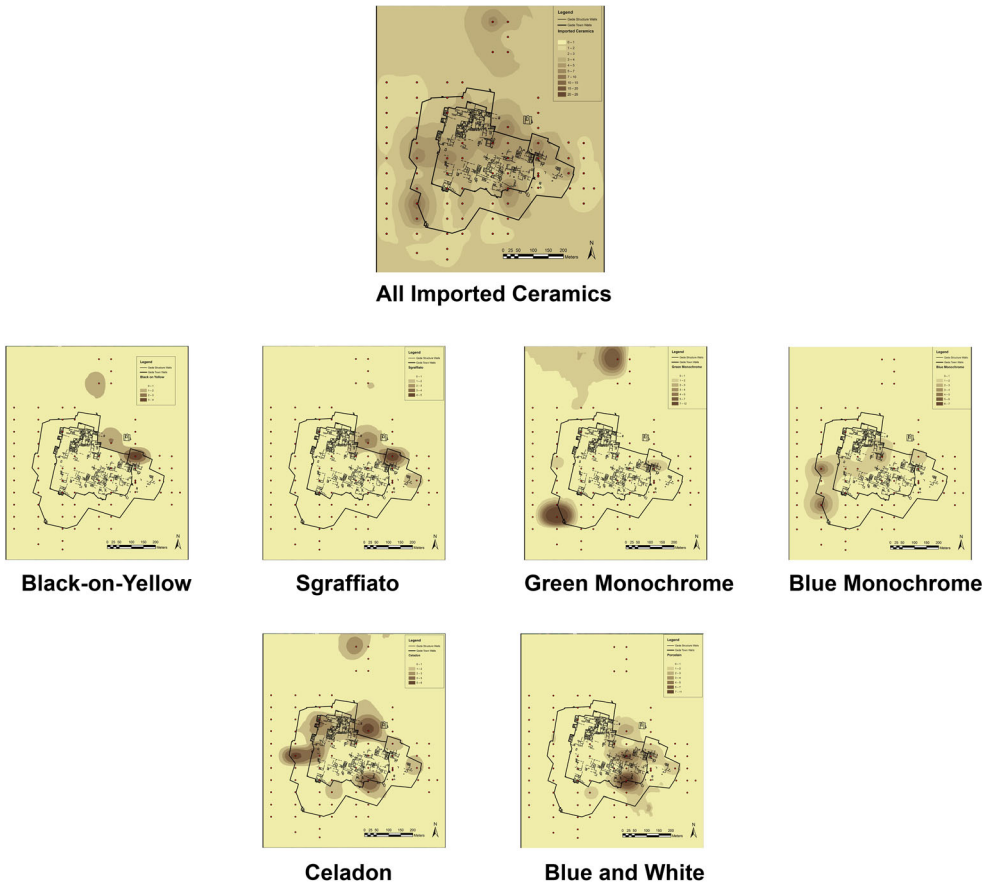

Fig. 7 Predicted density of types of imported ceramics at Gede based on survey results

Qin 2018). At Gede, celadon was recovered from every excavation unit and made up almost 25% of the total imported ceramic assemblage. There was, however, significant variation in the number and proportion of celadons from individual units, with unit A yielding nearly 44% celadons ($n = 47$) and unit C only 8% ($n = 7$). Such distinctions were also common for Chinese blue-and-white porcelain, which was relatively rare on the coast until the mid-fifteenth century but found in significant numbers at Gede (Zhao and Qin 2018). This type made up almost 8% of the imported ceramic assemblage recovered in the excavations. Blue-and-white porcelain was recovered from all units but two, units A and G. Among those units that yielded this type, two (units D and J) had single sherds, while unit C had 39 sherds, accounting for 44% of its ceramic assemblage. In combination with the survey data, this suggests a notable degree of spatial variation for consumption of blue-and-white porcelain.

Black-on-yellow ceramics were also found in significant numbers and showed notable variation. These ceramics were produced in southern Arabia near Aden and are characteristic of Swahili sites during the

Table 3 Descriptions of Koplin's excavations

Unit	Excavation details
A	Unit has plaster and daub fill, but no clear floor levels
B	Unit produced daub, ash lenses, and postholes at various depths
C	Unit stopped early for burial
D	Unit has multiple floor levels
E	Unit has daub pavement, coral stone concentration
F	Unit has daub fill layers then come down on a burial
G	Unit has daub and plaster concentrations; likely floor level
H	Unit has concentrations of daub before encountering burials
J	Unit has plaster concentrations, likely floor level
K	Unit has plaster concentrations, but no clear floor levels

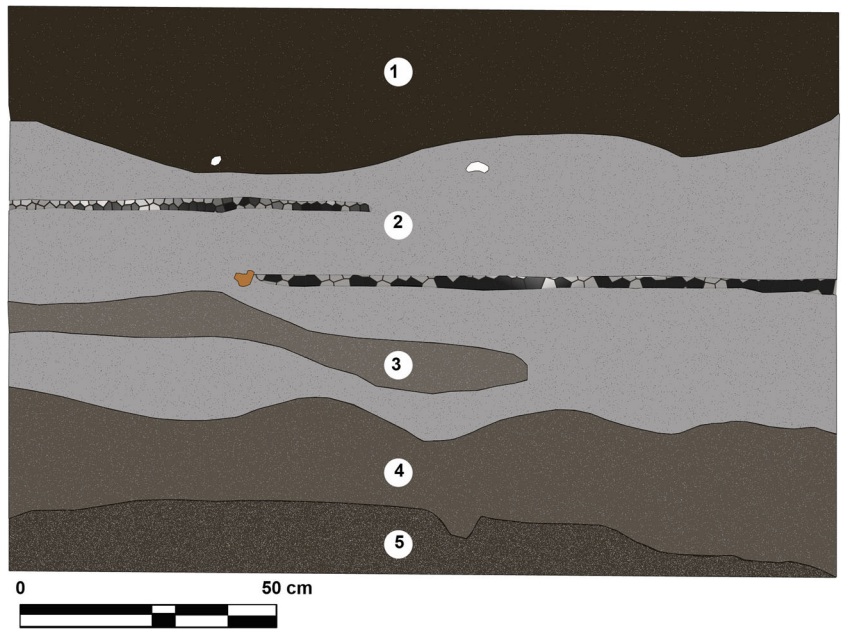

Fig. 8 Profile of unit D, east profile, 0–110 cm, showing floor levels (horizontal features in level 2 containing stones and clay). Layer 1 is a dark grayish-brown hummus. Layer 2 is an ashy gray material. Layer 3 is a band of brown material. Layer 4 is the same brown material. Layer 5 is reddish brown subsoil. Also drawn are coral stones at the bottom of layer 1 and top of layer 2, and a ceramic sherd adjacent to the north end of the lower floor level

Table 4 Imported ceramics recovered from Koplin's excavations

	A	B	C	D	E	F	G	H	J	K	All
Imported Pottery	107	49	88	168	122	127	50	173	72	53	1,009
Celadon	47	8	7	19	38	33	14	55	15	13	249
Blue-and-White Porcelain	0	7	39	1	7	7	0	6	9	1	77
Chinese Polychrome Porc.	0	0	0	1	0	0	0	0	0	0	1
Chinese Stoneware	0	0	0	1	0	0	0	1	0	0	2
Persian Blue and White	1	0	1	2	1	1	0	0	1	0	7
Sgraffiato	0	1	0	0	0	0	0	2	0	0	3
Black on Yellow	2	5	1	2	12	0	30	12	18	4	86
Manganese Purple	0	0	9	13	5	5	0	1	0	0	33
Islamic Polychrome	1	0	0	0	1	1	2	3	2	0	10
Islamic Monochrome Green	30	15	3	63	20	22	0	22	4	19	198
Islamic Monochrome Blue	7	5	2	33	5	32	0	17	12	8	121
Islamic Monochrome Purple	1	0	1	0	2	0	0	1	6	0	11
Islamic Monochrome Clear	5	5	7	16	1	3	0	7	0	0	44
Islamic Monochrome Light Bl.	0	0	1	0	0	0	0	0	0	0	1
Gudulia	0	0	0	0	0	0	0	0	0	0	0
Martabani	0	0	0	0	0	0	0	0	0	0	0
Slipped Earthenware	0	0	1	1	4	1	0	0	0	0	7
Yellow Glazed	0	0	0	1	1	0	0	1	0	0	3
White Glazed	4	0	3	1	5	0	2	1	1	1	18
FrE Glazed*	6	0	4	5	5	3	1	7	1	6	38
Unglazed Gray	3	3	6	9	6	18	1	5	2	1	54
Unglazed Pink	0	0	3	0	9	1	0	1	1	0	15
Refined Earthenware	0	0	0	0	0	0	0	0	0	0	0

* It is not clear from notes what the category "FrE Glazed" refers to

thirteenth and fourteenth centuries (Horton 1996, p. 191). At Gede, the black-on-yellow sherds were recovered from every unit except unit F. While they were infrequent in many units, they formed 60% of the ceramic assemblage ($n = 30$) in unit G, and 25% ($n = 18$) of the assemblage in unit J. Other notable imported ceramic types were rarer. Only three sherds of sgraffiato were recovered, one from unit B and two from unit H. Similarly, two sherds of non-celadon Chinese stoneware were found, in units D and H. Ten sherds of Islamic polychrome were recovered in low numbers from six units, and seven sherds of Persian blue-and-white came from a different set of six units. Sherds of unglazed gray ($n = 54$) and pink ($n = 15$) fabrics were also recovered from different contexts.

One way to explore the role of imported ceramics in earth-and-thatch neighborhoods is to consider the import ratio—the number of sherds of imported ceramics found per 100 sherds of locally produced ceramics. Overall, Gede's import ratio from Koplin's excavations is 1.51, which is below some other well-known second-millennium Swahili sites such as Shanga at 4.2 and Kilwa at 2.0 (see Wright 1993). But rather than dwelling on this regional comparison, which may reflect different methodologies of recovery and sampling bias, comparing the ratios *within* the site is more illustrative (Table 5). The two excavations that encountered middens, units D and F, had ratios just above 1, undoubtedly speaking to aspects of deposition there. Several other units had similar low ratios, while three excavation units (C, G, and H) had ratios above 2, and unit E approached 5, indicating differential consumption of imported ceramics.

There are significant variations in the proportions and kinds of imports found in the units, and in particular for those with earthen floors (Table 5; see units D, E, G, and J). Some of these variations are likely temporal. The prevalence of black-on-yellow pottery in unit G and the absence of later monochromes and blue-and-white porcelain suggest that the unit is earlier than the others. In addition, the high percentage of blue-and-white porcelain, the presence of manganese purple sherds, and the low numbers of black-on-yellow sherds and green monochromes in unit C indicate that the archaeological deposits in the unit came relatively late in Gede's chronology, which makes sense given that excavation was halted there in only the second layer because of a burial. Because unit A has the highest proportion of celadon and a substantial number of monochromes, but no blue-and-white porcelain or purple manganese and just two sherds of black-and-yellow, it likely represents the middle phase of Gede's occupation.

Other differences in the imported ceramics suggest different patterns of consumption, however. For instance, while unit D has sherds representing all of the major ceramic types, as well as some of the rarer varieties, it has many more monochromes of all types than expected. Unit D also yielded a notable amount of manganese purple, but relatively few celadons, and little blue-and-white porcelain or black-and-yellow. Units E and H, in contrast, have examples of all major types but have more celadons and fewer monochromes. Unit J has

Table 5 Import ratios and imported ceramic type proportions for Koplin's excavations

Unit	Local pottery	Import ratio	% Celadon	% Blue-and-white	% Black-on-yellow	% Green monochrome	% Other monochrome	% All monochrome
A	7359	1.45	43.9%	0.0%	1.9%	28.0%	12.1%	40.2%
B	4847	1.01	16.3%	14.3%	10.2%	30.6%	20.4%	51.0%
C	4021	2.19	8.0%	44.3%	1.1%	3.4%	22.7%	26.1%
D	15,953	1.05	11.3%	0.6%	1.2%	37.5%	36.9%	74.4%
E	2646	4.61	31.1%	5.7%	9.8%	16.4%	10.7%	27.0%
F	12,035	1.06	26.0%	5.5%	0.0%	17.3%	31.5%	48.8%
G	2050	2.44	28.0%	0.0%	60.0%	0.0%	0.0%	0.0%
H	7478	2.31	31.8%	3.5%	6.9%	12.7%	15.0%	27.7%
J	6431	1.12	20.8%	12.5%	25.0%	5.6%	25.0%	30.6%
K	4037	1.31	24.5%	1.9%	7.5%	35.8%	15.1%	50.9%
All	66,857	1.51	24.7%	7.6%	8.5%	19.6%	20.8%	40.4%

somewhat reduced proportions of both celadons and monochromes, but has one of the highest proportions of black-on-yellow ceramics and blue-and-white porcelains. Some of these differences are likely due to taste, preference, and availability at particular periods. Intimately related to taste is the question of use. In this regard, the prevalence of monochromes in the units with middens (D and F), particularly their abundance in unit D, raises the question whether such ceramics might have been used in quotidian ways more frequently than the Chinese wares. The latter may have served as a marker of greater wealth among certain households and therefore ended up on display, rather than being utilized in food consumption.

Beads and Glass

The excavations yielded significant quantities of other imported goods, such as beads and glass. In total, 629 beads and 333 pieces of glass were recovered from the excavations (Table 6). Both classes of artifacts were found in every unit, though in widely varying numbers. It is likely that all or most of the glass was external in origin. The majority of the glass was green (223 pieces), and 100 fragments of clear glass were also recovered, along with nine fragments of blue glass, and one piece of recent brown bottle-glass. All units yielded green glass, though units B and H had concentrations above 50 shards and units C, D, E, and K had fewer than 10. Clear glass was found in every unit except unit K, with the largest concentration found in unit E, the only unit with a count above 15. Blue glass was found in five units, with no unit producing more than three pieces. The distribution pattern of glass artifacts overlaps with that of the imported ceramics in some ways. For instance, units E and H have high concentrations of both. But the fact that these units had concentrations of different kinds of glass, and that other units with smaller counts and ratios of imported ceramics (B and J) also had high concentrations of glass, suggest that wealth is not the only factor at play here. It seems that either less wealthy units gained access to glass or certain households preferred glassware rather than imported ceramics for reasons relating to identity that are not yet well understood.

Of the 629 beads recovered during the excavations, 109 were glass beads—likely of external origin. Glass beads were found in low numbers (below 27) in each of the units, with the highest concentration in unit J. The majority of the beads ($n = 446$) were of shell, however, and were likely produced locally, given the presence of grooved corals that may have served as bead grinders (Flexner et al. 2008). While every unit except unit K yielded at least one shell bead, they were concentrated in units J ($n = 254$), C ($n = 102$), and F ($n = 53$). In unit C, all but three of the shell beads were associated with the burial, though the shell beads at the other two locations probably represent workshops. The household(s) of unit J seems to have specialized in bead production and distribution more generally, as that unit has the most glass and shell beads, the second largest number of bone beads, and the only instance of a metal bead. Stone beads were recovered from five units, with the only count above one from unit C ($n = 5$). They were made

Table 6 Beads and Glass recovered from Koplin's excavations

Unit	A	B	C	D	E	F	G	H	J	K	All
Beads	6	24	129	22	15	95	21	18	295	4	629
Glass beads	4	5	14	12	11	9	17	8	26	3	109
Shell beads	1	16	102	7	2	53	2	9	254	0	446
Bone beads	0	2	8	3	1	33	2	1	14	0	64
Metal beads	0	0	0	0	0	0	0	0	1	0	1
Stone beads	1	1	5	0	1	0	0	0	0	1	9
Glass	18	53	10	7	58	40	23	58	60	6	333
Blue glass	3	0	0	0	2	0	1	2	1	0	9
Green glass	11	50	3	1	5	30	19	54	44	6	223
Clear glass	3	3	7	6	51	10	3	2	15	0	100
Brown glass	1	0	0	0	0	0	0	0	0	0	1

mostly of carnelian and rock crystal. Also of note were 64 bone beads, found in every unit except A and K, with highest concentrations in F and J. Several of these bone beads were made of ivory.

The beads recovered during the excavations indicate that craft specialization was present within the earth-and-thatch neighborhoods. For instance, units J and F contained the largest number of shell and bone beads, presumably produced on site. It is also worth noting that shell beads are widely attested along the coast from the sixth through the tenth centuries CE, either through finds of the fragile beads themselves or of grinding tools used in their manufacture (see Flexner et al. 2008). However, they seem to disappear from many sites along the northern Swahili coast during the second millennium (though they remain popular in the Kilwa region, see Wynne-Jones 2005, p. 180). The large numbers of shell beads found at Gede are an exception to this trend, suggesting that local taste for shell beads may not have changed here in the same way as elsewhere, though sampling and recovery methodologies may also contribute to the current picture.

Material Culture amid Earth-and-Thatch: Local Ceramics

General Metrics

The available notes and artifact records for the local ceramics recovered from earth-and-thatch neighborhoods suggested that Gede's majority inhabitants were participating in broad coastal consumption trends. The overall proportion of decorated ceramics in those neighborhoods was low, below 5%. The most frequently employed motifs were punctate decorations and oblique incisions, as at Mombasa (Sassoon 1980). However, the inability to consider the combinations of ceramic traits (i.e., vessel form with thickness and decoration) presented a significant limitation to the analysis of locally produced ceramics at Gede and comparison with other Swahili sites. To correct this, in 2015 I engaged in a reanalysis of some of the locally produced ceramics from Koplin's project archived at the Fort Jesus Museum in Mombasa. I studied the complete collection of local rimsherds for 8 of the ten excavation units, missing only units C and D for logistical reasons. The attributes of vessel and rim forms (following Phillipson 1976, p. 21–22), surface finishing, rim and body thickness, paste, and rim diameter were collected when possible for each rimsherd. Such methodology followed similar recent efforts at ceramic analysis on the coast that had proved successful (Fleisher and Wynne-Jones 2011; Pawlowicz 2013). The reanalysis yielded a robust sample of 1440 sherds with sufficient information to enable the identification of the ceramic types used by Gede's inhabitants in the earth-and-thatch neighborhoods. This data can be compared to the results from other projects at Gede and elsewhere on the coast.

Some general trends emerge from this analysis, which shows that Gede's earth-and-thatch inhabitants shared the broader ceramic traditions on the Swahili Coast. For instance, the most common vessel forms were open bowls and globular jars, as encountered elsewhere along the coast in the early- to mid-second millennium (e.g., Fleisher 2003; Horton 1996; LaViolette and Pawlowicz in prep; Sassoon 1980; Wilson and Lali Omar 1997). The former made up nearly half of the total assemblage and was above 40% in every unit but one (unit G, where it was 39%). The globular vessels came in a variety of forms, including hole-mouth jars, up-turned rim vessels, and large convergent-mouth pots. Carinated vessels and shallow bowls made up less than 10% of the assemblage. Most of the rims from Koplin's excavations were rounded (65%, $n = 985$), with 16% of the rounded rims also tapered at the rim ($n = 156$) and smaller numbers thickened or out-turned. The remaining rims were flattened, including nearly 5% of all rims showing a large platform rim, and 2% of the sherds had beveled rims ($n = 22$). The thickness of the rims at Gede ranged between 4 and 19 mm, though they showed a fairly normal distribution around 8 mm (Fig. 9). The paste was fairly uniform across the site and vessel forms, consisting mostly of brown clays with light sand and shell tempering, though rare instances of black, gray, red, and yellow pastes were encountered. The rim diameter measurements provided an interesting perspective on vessel size in the earth-and-thatch neighborhoods. Some narrow-mouthed vessels had a diameter of only 8–10 cm, some jars were between 14 and 18 cm, similar to diameters recorded by Kirkman (1954, p. 88), and a range of larger vessels had diameters above 20 cm. Bowls tended to have larger diameters than jars, though there were some bowls with small diameters. Those were likely used for individual, rather than communal, eating and drinking. Unfortunately, during the reanalysis consistently accurate diameter measurements above 20 cm could not be obtained, so the average

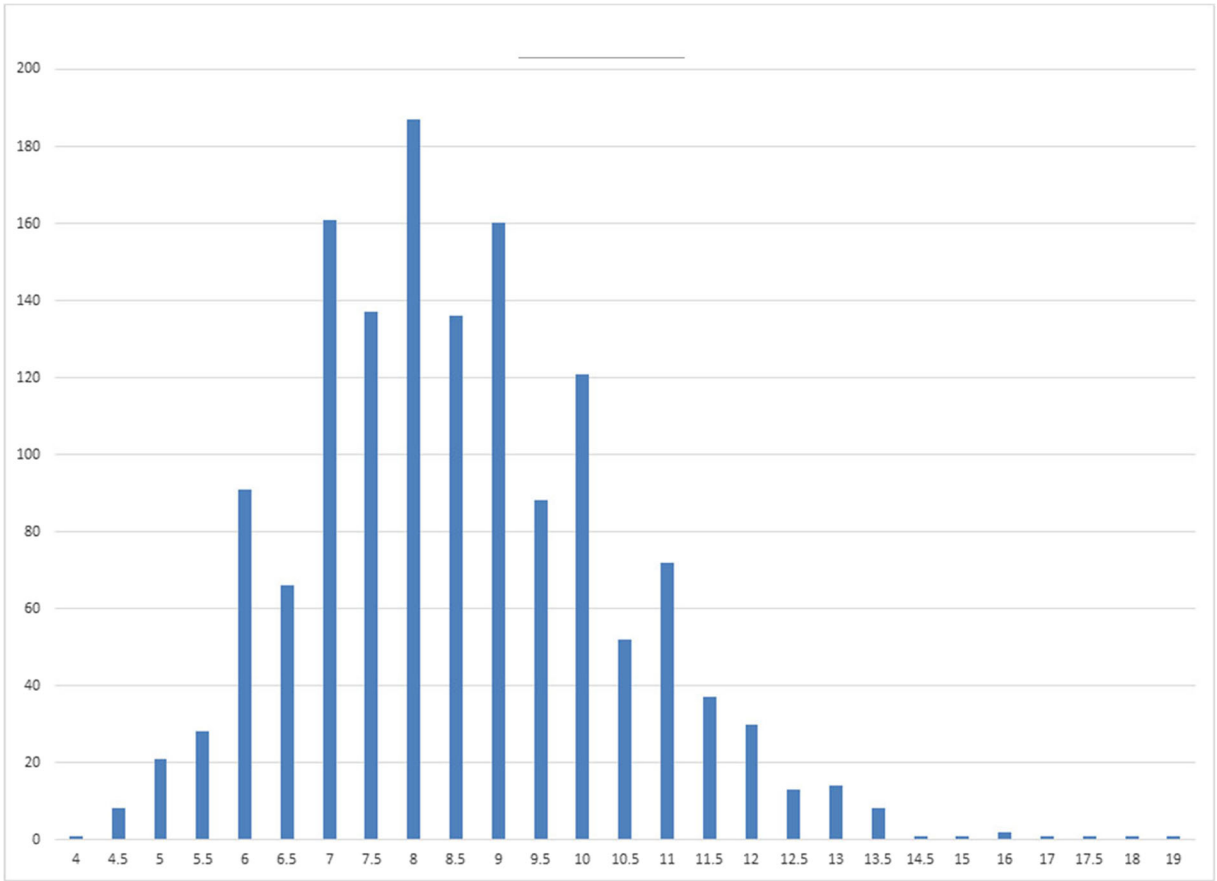

Fig. 9 Rim thicknesses of locally produced ceramics

diameters of particular types are of relatively little use, but some generalized comparisons of diameters across types are still compelling, as discussed below.

Typology

Despite the significant information gleaned from considering these metrics, the combination of traits in the pottery produced and used at Gede is of even greater significance than considering any single trait in isolation (Sinopoli 1984; Soper 1971). It is thus important to be able to define types that combine particular patterns of traits, and this was a primary objective of the reanalysis. In total, 34 different types were identified from the local ceramics recovered by Koplin's excavations. The description of these types is in Table 7, with certain notes elaborated below and prominent types depicted in Fig. 10. The prevalence of the types across the excavated units is presented in Table 8.

The first 13 types were bowls. The first six of these were open bowls, the most numerous types, four of which were found across the entire site and throughout the stratigraphies of Koplin's excavations. While many features of the open bowls were similar (e.g., thickness, burnishing percentages, a rarity of decoration, shared decorative motifs), certain trends beyond the rim forms that distinguish these types are also notable. The bowls with out-turned rims tended to come later in the sequence, while those with flat, beveled, and platform rims were all relatively earlier. The open bowls with flat rims also tended to be larger than the other open bowls, in terms of both thickness and rim diameter. Those with the platform and beveled rims were more likely to be decorated, with nearly half of the former showing incised motifs executed on the platform rim.

The next seven types were shallow bowls. These were much less numerous than the open bowls, and in several instances were represented by only a few sherds. They were clearly distinct from the open bowls, being

Table 7 Description of local ceramic types

Type	Vessel form	Rim form	Typical diam	Mean thick (mm)	Decorated	Burnished	Red paint	Typical decoration motif	Number	Ubiquity	Stratigraphic note
1	Open bowl	Rounded	Medium; above 15 cm	8.6	3%	17%	6%	Oblique incisions from rim	416	100%	Found throughout excavated layers
2	Open bowl	Tapered	Above 14 cm	6.2	3%	14%	3%	Oblique incisions from rim	66	100%	Throughout
3	Open bowl	Out-turned	Above 16 cm	8.4	7%	12%	7%	Oblique incisions from rim	42	100%	Typically not found in lower levels
4	Open bowl	Flat	Larger than other bowls	8.9	7%	22%	6%	Incisions on and from the rim	135	100%	Greater prevalence in lower layers
5	Open bowl	Beveled	Medium; above 15 cm	9.7	22%	33%	22%	Red-painted lines	9	50%	Found in mid to lower levels
6	Open bowl	Flat, platform	Around 16 cm	11.3	45%	18%	9%	Oblique and cross incisions on rim	11	50%	Found in mid to lower levels
7	Shallow bowl	Rounded	Below 15 cm	8.3	0%	10%	24%	None	20	75%	Found in upper and middle layers
8	Shallow bowl	Tapered	Below 15 cm	5.5	0%	33%	33%	None	3	38%	Found in upper and middle layers
9	Shallow bowl	Flat	Below 15 cm	8.7	27%	33%	6%	Incisions on and from the rim	33	88%	Throughout
10	Shallow bowl	Flat	Above 20 cm	9.8	67%	33%	67%	Incised band near rim	3	25%	Found in mid to lower levels
11	Shallow bowl	Beveled	13–16 cm	8.33	0%	33%	0%	None	3	25%	Found in upper and middle layers
12	Shallow bowl	Flat, platform	13–19 cm	11.7	40%	20%	20%	Oblique incisions on rim	5	50%	Lower levels
13	Platter	Flat, platform	Above 20 cm	11.8	20%	57%	11%	Oblique, cross, zigzag incised on rim	35	88%	Throughout
14	Carinated jar	Rounded	10–15 cm	6.8	73%	8%	0%	Punctates on carination, incisions btwn car. + rim	51	100%	Throughout
15	Carinated bowl	Rounded	Above 18 cm	9	50%	100%	0%	Ticks on carination	2	25%	Found in mid to lower levels
16	Carinated jar	Tapered	Below 15 cm	6.1	70%	22%	0%	Punctates on carination, incisions btwn car. + rim	27	75%	Throughout
17	Carinated jar	Flat	12–14 cm	7	50%	50%	0%	Oblique incisions above carination	4	25%	Found in upper and middle layers
18	Shouldered jar	Rounded	12–15 cm	8.5	44%	13%	0%	Ticks or crosshatching at shoulder; one inc. tri	16	75%	Mixed stratigraphic profile
19	Necked jar	Rounded	Variable, 10 to above 20 cm	8.5	6%	3%	0%	Oblique incisions from rim	34	100%	Throughout

Table 7 (continued)

Type	Vessel form	Rim form	Typical diam	Mean thick (mm)	Decorated	Burnished	Red paint	Typical decoration motif	Number	Ubiquity	Stratigraphic note
20	Necked jar	Flat	Larger than type 19	10	0%	50%	0%	None	2	13%	Middle of A
21	Straight-sided bowl/beaker	Rounded	15–18 cm	8.6	4%	22%	0%	Oblique incisions from rim	27	100%	Throughout
22	Straight-sided bowl	Flat	17–18 cm	8.8	0%	20%	0%	None	5	38%	Mixed stratigraphic profile
23	Globular	Rounded	Below 15 cm	8.4	4%	15%	4%	Finger scraping; incisions at rim	110	88%	Throughout
24	Globular	Rounded	Above 16 cm	11.2	0%	0%	0%	None	21	100%	Generally towards the middle layers
25	Globular	Tapered	10–16 cm	6.6	0%	8%	0%	None	13	75%	Mixed stratigraphic profile
26	Globular	Flat	Variable, 8 to above 20 cm	8.5	4%	18%	9%	Incisions on and from the rim	102	100%	Throughout
27	Globular	Beveled	Above 20 cm	10	20%	10%	20%	Comb band; deep incisions from rim	10	75%	Mixed stratigraphic profile
28	Globular	Flat, platform	Above 14 cm	10.2	33%	0%	0%	Crossing incisions on rim	6	50%	Found in mid to lower levels
29	Flared neck jar	Rounded	Below 15 cm	8.1	9%	10%	1%	Oblique incisions from rim	91	100%	Throughout
30	Flared neck jar	Tapered	11–15 cm	6.7	4%	23%	2%	Oblique incisions below taper	47	88%	Throughout
31	Flared neck jar	Flat	12–18 cm	7.9	13%	13%	25%	Incisions on and from the rim	8	50%	Found in upper and middle layers
32	Platter/large glob. jar	Rounded	17–18 cm	10.3	0%	50%	0%	None	2	25%	Upper layers
33	Platter/large glob. jar	Flat	Above 20 cm	10.2	2%	43%	33%	Oblique incisions on rim	61	100%	Throughout
34	Platter/large glob. jar	Flat, grooved	Above 20 cm	10.9	0%	35%	40%	None	20	75%	Throughout

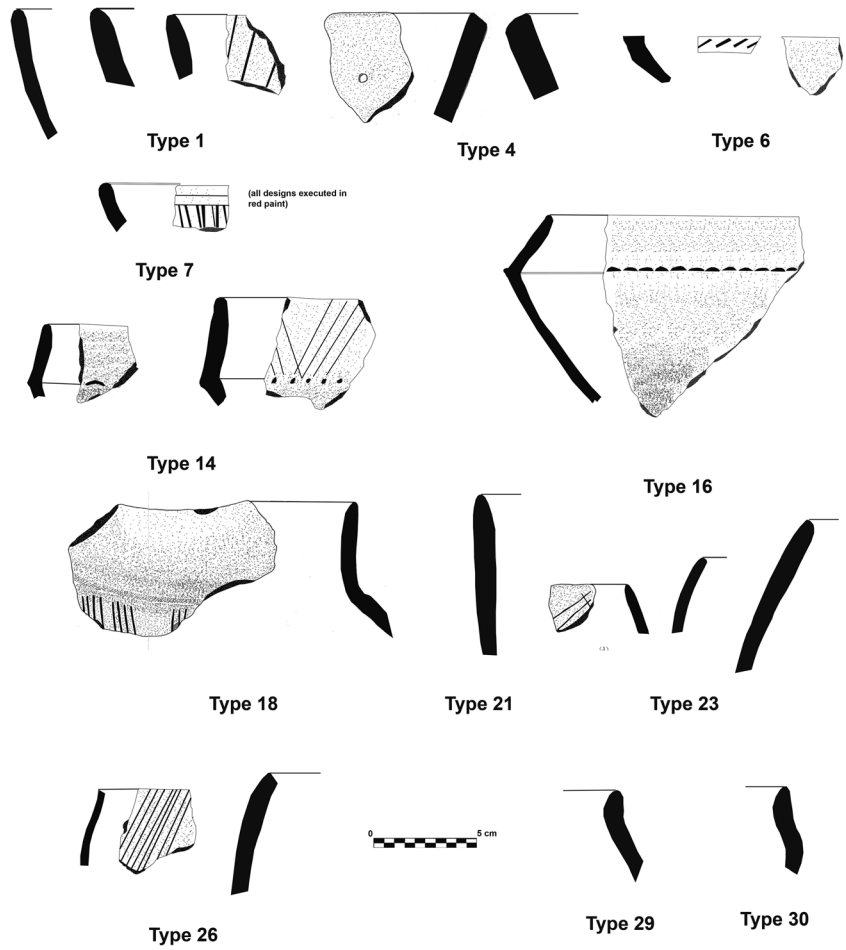

Fig. 10 Examples of common types of Gede's locally produced ceramics

both shallower and with smaller diameters, except for the large shallow platters of types 10 and 13. Most of the shallow bowls came from upper stratigraphic levels, except for those with flat rims or platform rims, which occurred throughout and earlier in the sequence respectively. Relatively large percentages of all the shallow bowls were burnished or red-painted and burnished. There was a clear distinction in decoration between the shallow bowls with flat rims and platform rims, which were frequently decorated, and those with rounded, tapered, and beveled rims, which were rarely decorated.

The next four types were carinated jars and bowls. These types were distinguished by their high proportion of decoration, 50% and above in all four cases. The decorations typically consisted of punctates on the carination and oblique incisions between the carination and the rim, and fingernail motifs were occasionally encountered. The more numerous carinated jars, with rounded or tapered rims, were found throughout the stratigraphic profile across most excavation units, while the large carinated bowls and carinated jars with flat rims had much smaller samples and might have been relatively early and relatively late respectively. These types did not show any evidence of red paint, but some were burnished at relatively high rates, especially the carinated bowls, though the carinated jars with rounded rims were burnished less frequently than the other.

The next three types were necked and shouldered jars. These types were less common than the bowls or globular jars, but the necked jars with rounded rims were found in all excavation units. These vessels tended to be relatively thick, and the low percentages of decoration and burnishing on the necked jars suggests utilitarian purposes. The vessels with a pronounced shoulder, however, were decorated almost half the time with ticks, crosses, or cross-hatching on the shoulder. None of these types had a clear stratigraphic profile. There were two types of vessels with straight sides—types 21

Table 8 Prevalence of local ceramic types in Koplin's excavations

Ceramic type	A	B	E	F	G	H	J	K	All units
1	87	49	58	49	27	46	65	36	417
2	19	12	7	8	7	3	4	6	66
3	12	4	6	8	2	3	4	2	41
4	33	15	18	14	16	16	19	4	135
5	0	0	1	5	1	0	2	0	9
6	0	0	2	0	5	3	1	0	11
7	8	4	0	1	0	2	1	4	20
8	0	0	0	1	1	1	0	0	3
9	10	4	4	0	6	3	4	2	33
10	2	0	0	0	0	0	0	1	3
11	0	0	2	0	0	1	0	0	3
12	1	0	1	0	0	1	2	0	5
13	2	4	7	5	7	4	6	0	35
14	3	8	11	8	8	5	4	4	51
15	0	2	0	0	0	0	1	0	3
16	0	7	5	3	6	3	3	0	27
17	0	0	1	3	0	0	0	0	4
18	0	1	4	1	6	1	0	3	16
19	17	7	1	1	3	2	1	2	34
20	2	0	0	0	0	0	0	0	2
21	1	5	6	2	1	2	3	7	27
22	0	2	2	0	0	1	0	0	5
23	0	4	18	26	22	20	19	1	110
24	1	1	3	6	3	3	2	2	21
25	0	1	1	2	1	3	5	0	13
26	33	13	24	6	6	12	6	2	102
27	2	2	0	2	1	1	0	2	10
28	0	0	3	0	1	1	0	1	6
29	10	18	15	9	9	11	16	3	91
30	1	5	2	11	4	9	15	0	47
31	0	2	3	0	0	1	0	2	8
32	1	1	0	0	0	0	0	0	2
33	16	13	2	5	2	7	11	5	61
34	8	5	2	3	1	1	0	0	20
Total	269	188	209	179	146	166	194	89	1440

and 22. It was difficult to tell whether the type 21 vessels were bowls or beakers, given the absence of complete or mostly complete forms, but type 22 vessels were certainly bowls. Both types were rarely decorated, though each was burnished around 20% of the time. The bowls had flat rims.

The next six types were globular hole-mouth jars. These were the second most prevalent set of types after the open bowls and were notable for their low decorated proportions, typically below 5%. However, the globular jars with beveled and platform rims were more frequently decorated and included new motifs like comb impressions. The decorations of globular hole-mouth jars also provided the only instances of finger scraping. All of these types were found in more than half of the units. The jars with platform rims did seem to come earlier in

the sequence, while the larger jars with rounded rims (type 24) were from the middle layers. The next three types were globular jars with up-turned rims, sometimes referred to as flared-neck jars depending on the degree of rim eversion. The jars with rounded and tapered rims were found throughout the stratigraphy, while those with flat rims, which were slightly larger, seem to come relatively later. A modest number of these types were decorated, usually with the same oblique incisions that were common on bowls and carinated vessels.

The final three types likely represent large convergent mouth jars, though some instances could represent platters. Both of these kinds of vessels are known to appear in Gede's assemblage (see Kirkman 1954, p. 78–89). The fragmentary nature of some of the rimsherds prevents easy attribution to one form or the other. The relatively high proportions with burnishing or red paint and burnishing—above 50% in all three cases—may suggest a function of holding and storing liquids, or serving the same. These vessels were large and thick, and usually not decorated. The kinds with flat rims were more prevalent and were found throughout the stratigraphies of most excavation units. The type with rounded rims was rare and found in the upper layers only.

Discussion

The typology just described enables us to extend our consideration of the ceramics of Gede's earth-and-thatch neighborhoods in important ways and provides quantitative data for intra- and inter-site comparison. While many of the broad trends gleaned from Koplin's summaries are confirmed, such as the low proportion of decoration, we are also able to see more clearly which sorts of vessels were decorated and which were not. In particular, the high proportions of decoration for the types with platform rims and, especially, the carinated vessels stand out against the trend towards low proportions of decoration in other forms. The decorations themselves are also worthy of note. The vast majority of the decorations, irrespective of type, employed incised motifs, especially oblique incisions on the rim. Other motifs were common on particular types such as crosshatching on shouldered vessels. There were also occasional instances of the fingernail and finger-scraped motifs among some of the globular vessels and on the carination of some sherds.

Concerning chronological trends, many of the common ceramic types of open bowls, carinated jars, and globular vessels were present throughout the archaeological sequence. However, the platform rims, flattened and thickened and often decorated (made on open bowls, globular vessels, shallow bowls, and platters) were early in the sequence, similar to the early occupation phases in Shanga to the north (Horton 1996). Other types that were more common earlier in the Gede sequence included the open bowls with beveled or flat rims, as well as the large carinated bowls. Most shallow bowls, on the other hand, were found late in the sequence, except for the large ones with flat rims. Carinated vessels, out-tuned bowls, and necked jars with flat rims also showed up later in the sequence. Large globular vessels seem to be represented the most in the middle of the sequence.

The ceramic typology that I developed from Koplin's excavations of earth-and-thatch neighborhoods aligns with the ceramic forms in the stone-built structures of the site, particularly those around the Great Mosque described by Kirkman (1954). Indeed, setting aside the lamps and miniature pots, 22 of the 28 ceramic types (79%) described by Kirkman from the Great Mosque were found in Koplin's excavations. Some of the forms not represented may nonetheless point to class or status differences, including jars with molded necks that mimicked imported ceramic and glass vessels, and those with applied wealed decorations. The earth-and-thatch neighborhoods also did not seem to have the "sandy buff ware" that Kirkman (1954, p. 78) identified in the stone-architecture area.

Regarding comparisons with contemporaneous sites, Gede shares trends with Mombasa in terms of decorative motifs and vessel forms, such as a preponderance of open bowls. However, not as many globular vessels were present at Mombasa (Sassoon 1980). This is likely indicative of the earlier date of the Mombasa ceramics, given that the globular forms seem to become most popular in the middle of Gede's occupation. Pujini, on Pemba Island, provides a closer temporal overlap and shows many shared trends in vessel forms (LaViolette and Pawlowicz in prep). Pujini is also notable for decorated carinated vessels, in even greater numbers than recovered at Gede, though open bowls were the most common types at each site. The decorative motifs showed substantial differences though, with many fewer incised motifs and a greater emphasis on applied, shell impressed, and fingernail motifs at Pujini.

The patterns of variation in the vessel forms found in the earth-and-thatch neighborhoods are indicative of chronological differences between excavation units. For instance, shallow bowls with tapered rims were found towards the middle of units E and H but at the top of unit G, providing additional evidence that unit G was occupied at an earlier date. The spatial distribution of the vessel forms also points to other axes of variation, potentially including wealth disparities and ceramic-choice preferences. There was considerable overlap in the local ceramic assemblages of units E and H. The highest proportions of imported goods were also found in these units (see Table 5). The platform rim types for open bowls, shallow bowls, and globular bowls, up-turned-rim pots with flat rims, and fewer open bowls with tapered rims were found in each of these units (though unit H had more tapered globular vessels than any other unit). Unit G also had a number of the platform rim types. The assemblages of units A and K also showed substantial overlap, especially in their lack of globular and carinated vessels with tapered rims, the presence of a few up-turned-rim jars or platform-rim platters, and high frequency of straight-sided bowls. These units also had the only occurrence of the big flat-rimmed shallow bowls of type 10. Unit A had more necked jars than any other unit. Other distinctions appear to be idiosyncratic. For example, unit B has more thick, rounded and tapered globular vessels than the thin rounded type. Without having a clear idea of functional differences between all of the different types, it is difficult to ascertain the reasons behind these intra-site variations in the distribution of local ceramics. However, there is not a clear distinction between the units on the basis of decorative motifs. Surely some of the variability was chronological but the occupation of some of the units covered multiple generations, as demonstrated by the stratigraphy and imported ceramics. Some of the differences may express taste, specific functions, or household composition, but it is also possible that certain forms, perhaps including the platform-rim types, were higher status items that certain households had greater access to than others.

Metals

Koplin's excavations recovered a relatively small number of metal, but the few recovered suggests certain kinds of specialized activities were undertaken by the people living in different parts of the site. Overall, the excavations yielded 100 metal artifacts and dozens of pieces of slag weighing 2.8 kg (Table 9). Slag counts were not identified uniformly across excavated units. Hence, I will restrict myself to a discussion of slag weights here.

The low weight and small size of the recovered slag suggest that smelting was not taking place within earth-and-thatch neighborhoods. If it was happening at Gede at all, it likely took place away from people's homes. However, the presence of both slag and iron tools is an indicator that smithing was taking place on site. As suggested by the survey, the amount of slag recovered during excavations was spatially variable, conforming with expectations that smithing was a specialist activity. Slag was found in very small quantities in units A, B, E, G, and K. The greatest concentrations were recovered in units J and D. The latter unit also produced a tuyere fragment. The stratigraphic evidence suggests that the greatest concentrations of slag from unit D came from levels beneath the midden. In contrast, slag came from the uppermost levels of unit J. All three of the units with larger quantities of slag (D, F, and J) also have relatively high concentrations of iron tools and objects.

The iron tools came in a wide variety. They included knives, projectile points, awls, nails, as well as chains, loops, and a buckle (Fig. 11). Such objects are similar to the kinds of iron implements recovered from the Palace and elsewhere at Gede (Kirkman 1963, p. 55). These objects were recovered from seven of the ten excavation units. In units D, F, and J, they were found mostly in association with slag. In most of the other units, however, iron tools were found without notable amounts of slag, for instance in units A, B, G, and C. This distinction suggests, again, that specialists were responsible for the production and repair of iron tools in the community.

The other metal found in significant quantity was copper ($n = 50$), recovered in six of the ten excavations. However, it concentrated in two units (B and G). All the 20 copper pieces from Unit B came from the same layer, and 19 of the 22 pieces in Unit G were also found in a single layer. The nature of the copper objects was not consistently recorded, though when recorded they were most frequently referred to as pieces of sheet copper. These were possibly fragments of copper dishes or vessels. While unit G had both a relatively high imported ceramic ratio and

Table 9 Metal artifacts recovered from Koplin's excavations

	A	B	C	D	E	F	G	H	J	K	All
Slag Weight (kg)	0.01	0.01	0.12	0.89	0.03	0.23	0.02	0.17	1.25	0.07	2.8
Metal Objects	2	22	15	11	5	13	24	0	8	0	100
Iron	2	1	9	2	0	12	2	0	7	0	35
Point						2					2
Knife/Blade			1			2					3
Awl			1								1
Rod		1	1						2		4
Wedge									1		1
Nail						2					2
Sheet									1		1
Chain			1			2					3
Buckle				1							1
Cap							1				1
Not noted	2		5	1		4	1		3		16
Copper	0	20	1	0	5	1	22	0	1	0	50
Sheet					5	1	2		1		9
Not Noted		20	1				20				41
Unidentified Metal	0	1	5	9	0	0	0	0	0	0	15
Point				4							4
Sheet				5							5
Not Noted		1	5								6

high preponderance of copper artifacts, unit B had a low imported ceramic ratio but high copper concentration (see Table 5). The latter should give us pause about relying on imported ceramics alone as an index of wealth. The household that generated the Unit B deposit might have instead concentrated on having greater access to imported glass and copper vessels rather than imported ceramics.

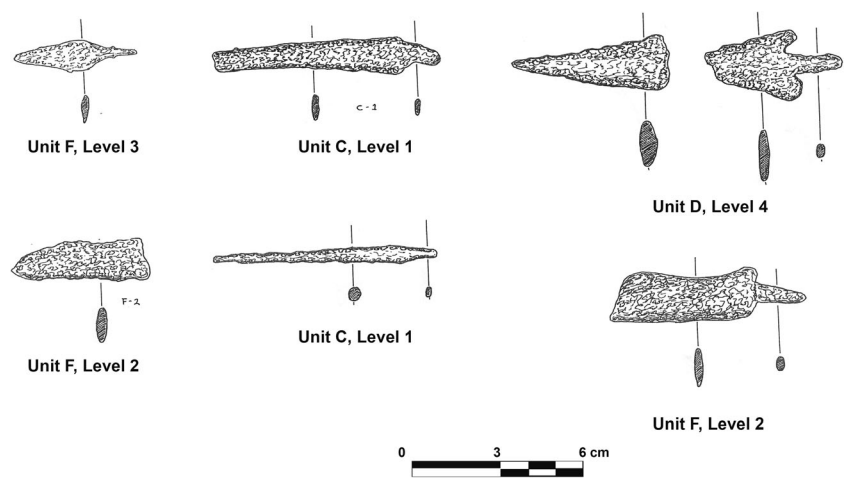

Fig. 11 Iron tools recovered from Koplin's excavations, illustration by Francis Munyao

Table 10 Stone artifacts recovered from Koplin's excavations

	A	B	C	D	E	F	G	H	J	K	All
All Lithics	11	16	15	10	8	8	3	5	42	0	118
Flake		4			4	5		3	7		23
Gemstone	2			1					1		4
Grindstone		2			1				1		4
Whetstone	1	1					1		1		4
Polished Stone						1					1
Cubed Stone									1		1
Grooved Coral		6	6	1		1			2		16
Quartz	4	1					2	1	4		12
Not noted	4	2	9	8	3	1		1	25		53

Stone Artifacts

The excavations in the earth-and-thatch neighborhoods yielded 118 stone artifacts (Table 10). These were found in all of the excavations except for unit K. The largest concentration was in unit J ($n = 42$), which had more than twice as many as the next largest assemblage. A variety of types of stone artifacts were recovered. Flakes were found in five of the units, but no specific lithic tools were recorded. The flakes were almost uniformly of quartz, with only one instance of another material ("igneous rock") recorded. Unflaked quartz stones were also found in several units. Grindstones and whetstones were recovered from three and four units, respectively. Five units yielded grooved coral, which Kirkman (1963, p. 55) suggested were used for making rope, but which have been interpreted as bead-grinders elsewhere (see Flexner et al. 2008). The latter is more credible because grooved corals were found in all three of the units with concentrations of shell beads. There was also rock crystal and other gemstones recovered from units A, D, and J.

Faunal Remains

A full analysis of the faunal remains recovered from the ten excavation units was conducted by John Kimengich of the NMK, enabling us to identify trends across the entire site and within Gede's earth-and-thatch neighborhoods (see Tables 11, 12, and 13). Gede's faunal assemblage showed that its majority population relied on both domesticated and wild animals for protein. Additionally, there are interesting distinctions between the earth-and-thatch neighborhoods that can be compared to the data from other material culture categories. Faunal remains of the primary domesticates of the Swahili coast—cow, sheep, goat, and chicken—were found in all ten excavation units. They were found throughout the stratigraphy of each unit, such that there is little indication that people's access to domesticated animals shifted substantially over time. Other domesticated species were also present at the site but were less common. Helmeted guineafowl bone was found in five units, but in relatively low numbers; Gede's inhabitants seem to have preferred to raise chickens. There were instances of both domesticated cats and dogs at the site, with the latter represented by molars in two units and a fibula in a third. Cats were found in three units, with elements of multiple individuals present in each. Three burned camel bones were also recovered from the uppermost layer of unit F. Whether the camel was eaten or used for some other purpose, the species was not a significant component of Gede's diet.

While the inhabitants of Gede's earth-and-thatch neighborhoods thus seem to have had reliable access to domesticated animals, it is also striking how important wild species were to the diet. Chief among those wild sources of protein was fish. Even though Gede is 4 km from the coast, fishbone was prevalent throughout the site, with eight of the ten units producing more than 100 identified bones. It is clear that fish made up an important component of the local diet (Tables 12 and 13), more than 75% of the total faunal assemblage and

Table 11 Fauna recovered from Koplin's excavations

	A		B		C		D		E		F		G		H		J		K		All Units	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
Domestic Animals	28	11	66	19	166	13	202	27	79	27	149	17	22	11	134	22	139	19	21	9	1006	175
Bos taurus	2	2	5	3	52	2	38	5	10	5	43	4	11	4	16	2	43	5	4	2	224	34
Caprinae	7	3	45	8	21	2	89	8	51	11	52	5	6	4	42	5	70	7	11	3	394	56
Ovis aries	4	1			1	1	17	3	9	4			2	2	5	2	1	1	6	2	45	16
Capra hircus							9	2	7	2	1	1	1	1	8	2	2	1	2	1	30	10
Camelus dromedarius											3	1									3	1
Canis familiaris			1	1	2	1													2	1	5	3
Felis catus					71	3	5	2							12	4					88	9
Gallus gallus	18	5	14	6	15	4	70	12	16	9	51	7	5	3	61	9	26	7	4	3	280	65
Numida meleagris	1	1	1	1	5	1			2	2					3	2					12	7
Rodents	2	1	0	0	19	8	7	4	2	1	7	4	0	0	16	2	12	4	0	0	65	24
Rattus rattus					10	4	2	2	2	1	7	4			1	1	8	3			30	15
Praomys natalensis					4	2											4	1			8	3
Lemniscomys striatus							1	1													1	1
Tatera nigricauda					5	2	4	1													9	3
Sciuridae															15	1					15	1
Muridae	2	1																			2	1
Wild Mammals	0	0	0	0	13	5	6	3	1	1	15	4	1	1	1	1	9	6	2	2	48	23
Sylvicapra grimmia							6	3			14	3	1	1	1	1	1	1	1	1	24	10
Redunca redunca																			1	1	1	1
Madoqua kirki																	6	3			6	3
Madoqua quenteri					5	1					1	1									6	2
Neotragus moschatus					6	2											2	2			8	4
Tragelaphus scriptus									1	1											1	1
Ourebia ourebi					1	1															1	1
Potamochoerus porcus					1	1															1	1
Wild Birds	0	0	1	1	4	3	2	2	0	0	0	0	0	0	2	1	0	0	0	0	9	7
Ploceus spekei															2	1					2	1
Scopus umbretta							1	1													1	1
Francolinus sephaena					2	1	1	1													3	2

Table 11 (continued)

	A		B		C		D		E		F		G		H		J		K		All Units	
	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI
Rallidae					1	1															1	1
Milvus migrans					1	1															1	1
Pternistis leucoscepus			1	1																	1	1
Wild Marine Mammals																					4	2
Dugong dugong					3	1					1	1									4	2
Reptiles	0	0	7	5	48	10	2	2	0	0	9	3	0	0	0	0	12	6	6	2	84	28
Varanus niloticus			1	1													4	3			5	4
Serpentidae																	2	1	3	1	5	2
Bitis arientans																			3	1	3	1
Chelonidae			3	2	22	3	1	1			9	3					3	1			38	10
Chelonia mydas			3	2	22	3											3	1			28	6
Eretmochelys imbricata							1	1													1	1
Testudinidae					2	2															2	2
Pelomedusa subrufa					1	1															1	1
Testudo pardalis					1	1															1	1
All Fish	139	25	995	125	2022	164	1191	129	403	74	923	80	38	21	460	62	3166	218	14	6	9351	904
Shellfish			29		41		36				22						11				139	
Total	169	37	1098	150	2316	204	1446	167	485	103	1126	109	61	33	613	88	3349	253	43	19	10706	1163

Table 12 Fish recovered from Koplin's excavations

		A		B		C		D		E		F		G		H		J		K		All units	
		NISP	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*	*NISP*	*MNI*
Fish family																							
Acanthuridae	Surgeonfish	5	2	110	10	97	5	108	8	30	7	37	3	6	3	20	5	90	10	1	1	504	54
Albulidae	Bonefish					45	2	6	2									6	4			57	8
Ariidae	Marine catfish					93	5	2	1	3	2					3	1					101	9
Balistidae	Trigger fish			45	6	3	1	8	2									13	6			69	15
Carangidae	Trevally, pampano	1	1	18	8	76	18	17	5	23	4	17	5	1	1	10	5	25	10			188	57
Carcharinidae	Shark			6	3	13	2	4	3	1	1	1	1					4	2			29	12
Claridae	Catfish					42	2	8	2													50	4
Coryphaenidae	Mahi-mahi			1	1																	1	1
Ephippidae	Batfish															1	1					1	1
Gerreidae	Pursemouth					1	1															1	1
Haemulidae	Grunts, lemonfish	19	4	81	12	273	20	158	15	27	9	97	13	3	3	32	6	696	34			1386	116
Labridae	Wrasse	5	2	119	12	124	6	19	6	1	1	111	6			9	3	223	15			611	51
Lethrinidae	Emperors	65	6	253	17	522	37	415	30	145	19	230	13	10	4	199	13	1009	44	2	1	2850	184
Lobotidae	Tripletail					5	2					1	1					4	2			10	5
Lutjanidae	Snapper			28	8	33	10	10	4	1	1	24	6	2	1	6	3	9	5	4	1	117	39
Megalopidae	Tarpon	1	1			1	1	1	1			12	2			3	3	8	3			26	11
Mugilidae	Mullet	6	1	1	1	41	3	49	5	18	7	52	5	1	1	11	4	31	7			210	34
Muraenidae	Moray eel							1	1													1	1
Platycephalidae	Flathead			2	1																	2	1
Pomacanthidae	Angelfish																	3	1			3	1
Scaridae	Parrotfish	5	2	60	13	161	8	143	16	15	8	72	7	2	2	13	3	232	17	1	1	704	77
Scombridae	Wahoo																	2	2			2	2
Serranidae	Sea bass, grouper	4	3	101	13	213	18	104	16	3	3	66	7	2	2	15	5	181	17	6	2	695	86
Siganidae	Rabbitfish	28	3	159	14	217	10	126	8	134	11	180	9	10	3	135	9	615	30			1604	97
Sparidae	Sea bream			1	1	2	1	2	2	2	1	8	1	1	1	3	1	7	3			26	11
Sphyaenidae	Barracuda			1	1	57	9	10	2			15	1					3	3			86	16
Tetraodontidae	Pufferfish			9	4	3	3											5	3			17	10
Total		139	25	995	125	2022	164	1191	129	403	74	923	80	38	21	460	62	3166	218	14	6	9351	904

Table 13 Prevalence of domesticated, wild, and marine fauna in Koplin's excavations

	A	B	C	D	E	F	G	H	J	K	All units
NISP											
% Domesticated	16.6%	6.0%	7.2%	14.0%	16.3%	13.2%	36.1%	21.9%	4.2%	48.8%	9.4%
% Wild	1.2%	0.7%	3.8%	1.2%	0.6%	2.8%	1.6%	3.1%	1.0%	18.6%	2.0%
% Marine	82.2%	93.5%	90.2%	84.9%	83.1%	84.8%	62.3%	75.0%	95.0%	32.6%	89.0%
MNI											
% Domesticated	29.7%	12.7%	6.4%	16.2%	26.2%	15.6%	33.3%	25.0%	7.5%	47.4%	15.0%
% Wild	2.7%	4.0%	13.2%	6.6%	1.9%	11.0%	3.0%	4.5%	6.3%	21.1%	7.2%
% Marine	67.6%	84.7%	82.4%	77.8%	71.8%	77.1%	63.6%	70.5%	86.6%	31.6%	78.8%

more than 60% of all units except for unit K. Indeed, the amount of fishbone recovered from Koplin's excavations is similar to that found at waterfront Swahili sites such as Shanga (Mudida 1996), Unguja Ukuu (Prendergast et al. 2017), and Chwaka and Kaliwa on Pemba Island (Fleisher 2003, p. 369–70). It also makes up a larger percentage of the faunal assemblage than was recorded at Manda (Chittick 1984), though recovery methods may have played a role in this difference. The kinds of fishbone recovered are also largely in line with trends found at other Swahili sites, with a predominance of reef and near-shore fish species, particularly those that would have provided good meat. Indeed, the fish families best represented at Gede, both in terms of raw numbers and ubiquity, are emperors, grunts, rabbitfish, groupers, and parrotfish. Other families of this sort, also found across the site but in lower numbers, include wrasse, surgeonfish, trevally, mullet, and sea bream. In contrast, open-ocean fish were quite rare. For instance, only two instances of wahoo were recorded across the entire site. While it makes sense that the fishers supplying Gede would have concentrated on the most readily available fish, this has implications for the kinds of maritime culture that might have existed at the site (Fleisher et al. 2015).

In addition to the prevalence of fish, Gede's population also exploited a variety of other marine animals. The remains of sea turtles came from five units: the same five that produced most of the fish fauna. These finds represented a range of species, from the green sea turtle (*Chelonia mydas*) to the water terrapin (*Pelomedusa subrufa*). Dugong bones were recovered in two units in low numbers, evidence for the suggested decline in the dugong population along the Kenyan coast by the fourteenth century (Mudida 1996, p. 386). Shellfish were also found in the excavations but, in contrast with the fishbone, the total number was small. Neither were they found across the entire site. The low number, and the prevalence of various marine snails (e.g., Conidae, Potamiddae) at the expense of the poorly represented clams (Trigoniidae), suggests that shellfish did not make up a significant component of local diets.

Gede's earth-and-thatch inhabitants also hunted and consumed a number of wild terrestrial species. The primary focus of hunting activity was small bovids. The most frequently identified wild mammal was the common duiker, with other small antelopes including suni, oribi, and two species of dikdik also recovered. Somewhat larger bovids, bushbuck and reedbuck, were also exploited, but only occasionally. Similarly, there was one instance of bushpig (*Potamochoerus porcus*). A variety of wild bird species were recovered, in low numbers and from only four units. Of these, the rail and the yellow-necked spurfowl (*Pternistis leucoscepus*) were most likely to have been eaten. The presence of domesticated dog suggests that some of these wild species might have been actively hunted, but the size of many of the wild animals recovered indicates that traps and snares may have been the primary hunting strategy'. The assemblage also included a number of animal species that were not likely eaten or otherwise utilized. Nonetheless, they can provide important information about the environment of earth-and-thatch neighborhoods. Included in this category are some of the wild birds, such as the Speke's weaver songbird and the black kite, a kind of raptor, as well as many terrestrial reptiles such as snakes and monitor lizards. It is possible that the monitor lizards could have been eaten in times of food stress (see Mudida 1996, p. 388), but the low numbers recorded here could as easily have resulted from disposing of nuisance animals. The most significant animals

from this category for understanding life at the site, however, are the rodents. Here, the presence of rat remains across six of the units, with unidentified rodent bones in a seventh, is an indication of urban, relatively dense settlement at Gede, and perhaps a degree of unsanitary conditions. Rats were present in units with both high and low import ratios.

Examining the recovered faunal material from across the site also enables us to draw contrasts between the different excavation units and the neighborhoods they represent, and to better understand how different animals came to be incorporated into the diet of Gede's people. Given the relatively small sample sizes in some cases we should maintain a degree of caution, but some preliminary conclusions can be suggested. First, wealthier families living in earth-and-thatch, as determined by the prevalence of imported goods in those locations (see Table 5), seem to have had a greater reliance on domesticated animals. This is evident when comparing unit E, where domesticates make up 26% of the identified individuals, with units B, D, and J, at 12.7, 16.2, and 7.5%, respectively. These also contrast strikingly with the relatively wealthy unit G, where domesticates make up a third of the faunal assemblage. Differential access to the domesticated animals for food may serve as another marker of wealth, as it did elsewhere on the Swahili coast (Fleisher 2010a; Chittick 1984; Christie 2013; Mudida 1996). The evidence shows that poorer residents were more likely to utilize shellfish and wild fauna such as duiker and the other small bovids. For example, only one wild animal was present compared to 27 domesticates in unit E, compared to 6 wild to 19 domesticated at unit J. At the same time, units A and K possessed low imported artifact ratios, but two of the highest proportions of domesticated animals were found in those units. While we might hypothesize that the people living in those neighborhoods of Gede raised or butchered livestock or chickens, one must exercise caution in linking wealth to domesticates.

Beyond dietary differences, we might also begin to identify forms of household specialization. For instance, unit F produced more than 31% of the wild mammal bones recovered during the project, much greater than the roughly 10% of the total faunal assemblage that it provided. Certainly, some of that difference might relate to wealth and social status as suggested above, but given that the unit was, by import ratio, not the poorest on site, this does not seem to be the entire story. Coupled with the relatively large number of iron tools found in the unit, including projectile points, we might expect this to have been the location of a specialist hunter or a group of hunters, though the presence of a midden at the location confuses matters substantially. Similarly, given the high volume of fishbone from unit J (more than 33% of the total fishbone recovered, including the only examples of pelagic species) and the very high proportion of fishbone found in unit B, it is likely that those units were associated with fishers or fishmongers, rather than just household(s) that had a strong preference for fish in their diet.

Discussion

Despite its limitations, Koplin's survey and excavations provide an important dataset for describing everyday life at Gede. The study is particularly useful for its attention to the majority, but understudied, segment of the town's population who lived in earth-and-thatch houses. The results of the survey in particular corroborate Pradines' (2010) revised chronology, showing that the early concentration of habitation was northeast of what later became the town's center. The project also confirms that Gede, though not a dominant political force, was nonetheless a well-to-do participant in the wider East African and Indian Ocean world, where all inhabitants would have been able to access some of the high-value imported goods flowing to the coast from farther afield.

Most significantly, the study contributes to our understanding of the diversity of Swahili experiences beyond the elite/non-elite dualism. The many different classes of material culture give us clear insight regarding the differences among the people who lived in earth-and-thatch neighborhoods at Gede (see Table 14). Some of those people were relatively wealthy, others less so. The wealthier households might be distinguished by the number and kind of imported goods they possessed and used, in particular those from China; the greater proportions of domesticated animals in their diet; and perhaps some classes of locally produced ceramics, such as platform-rim vessels. Indeed, those categories of material culture do appear to be correlated. The three units with the highest import ratios, E, G, and H, all had high proportions of domesticated animals and shared common patterns in local ceramics, especially high numbers of globular and platform rim types. They also each had large numbers of celadons, though G had much more black-on-yellow and no blue-and-white porcelain, while the other two did.

Table 14 Trends in material culture categories across Koplin's excavations

Unit	Feature	Imp. ratio	Most common import cer.	Glass beads	Shell beads	Local ceramics	Fauna	Slag (kg)	Metals	Glass	Stone
A	Plaster and daub fill	1.45	Celadon and monochromes	4	1	Sim. to K; more bowls, few platform	High domesticates	0.01	2 Fe	18 (mostly green)	11 (gem, whet., qrt)
B	Ash lenses, postholes	1.01	Green monochrome	5	16	More thick and tapered globular	High fish percentage	0.01	20 Cu, 1 Fe	53 (mostly green)	16 (flakes, gr. coral)
C	Burial	2.19	Blue-and-white porc.	14	102	N/A	High numbers of wild, fish	0.12	9 Fe (tools), 1 Cu	10 (mostly clear)	15 (gr. coral)
D	Multiple floors; midden	1.05	Monochromes	12	7	N/A	High fish, mix w + d	0.89	2 Fe, 9 UNID (tools)	7 (mostly clear)	10 (gem, gr. coral)
E	Daub pavement	4.61	Celadon	11	2	Sim. to H; More platform, globular	High domesticates	0.03	5 Cu (sheet)	58 (mostly clear)	8 (flakes, grindstone)
F	Burial; midden	1.06	Blue monochrome	9	53	More carinated vessels	Most wild mammals	0.23	12 Fe (tools), 1 Cu	40 (mostly green)	8 (flakes, polished)
G	Floor level, plaster con.	2.44	Black on yellow	17	2	Few shallow bowls, more globular forms	More domesticates	0.02	22 Cu, 2 Fe	23 (mostly green)	3 (whet., quartz)
H	Burials	2.31	Celadon	8	9	Sim. to E; many more globular, platform	More domesticates	0.17	None	58 (mostly green)	5 (flakes, quartz)
J	Floor level, plaster con.	1.12	Black on yellow; monochrome	26	254	More flared-neck vessels	Most fish, mix w + d	1.25	7 Fe (tools), 1 Cu (sheet)	60 (mostly green)	42 (all types)
K	Plaster concentra-tions	1.31	Green monochrome	3	0	Sim. to A; fewer globular vessels	High domesticates	0.07	None	6 (mostly green)	None

However, these latter differences may be related to chronology, rather than wealth.

At the same time, other classes of material culture, such as copper, glass, and some of the bead types, complicate the simplistic story of wealth indicated by imported ceramic ratios and suggest that other factors, including occupation, taste, and identity were also at work. The excavations of earth-and-thatch neighborhoods at Gede strongly suggest the existence of specialization in crafts and subsistence activities. Shell beads were concentrated in three units, J, C, and F, which may have been associated with workshops given the presence of grooved coral (Flexner et al. 2008). Units F and J also had the largest number of bone beads. The presence of large numbers of glass and bone beads in unit J further suggests it may have played a role in the distribution of all kinds of beads. Metalworking was restricted to only a few locations in the town, as evident in the slag from units D, J, and F. With unit F producing the highest number of wild fauna, J producing the most fishbone, and B yielding a similarly high proportion of fish, the faunal materials suggest that specialist hunters and fishers may have occupied certain households. The high proportions of domesticated animals, with relatively modest import ratios and different local ceramics, in units A and K suggest that these neighborhoods were likely more involved in raising and butchering livestock and chickens. It is certainly possible that such occupational specializations might have influenced other aspects of identity, such as the link to clan membership that has been suggested at Shanga and elsewhere (Horton 1994), though further work would be necessary to investigate such possibilities in Gede.

Interestingly, multiple specializations overlapped in the same neighborhoods. For instance, unit J produced the most beads and fishbone and was one of the locations with the highest concentrations of slag. It is unlikely that all of those specializations were contemporary, as the slag and metal come from the top layers while the shell beads were from the lower layers. The absence of good fieldnotes and radiocarbon dates make it difficult at this point to establish a clear and fine-scale chronological framework for the site. Still, we might imagine that certain specialties could have catalyzed others, such as a specialist fisher household also making shell beads, or a family of hunters being involved in the production of iron objects such as points. Other markers, such as the ceramic styles, seem to point to aspects of social difference that may have existed but that we do not understand well (see Wynne-Jones 2018).

These elements of social distinction among the so-called commoner population of Gede are significant, but it is also important to recognize the similarities among this population. All had access to imports, including the most popular kinds of imported ceramics on the Swahili coast. They all ate beef, chicken, sheep/goat, and, especially, fish. They shared broadly similar assemblages of locally produced ceramics, albeit with some potentially important distinctions, participating in coastal trends towards reduced decoration on open bowls and globular vessels. They were likely all Muslims, given the orientation of all the burials encountered at a right angle to the *qibla*. These were Swahili people. Still, the material evidence from their daily lives reminds us that the people we group as "commoners" were not a monolith, but had a diverse set of livelihoods and experiences.

This evidence of diversity from Gede's earth-and-thatch neighborhoods ought to act as encouragement for archaeologists of the East African Coast not to stop at questions of shared pan-coastal characteristics and Swahili identity, confident that "Swahili civilization has been and remains that of a single group of people" (Horton and Middleton 2000, p. 2). Such questions have focused on accounting for how Swahili culture exists as an identifiable category and describing the broad trends defining that culture, for instance, the changes in maritime practices, technology, and engagement with the sea over time (Fleisher et al. 2015). There is value in those approaches. However, the long history of East African archaeology often explicitly or implicitly restricts pan-coastal questions to the Swahili elite or assumes a more homogenized Swahili society than existed (Donley-Reid 1990; Kirkman 1964 for a critique see Kusimba and Walz 2018). Swahili archaeology thus benefits from being attuned to differences within sites, between sites, between regions, and, as in this case, to social differences that go beyond facile elite/non-elite dichotomies.

Fortunately, while the issue of Swahili diversity was understudied at the time Koplin carried out her fieldwork (but see Horton 1994 at Shanga, and attention to regional ceramic variation in Chami 1998), the last decade has witnessed many important contributions in this regard. First, building on the work by Abungu and Mutoro (Abungu 1989; Abungu and Mutoro 1993; Mutoro 1985), archaeologists in several regions have mapped the important economic and cultural connections between coastal sites and the interior, most notably

in southeast Kenya (Helm et al. 2012; Kusimba et al. 2005) and northeast Tanzania (Biginagwa 2012; Walz 2010, 2013). Important links have also been recorded in southern Tanzania and northern Mozambique (Pawlowicz 2013). Such connections were crucial components of the coastal peoples' lives and contributed to diversity between the Swahili regions. At the same time, improved survey methodologies have enabled archaeologists to capture a broader range of coastal Swahili settlements, including those without stone architecture and other markers of obvious wealth (e.g., Fleisher 2003; Helm 2000; Pawlowicz 2017; Walz 2010; Wynne-Jones 2005). These two trends have been brought together perhaps most effectively in the multiscalar spatial analysis of the various levels of interactions that structured life at Mtwapa (Kusimba et al. 2013).

The other major advance in the recognition and study of Swahili diversity has been the ability to identify areas of earthen architecture within coastal sites and to analyze the material culture of the households living in those locations, much as Koplin was able to do at Gede. These approaches have produced important results at Chwaka (LaViolette and Fleisher 2009; Walshaw 2010), Vumba Kuu (Wynne-Jones 2010, 2012), and Songo Mnara (Fleisher 2014; Sulas et al. 2017), providing insights into the organization of production, economic specialization, dietary patterns, and the social and religious lives of people living in earth-and-thatch buildings.

In these respects, Lynn Koplin's work is no longer the outlier when it was first undertaken, as others have also drawn attention to axes of variation among the Swahili and moved beyond the elite/non-elite dichotomy to capture the diversity that characterized their everyday lives. However, Koplin's study, with its wealth of artifacts across several classes of material culture and different areas of the site, remains an outstanding example of the type of research design needed to draw attention to certain aspects of social diversity that we still do not understand well for most Swahili sites (see Wynne-Jones 2018). When juxtaposed with the well-known research into Gede's elite (e.g., Kirkman 1963; Pradines 2010), the multidimensional data from Koplin's work brings out the richness and fullness of life in a Swahili town. The archaeology of Gede revealed a broad range of inhabitants who shared the same culture but had different occupations, belonged to different classes, and distinguished themselves from one another in many respects (potentially including clan or ethnicity). The foregoing underscores the need for a critical focus on both the differences and similarities that defined the everyday lives of Swahili communities.

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References

Abungu, G. H. O. (1989). Communities on the River Tana, Kenya: An archaeological study of relations between the Delta and the River Basin, 700–1890 AD. PhD dissertation, University of Cambridge, UK.

Abungu, G. H. O. & Mutoro, H. (1993). Coast-interior settlements and social relations in the Kenya coastal Hinterland. In T. Shaw, P. Sinclair, B. Andah, & A. Okpoko (Eds.), *The archaeology of Africa: Foods, metals and towns* (pp. 694–704). New York: Routledge.

Alders, W. (2016). Archaeological survey and landscape history at Gede, Kenya. *Nyame Akuma, 85*, 33–43.

Allen, J. de V. (1979). The Swahili house: Cultural and ritual concepts underlying its plan and structure. In J. de V. Allen & T. H. Wilson (Eds.), *Swahili houses and tombs of the coast of Kenya* (pp. 1–32). London: Art and Archaeology Research Papers.

Allen, J. de V. (1982). The 'Shirazi' problem in East African coastal history. *Paideuma, 28*, 9–28.

Baumanova, M., & Smejda, L. (2017). Structural dynamics of spatial complexity at the 'Palace of Gede', Kenya. *Azania, 52*(1), 71–99.

Biginagwa, T. J. (2012). Historical archaeology of the 19th-century caravan trade in north-eastern Tanzania: A zooarchaeological perspective. PhD dissertation, York University, Canada.

Chami, F. A. (1994). *The Tanzanian Coast in the first millennium AD: An archaeology of the iron-working, farming communities.* Uppsala: Societas Archaeologica Upsaliensis.

Chami, F. A. (1998). A review of Swahili archaeology. *African Archaeological Review, 15*(3), 199–218.

Chittick, H. N. (1974). *Kilwa: An islamic trading city on the East African coast.* Nairobi: British Institute in East Africa.

Chittick, H. N. (1984). *Manda: Excavations at an island port on the Kenya coast.* Nairobi: British Institute in East Africa.

Christie, A. (2013). An overview of work conducted in the Mafia Archipelago 2008 – 2010. *Nyama Akuma, 79*, 30–44.

Donley-Reid, L. W. (1990). A structuring structure: The Swahili house. In S. Kent (Ed.), *Domestic architecture and the use of space: An interdisciplinary cross-cultural study* (pp. 114–126). Cambridge: Cambridge University Press.

Fleisher, J. B. (2003). *Viewing stonetowns from the countryside: An archaeological approach to Swahili regional systems, AD 800–1500. PhD dissertation*. University of Virginia.

Fleisher, J. B. (2010a). Rituals of consumption and the politics of feasting on the eastern African coast, AD 700–1500. *Journal of World Prehistory, 23*(4), 195–217.

Fleisher, J. B. (2010b). Housing the market: Swahili merchants and regional marketing on the east African coast. In C. Garraty & B. Stark (Eds.), *Archaeological approaches to market exchange in ancient societies* (pp. 141–159). Boulder: University Press of Colorado.

Fleisher, J. B. (2014). The complexity of public space at the Swahili town of Songo Mnara, Tanzania. *Journal of Anthropological Archaeology, 35*, 1–22.

Fleisher, J. B., Lane, P., LaViolette, A., Horton, M., Pollard, E., Morales, E. Q., Vernet, T., Christie, A., & Wynne-Jones, S. (2015). When did the Swahili become maritime? *American Anthropologist, 117*(1), 100–115.

Fleisher, J. B., & LaViolette, A. (1999). Elusive wattle-and-daub: Finding the hidden majority in the archaeology of the Swahili. *Azania, 34*(1), 87–108.

Fleisher, J. B., & Wynne-Jones, S. (2011). Ceramics and the early Swahili: Deconstructing the Early Tana Tradition. *African Archaeological Review, 28*(4), 245–278.

Flexner, J., Fleisher, J. B., & LaViolette, A. (2008). Bead grinders and Early Swahili household economy: Analysis of an assemblage from Tumbe, Pemba Island, Tanzania, 7^{th}-10^{th} centuries AD. *Journal of African Archaeology, 6*(2), 161–182.

Helm, R. (2000). Recent archaeological research on the iron-working, farming communities of coastal Kenya. *Azania, 35*(1), 183–189.

Helm, R., Crowther, A., Shipton, C., Tengeza, A., Fuller, D., & Boivin, N. (2012). Exploring agriculture, interaction and trade on the eastern African littoral: Preliminary results from Kenya. *Azania, 47*(1), 39–63.

Horton, M.C. (1981). *Shanga 1980: An interim report.* Nairobi: National Museums of Kenya.

Horton, M. C. (1994). Swahili architecture, space and social structure. In M. Pearson & C. Richards (Eds.), *Architecture and order: Approaches to social space* (pp. 147–169). London: Routledge.

Horton, M. C. (Ed.). (1996). *Shanga: The archaeology of a Muslim trading community on the coast of East Africa*. London: British Institute in East Africa.

Horton, M.C. (forthcoming). *Zanzibar and Pemba: The archaeology of an Indian Ocean Archipelago.* London: British Institute in East Africa.

Horton, M. C., & Middleton, J. (2000). *The Swahili: The social landscape of a mercantile society.* Oxford: Blackwell.

Kirkman, J. S. (1954). *The Arab city of Gedi: Excavations at the great mosque, architecture, and finds*. Oxford: Oxford University Press.

Kirkman, J. S. (1960). *The tomb of the dated inscription at Gedi.* London: Royal Anthropological Institute of Great Britain and Ireland. *Occasional Paper, 14*.

Kirkman, J. S. (1963). *Gedi: The palace*. The Hague: Mouton and Co.

Kirkman, J. S. (1964). *Men and monuments of the east African coast*. London: Lutterworth Press.

Kirkman, J. S. (1975). *Gedi historical monument, Eighth Edition.* Mombasa: Rodwell Press.

Kusimba, C. M. (1999). *The rise and fall of Swahili states*. Walnut Creek: AltaMira.

Kusimba, C. M., Kusimba, S. B., & Dussubieux, L. (2013). Beyond the coastalscapes: Preindustrial social and political networks in East Africa. *African Archaeological Review, 30*(4), 399–426.

Kusimba, C. M., Kusimba, S. B., & Wright, D. (2005). The development and collapse of precolonial ethnic mosaics in Tsavo, Kenya. *Journal of African Archaeology, 3*(2), 243–265.

Kusimba, C. M., & Walz, J. (2018). When did the Swahili become maritime?: A reply to Fleisher et al. (2015) and to the resurgence of maritime myopia in the archaeology of the East African coast. *American Anthropologist, 120*(3), 429–443.

LaViolette, A. (2008). Swahili cosmopolitanism in Africa and the Indian Ocean World, A.D. 600-1500. In C. Cobb & D. Loren (Eds.), The archaeology of colonialism and contested modernities. *Archaeologies: Journal of the World Archaeological Congress, 4*(1), 24–49.

LaViolette, A., Fawcett, W., & Karoma, N. J. (1999). Survey and excavations between Dar es Salaam and Bagamoyo. *Nyame Akuma, 52*, 74–78.

LaViolette, A., & Fleisher, J. B. (2009). The urban history of a rural place: Swahili archaeology on Pemba Island, Tanzania, 700-1500 AD. *International Journal of African Historical Studies, 42*(3), 433–455.

Mudida, N. (1996). Subsistence at Shanga: The faunal record. In M. C. Horton (Ed.), *Shanga: The archaeology of a Muslim trading community on the coast of East Africa* (pp. 378–393). London: British Institute in East Africa.

Mutoro, H. W. (1985). The spatial distribution of Mijikenda Kaya settlements on the hinterland of the Kenya coast. *Transafrican Journal of History, 14*, 78–99.

Pawlowicz, M. (2012). Models of the Swahili past: The archaeology of Mikindani, southern coastal Tanzania. *Azania, 47*(4), 486–506.

Pawlowicz, M. (2013). Review of ceramics from Southern Tanzania and Northern Mozambique: Implications for Swahili society. *African Archaeological Review, 30*(4), 367–398.

Pawlowicz, M. (2017). *Archaeological survey and excavations at Mikindani, southern Tanzania: Finding their place in the Swahili world*. Oxford: Archaeopress.

Pawlowicz, M. (2018). Gede. In S. Wynne-Jones & A. LaViolette (Eds.), *The Swahili world* (pp. 220–225). London: Routledge.

Phillipson, D. W. (1976). *The prehistory of Eastern Zambia*. Nairobi: British Institute in East Africa.

Pradines, S. (2000). Nouvelles recherches archéologiques sur le site de Gedi (Kenya, Mission de Juillet-Août 1999). *Nyame Akuma, 53*, 22–28.

Pradines, S. (2003). Islamization and urbanization on the coast of East Africa: Recent excavations at Gedi, Kenya. *Azania, 38*(1), 180–182.

Pradines, S. (2006). Sanjé ya Kati, Kilwa, Tanzanie, 2005 – 2006. *Nyame Akuma, 66*, 64–70.

Pradines, S. (2010). *Gedi, une cite portuaire swahilie: Islam medieval en Afrique orientale*. Cairo: Institut français d'archéologie orientale du Caire.

Prendergast, M. E., Quintana Morales, E. M., Crowther, A., Horton, M. C., & Boivin, N. L. (2017). Dietary diversity on the Swahili coast: The fauna from two Zanzibar trading locales. *International Journal of Osteoarchaeology, 27*(4), 621–637.

Qin, D., & Ding, Y. (2018). Mambrui and Malindi. In S. Wynne-Jones & A. LaViolette (Eds.), *The Swahili world* (pp. 205–213). London: Routledge.

Ray, D. (2018). Defining the Swahili. In S. Wynne-Jones & A. LaViolette (Eds.), *The Swahili world* (pp. 67–80). London: Routledge.

Rüther, H. (2002). An African heritage database, the virtual preservation of Africa's past. *International Archives of Photogrammetry, Remote Sensing and Spatial Information, 34*, 185–192.

Sassoon, H. (1980). Excavations at the site of early Mombasa. *Azania, 15*(1), 1–42.

Shipton, C., Helm, R., Boivin, N., Crowther, A., Austin, P., & Fuller, D. (2013). Intersections, networks and the genesis of social complexity on the East African coast. *African Archaeological Review, 30*(4), 427–453.

Sinclair, P. J. J., & Håkansson, T. (2000). The Swahili city-state culture. In M. Hansen (Ed.), *A comparative study of thirty city-state cultures* (pp. 463–482). Copenhagen: Royal Danish Academy of Sciences and Letters.

Sinopoli, C. (1984). Local ceramics. In H. Wright (Ed.), Early seafarers of the Comoro Islands: The Dembeni phase of the IXth–Xth centuries AD. *Azania*, 19, 13–59.

Sombroeck, W. C., Braun, H. M., & Van-der Pour, B. J. A. (1982). *Explanatory soil map and agro-climatic zone map of Kenya*. Nairobi: National Agriculture Laboratories, Soil Survey Unit, Report, E1.

Soper, R. C. (1971). Early Iron Age pottery types from East Africa: Comparative analysis. *Azania, 6*, 39–52.

Sulas, F., Fleisher, J. B., & Wynne-Jones, S. (2017). Geoarchaeology of urban space in tropical island environments: Songo Mnara, Tanzania. *Journal of Archaeological Science, 77*, 52–63.

Walz, J. (2010). *Route to a regional past: An archaeology of the lower Pangani (Ruvu) basin, Tanzania* (500–1900 CE). PhD Dissertation, University of Florida, Gainesville.

Walz, J. (2013). Routes to history. In P. R. Schmidt & S. Mrozowski (Eds.), *The death of prehistory* (pp. 69–91). Oxford: Oxford University Press.

Wilson, T. H. (1982). Spatial analysis and settlement patterns on the east African coast. *Padieuma, 28*, 201–220.

Wilson, T. H., & Lali Omar, A. (1997). Archaeological investigations at Pate. *Azania, 32*, 31–76.

Wright, H. T. (1993). Trade and politics on the eastern littoral of Africa, AD 800-1300. In T. Shaw, P. Sinclair, B. Andah, & A. Okpoko (Eds.), *The archaeology of Africa: Food, metals, and towns* (pp. 657–671). London: Routledge.

Wynne-Jones, S. (2005). Urbanisation at Kilwa, Tanzania, AD 800–1400. PhD dissertation, University of Cambridge, UK.

Wynne-Jones, S. (2007). Creating urban communities at Kilwa Kisiwani, Tanzania, AD 800- 1300. *Antiquity, 81*, 368–380.

Wynne-Jones, S. (2010). Remembering and reworking the Swahili Diwanate: The role of objects and places at Vumba Kuu. *The International Journal of African Historical Studies, 43*(3), 407–427.

Wynne-Jones, S. (2012). Exploring the use of geophysical survey on the Swahili coast: Vumba Kuu, Kenya. *Azania, 47*(2), 137–152.

Wynne-Jones, S. (2013). The public life of the Swahili stonehouse. *Journal of Anthropological Archaeology, 32*, 759–773.

Wynne-Jones, S. (2016). *A material culture: Consumption and materiality on the coast of precolonial East Africa*. Oxford: Oxford University Press.

Wynne-Jones, S. (2018). The social composition of Swahili society. In S. Wynne-Jones & A. LaViolette (Eds.), *The Swahili world* (pp. 293–305). London: Routledge.

Wynne-Jones, S., & Fleisher, J. B. (2010). Archaeological investigations at Songo Mnara, Tanzania. *2009. Nyame Akuma, 73*, 2–9.

Wynne-Jones, S., & Fleisher, J. B. (2016). The multiple territories of Swahili urban landscapes. *World Archaeology, 48*(3), 349–362.

Zamani Project. (2017). GIS Layouts- Gede. *The Zamani Project.* http://www.zamaniproject.org/index.php/gislayouts.html (accessed 26 June 2017).

Zhao, B., & Qin, D. (2018). Links with China. In S. Wynne-Jones & A. LaViolette (Eds.), *The Swahili world* (pp. 430–443). London: Routledge.