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To cite this article: A. Haour, I. Coulson, D. N'Dah & N. Labiyi (2022): A coastal occupation in Bénin, West Africa: Earthenwares and salt at the time of Atlantic entanglement, The Journal of Island and Coastal Archaeology, DOI: [10.1080/15564894.2022.2084654](https://doi.org/10.1080/15564894.2022.2084654)

To link to this article: <https://doi.org/10.1080/15564894.2022.2084654>



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A coastal occupation in Bénin, West Africa: Earthenwares and salt at the time of Atlantic entanglement

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ABSTRACT

The archaeology of the immediate coastline of West Africa remains surprisingly little understood, and what research has been undertaken has often focused on questions relating to sea-based interactions and the precolonial polities lying slightly inland. This paper reports the results of excavations on Ohlinhoué, a small lagoonal island in the western Republic of Bénin. A locally manufactured ceramic assemblage was recovered, together with a small suite of artifacts, including glass, metal, shell, and smoking pipes. These archaeological data provide insights into a small-scale, likely fishing and salt-producing community in this area between sea and river. As such, they provide an alternative to historical readings relating to well-known precolonial polities and trade entrepôts that feed popular historical narratives.

ARTICLE HISTORY



Received 10 February 2022;
Accepted 28 May 2022

KEYWORDS

Bénin Republic; coastal archaeology; local pottery

Introduction

Archaeologists and historians have offered major insights into the entanglement of European and local traders and political actors along the 300 km of coastline between the River Volta and Lagos lagoon in the past 500 years (De Corse 2001; Fuglestad 2018; Kelly 1995, 1997, 2001, 2002; Law 1989, 1991; Merkyte and Randsborg 2009; Monroe 2007, 2014, n.d.; Monroe and Ogundiran 2012; Norman 2009a, 2009b, 2011; Randsborg et al. 2009; Strickrodt 2015). These works focus on the impacts and transformations affecting African societies and on the powerful political entities that were centered not on the coastline, but rather a few dozen kilometers inland, and which dominate the historiography of the wider region between the seventeenth and the nineteenth centuries. The broad lines of the story are the development of the kingdom of Dahomey on the Abomey Plateau, the consolidation of its regional power in the eighteenth century as it took over key cities on the Atlantic coast, among which

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 Supplemental data for this article is available online at <https://doi.org/10.1080/15564894.2022.2084654>.

This manuscript has not been published elsewhere and has not been submitted simultaneously for publication elsewhere.

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Ouidah, and its eventual status as a tributary to the Yoruba Oyo Empire, inheritor of the medieval center of Ile-Ife.

This paper takes a different starting point, building on a range of archaeological studies of locally rooted occupations on the coastline itself (Alabi 2000, 2002, 2021; Allsworth-Jones and Wesler 1998; Chenorkian 1983; Huysecom et al. 2014, 2016; N'Dah et al. 2016; Orijemie 2014; Oseni, Aleru, and Alabi 2015; Paradis 1977; Polet 1995). The archaeological evidence from these areas between land, sea, and lagoon offers a deeper time perspective, often over two or three millennia, and provides a valuable alternative to the historical sources (which, for this part of the world, date back to the early sixteenth century).

The research presented here outlines the results of archaeological work carried out in June 2018 in an archaeologically under-explored region of western Bénin. The small insular settlement that it evidences is especially interesting because it dates to the period of contact between local and European communities and lies close to the well-documented trade entrepôt of Ouidah. In line with calls to consider everyday material culture and identities during the West African Atlantic Period (Gijanto and Ogundiran 2011), and guided by the assemblage recovered, we focus here primarily on the locally made ceramics that far outnumbered any other finds.

In considering the natural and cultural background, it is important to note that historical knowledge of the West African coast is colored by outside perspectives; accounts by European writers over the past five centuries present it as difficult and dangerous (Fuglestad 2018; Law 1989). The experience of this landscape by those who inhabited it is less clear and, although the nature of the Atlantic coastline in this part of the world poses indubitable challenges to navigation, the coastal lagoon systems that form an interconnecting waterway behind, and parallel to, some 600 km of the coastline (Supplementary material, Figure S1) offered considerable productive and transport potential. We are, again, largely reliant on external accounts but late eighteenth- and nineteenth-century sources suggest these lagoons formed a continuous communication network stretching from the Volta to Lagos and beyond to Benin City, at least seasonally, while European accounts ranging in date from AD 1530 to 1683 indicate an exchange in valuables such as beads (Biveridge 2020; Law 1989). Ethnographic and historical sources (e.g., Juhé-Beaulaton 1995; Law 1989) also suggest that the lagoon environment was one of commodity production, most especially salt and fish, as well as shellfish extraction. However, these riverine and lagoonal elements have tended to be under-emphasized in relation to sea-facing activities linked to the Atlantic trade. The historical picture for this coastline in fact points to a complex interaction of maritime and lagoon-borne enterprises, and a balanced assessment requires taking into account these various activities.

It is obvious, not just from the archaeological data that will be discussed further below, but also from historical sources, that the Atlantic coastline was inhabited at the time the Portuguese first encountered it in the late fifteenth century. One coastal settlement appears to correspond to present-day Grand Popo, close to our study site of Ohlinhoué (Law 1989, 217). The earliest historically documented inhabitants of this region, mentioned in seventeenth-century sources, were seemingly the Houla, also known as Xwla or Pla, who apparently occupied the whole coastal region westwards into present-day Nigeria; they are also identified as salt-makers trading the commodity inland from Grand Popo (Law 1989; Strickrodt 2015, 1, 54–6). Law (1989) has argued that while Houla settlement along the coast may have predated the arrival of the Portuguese, this arrival had a transformative impact,

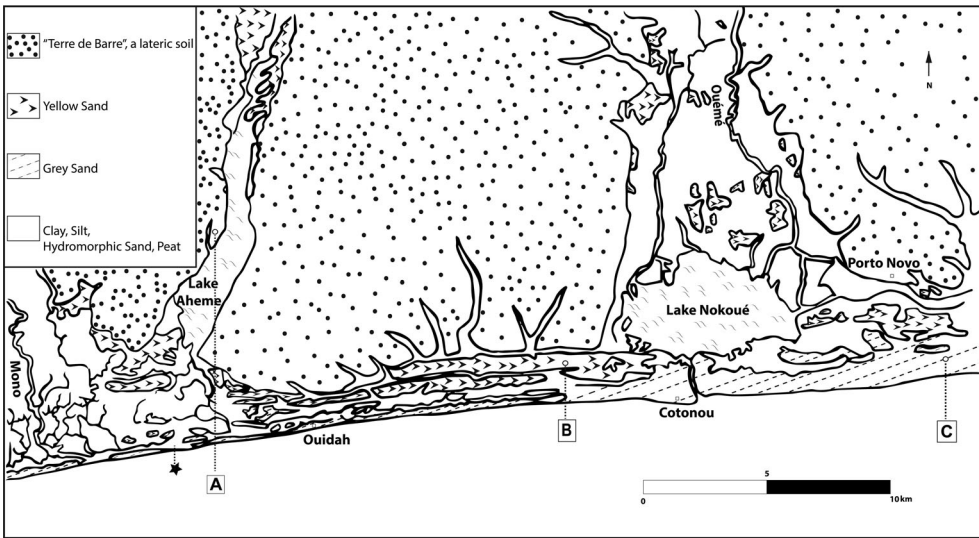


Figure 1. Map of the study region. Redrawn by Giulia Nazzaro from Paradis (1977, Fig. 1). The star indicates the location of Ohlinhoué.

resulting in the sea taking on a central role in the Houla way of life and sense of cultural identity. Moreover, Mina immigrants seem to have moved into the region from modern-day Ghana because of the expansion of the Akwamu kingdom during the second half of the seventeenth century (Law 1989). These communities, who typically exploited marine resources, are thought to have brought with them technology associated with larger canoes. Today, the coastal region of western Bénin is the subject of a complex patchwork of specialized occupations. The coast itself is populated by ocean-going fishing communities, while the navigable lagoons barely 200 m inland are exploited by other communities, possibly descendants of the Houla, who use smaller canoes and effectively farm fish by creating dense “fields” of cut palm fronds in which fish breed. Despite their close proximity, these communities have “two different experiences of water and methods of fishing” (Mack 2015, 2).

To these ethnographic and historical data relating to the coastline of Bénin, we can add some archaeological data, most recently summarized by N’Dah et al. (2016, 30–1). The identification of past settlement sites and slag scatters, and reports of lithic and pottery finds, began in the 1940s. However, the most thorough research was a study by Paradis (1977), then a professor of biology at the National University of Bénin. He sank a number of test pits aiming to shed light on Quaternary sequences, sampling and dating a range of beaches, estuaries, and lagoons. Certain locales yielded artifactual material, and some were dated. These include pottery sherds underlying manioc fields, possibly deposited by floodwaters, dated to 830 ± 90 BP (Gif-3973) (Figure 1C); mounds of shell and sand underlying settlements, apparently built up by local communities to mitigate flooding and seemingly recent (174 ± 115 BP, Dak-196) (Figure 1A); and finally a quarry site at Cocotomey (Figure 1B), with a 4 m deep sequence featuring pottery and lithics and a date of 2674 ± 120 BP (Dak-199) on charcoal at 1 m depth (Paradis 1977, 58, 60, 64, 66). Although these investigations were small in scale and were primarily concerned with clarifying the geomorphology of the coastal area rather than its archaeological

profile, they demonstrated the long-term occupation of this region, most evident at Cocotomey (now destroyed by the expansion of the modern city of Cotonou).

Looking at the wider Atlantic coastline, archaeological investigations aimed specifically at shedding light on lagoonal societies have also been undertaken in parts of Ivory Coast (Chenorkian 1983; Huysecom et al. 2014, 2016; Polet 1995) and Nigeria (Alabi 2000, 2002; Allsworth-Jones and Wesler 1998; Orijemie 2014; Oseni, Aleru, and Alabi 2015) (Figure 2). These investigations, detailed below, have suggested the existence both of an early settlement phase (termed “Late Stone Age” by some authors), often consisting of shell middens and placed at around 2500–2000 BP, and of later remains dating to the period at which Atlantic trade networks were active.

Materials and methods

The site of Ohlinhoué

The site of Ohlixwɛ (Ohlinhoué) was discovered during surveys in May 2018 by two of the authors (DN'D and NL) as part of a wider survey of the shoreline and lagoonal islands aimed at assessing the archaeological potential of this area. Archaeological remains were observed at several locations, including the two islands of Kouèta and Ohlinhoué. It was decided to focus on the latter site, presently located close to the point where the River Mono meets the Atlantic, one of the few natural outlets between lagoon and sea. The island is colloquially known as the “île à sel” (island of salt); during fieldwork in the mid-1970s it was reported (under the name “Hlihoué”) as an active salt-producing locale (Rivallain 1977, Fig. 1). Today, a large square pit at the northwest end of the island (visible on Figure 3, close to our Trench 1) remains associated with salt production. Erosion by strong fluvial currents had exposed archaeological remains on Ohlinhoué, particularly notable on the south and west sides of the island (Supplementary material, Figure S2). Present-day coastal and fluvial erosion are pressing issues here as elsewhere along this coastline, and local informants indicated that the river had seen increased sedimentation rates, while the erosion of the island of Ohlinhoué is attributed locally to severe floods in 2010 and 2016.

The island is occupied by a modern village, is heavily vegetated, contains a number of protected religious areas that cannot be disturbed, and is subject to erosion, so the choice of excavation locale was constrained. Two 2 × 1 m units were excavated (Figure 3).¹ While Trench 1 (long axis north–south) was excavated by spits (of 10 cm, and after Spit 6 inclusive, 20 cm), Trench 2 (long axis east–west) showed better stratigraphic definition and was excavated by contexts. Here, Context 6 in particular contained three distinct features consisting of accumulations of pottery and shells. Both units were reduced to 1 × 1 m in the final, lowest, level as they reached the water level and became waterlogged. Charcoal occurred in small flecks, and bone (especially fish), shell (cowries, oysters), and shellfish (crab) remains were recovered throughout. Artifacts included lithics, glass, metal, beads, and pottery. All soil was sieved at a mesh of 0.5 cm, apart from the very lowest levels of Trench 1, where the unit became filled with water.

Trench 2 evidenced a regular succession of slightly sloping layers (Contexts 1–5) in its uppermost part, which, given the finds retrieved (a plastic comb [Small Find 57], a coin minted in the 1970s [SF 21], items of personal adornment recognized by local onlookers as of the type “our grandmothers used to wear” [SF 28cd]), and the situation slightly downslope from the modern village, we interpret as submodern. Below these

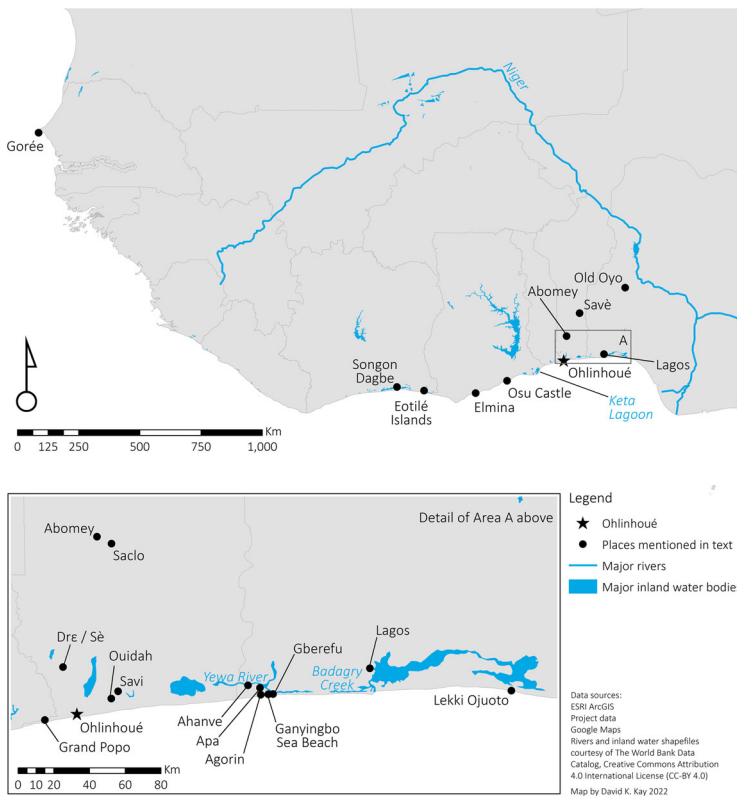


Figure 2. Sites mentioned in text. Agorin is also spelled Angorin and Agonrin by some authors. Map drawn by David K. Kay.

was a homogeneous and increasingly wet context with substantial clusters of shell and pottery (Context 6 and Features I–III; Context 7 and Feature I). Some of the ceramics were heavily eroded and embedded within agglomerations of shell, indicating possible redeposition. Trench 1 evidenced a contrasting situation, with a series of pits and cuts (Contexts 3–6) underlying an undifferentiated context of dark, increasingly clayey sand (Context 2), which, although it yielded artifacts throughout, appears to mark a break between upper and lower levels (Supplementary material, Figure S3 and Tables S1 and S2). As will be discussed below, the small finds retrieved also evidenced significant variations between and within the two trenches.

Results

The pottery

A small number of imported sherds, corresponding to two dishes of likely European provenance, were recovered from the upper levels of Trench 1. These are briefly discussed below, but the present analysis concentrates on the locally made pottery, understood here as lying within the daily sphere of action of potters in this region. A total of 4790 such sherds were recovered during excavation ($n=2593$ from Trench 1 and $n=2197$ from Trench 2; Table 1).

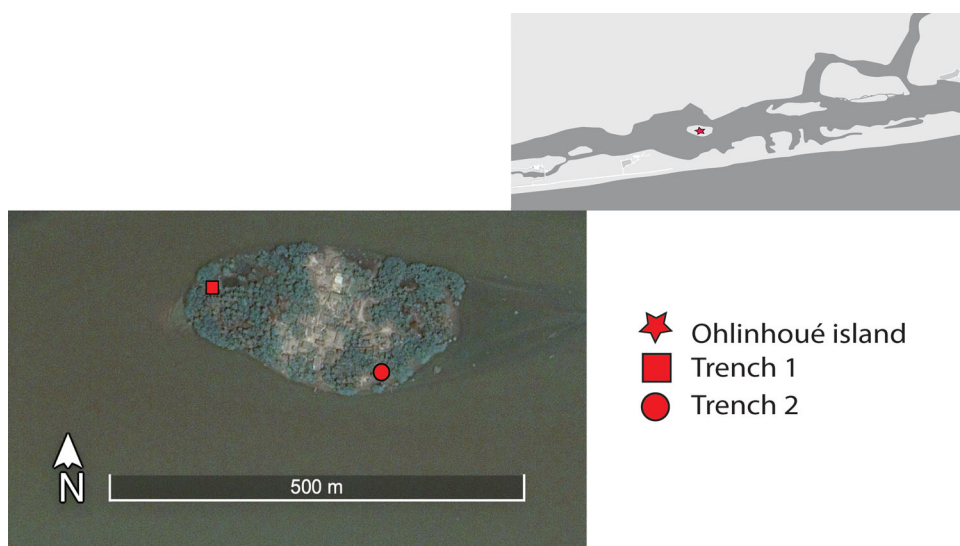


Figure 3. Ohlinhoué island, near Avloh, Bénin, showing the locations of Trenches 1 and 2.

In the course of on-site sampling of material, sherds smaller than a 100CFA coin (26 mm diameter) were counted, recorded by context/level, and reburied on site without further analysis, given that any comment on shape and decoration is unreliable on items so small. This concerned 1585 sherds (33.1% of the assemblage). The following discussion therefore focuses on the remaining 3205 items. These were subjected to individual attribute-based analysis, recording type (body, rim, base), surface treatment, and size. In the case of rims, shape and, where possible, rim angle and vessel diameter were also recorded. Petrographic or fabric analysis was not part of the scope of the research, as the priority was to devise an initial chrono-typology based on our experience in other regions where such basic data were not yet in existence (e.g., Haour et al. 2018).

Some sherds were heavily eroded, and 12 sherds from Trench 2 (Context 7b, about 90–115 cm below the surface) were embedded within agglomerations of mollusk shells. Only a very small number of refits ($n = 15$) were identified, and they rarely occurred between contexts or levels, speaking for the integrity of the sequence. Undecorated body sherds formed most of the assemblage ($n = 2785$; 86.9%). The more diagnostic fraction of the assemblage was packed and stored in Ouidah Museum on the conclusion of fieldwork and was subsequently analyzed by one of the authors on a return visit to Bénin as part of a Master's study (Coulson 2019).

Decoration

The assemblage included 177 decorated sherds. Decoration techniques were recorded individually, and the 59 different types identified can be grouped into seven broad categories: incised comb, incised geometric, painted, carved roulettes (further subdivided into “triangular” and “grid”), other roulettes, perforated, and “other” (Table 2, Figure 4).

Table 1. Overview of pottery finds from Trenches 1 and 2.

Trench 1														
	Context					Total								
	1	2	3-4-5	4-5-6	5-6-7									
Body sherds														
Decorated	3	21	13	6	2	45								
Undecorated	67	457	458	389	73	1444								
<i>Total</i>	70	478	471	395	75	1489								
Rim sherds														
Decorated	2	7	6	8	2	25								
Undecorated	12	40	74	55	3	184								
<i>Total</i>	14	47	80	63	5	209								
Total	84	525	551	458	80	1698								
Small sherds discarded in field	103	510	25	206	51	895								
Grand total earthenwares	187	1035	576	664	131	2593								
Imported pottery														
Rim sherds	–	5	–	–	–	5								
Body sherds	1 ^a	5	–	–	–	6								
<i>Total</i>						11								
Trench 2														
	Context													Total
	1	2	3	4	5	6	6-S1	6-S2	6-S3	7a	7b	7c	7c-S1	
Body sherds														
Decorated	0	2	3	14	15	7	–	–	–	–	24	–	–	65
Undecorated	25	14	29	82	1	410	6	–	–	–	774	–	–	1341
<i>Total</i>	25	16	32	96	16	417	6	–	–	–	798	–	–	1406
Rim sherds														
Decorated	3	–	2	5	1	8	1	–	–	12	10	–	–	42
Undecorated	3	–	2	4	1	13	1	–	1	17	16	1	–	59
<i>Total</i>	6	–	4	9	2	21	2	–	1	29	26	1	–	101
Total	31	16	36	105	18	438	8	0	1		854			1507
Small sherds discarded in field	30	53	83	227	9	261	0	12	6		9			690
Grand total earthenwares	61	69	119	332	27	699	8	12	7		863			2197
Imported pottery														
Rim sherds	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Body sherds	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<i>Total</i>														–

Note: ^aAbraded edge noted.

Incisions: Comb and geometric

Incised comb decoration ($n = 35$) was observed only on rim sherds. In two instances, wavy line incised decoration had been applied to the rim interior. The number of lines and the angle of the waves varied.

Incised geometric decorative patterns, consisting of parallel lines filled in with triangular motifs and cross-hatching, occurred on both rim and body sherds ($n = 27$). Although they followed the same general structure, distinct designs were identified across the assemblage. A number appeared in combination with underlying painted decoration, typically white in color. Incisions were usually made prior to firing, but post-firing incisions were also noted.

Table 2. Occurrence of decorations in Trenches 1 and 2.

Trench 1						
	Context					Total
	1	2	3-4-5	4-5-6	5-6-7	
Body sherds						
Incised comb	–	–	–	–	–	–
Incised geometric	–	1	8	1	2	12
Paint	–	–	4	–	2	6
Carved roulette—triangular	–	2	1	–	–	3
Carved roulette—grid	1	9	2	3	–	15
Other roulette	–	1	2	1	–	4
Perforated	–	–	–	–	–	–
Other	1	5	–	–	1	7
Total	2	18	17	5	5	47
Rim sherds						
Incised comb	1	4	2	2	2	11
Incised geometric	–	–	2	2	–	4
Paint	–	–	–	–	–	–
Carved roulette—triangular	–	–	–	–	–	–
Carved roulette—grid	1	1	–	–	–	2
Other roulette	–	–	–	–	–	–
Perforated	–	–	–	2	–	2
Other	–	2	2	2	–	6
Total	2	7	6	8	2	25
Grand total	4	25	23	13	7	72

Trench 2														
	Contexts													Total
	1	2	3	4	5	6	6-FI	6-FII	6-FIII	7a	7b	7c	7c-FI	
Body sherds														
Incised comb	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Incised geometric	–	–	–	–	–	4	–	–	–	–	4	–	–	8
Paint	–	–	–	1	–	5	–	–	–	2	11	–	–	19
Carved roulette—triangular	–	–	–	1	–	1	–	–	–	–	3	–	–	5
Carved roulette—grid	–	2	3	9	–	2	–	–	–	2	–	–	–	18
Other roulette	–	–	–	1	–	2	–	–	–	3	6	–	–	12
Perforated	–	–	–	–	–	–	–	–	–	1	1	–	–	2
Other	–	–	–	2	–	1	–	–	–	1	4	–	–	8
Total	–	2	3	14	–	15	–	–	–	9	29	–	–	72
Rim sherds														
Incised comb	1	–	3	1	2	4	–	–	–	9	4	–	–	24
Incised geometric	–	–	–	–	–	–	1	–	–	2	–	–	–	3
Paint	1	–	–	2	–	1	2	–	–	–	6	–	–	12
Carved roulette—triangular	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Carved roulette—grid	1	–	–	1	–	–	–	–	–	–	–	–	–	2
Other roulette	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Perforated	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Other	1	–	–	1	1	4	–	–	–	3	6	–	–	16
Total	4	–	3	5	3	9	3	–	–	14	16	–	–	57
Grand total	4	2	6	19	3	24	3	–	–	23	45	–	–	129

Note: Total numbers for each decoration type according to level/context relate to instances of this decoration, and as such these totals exceed the number of decorated sherds.

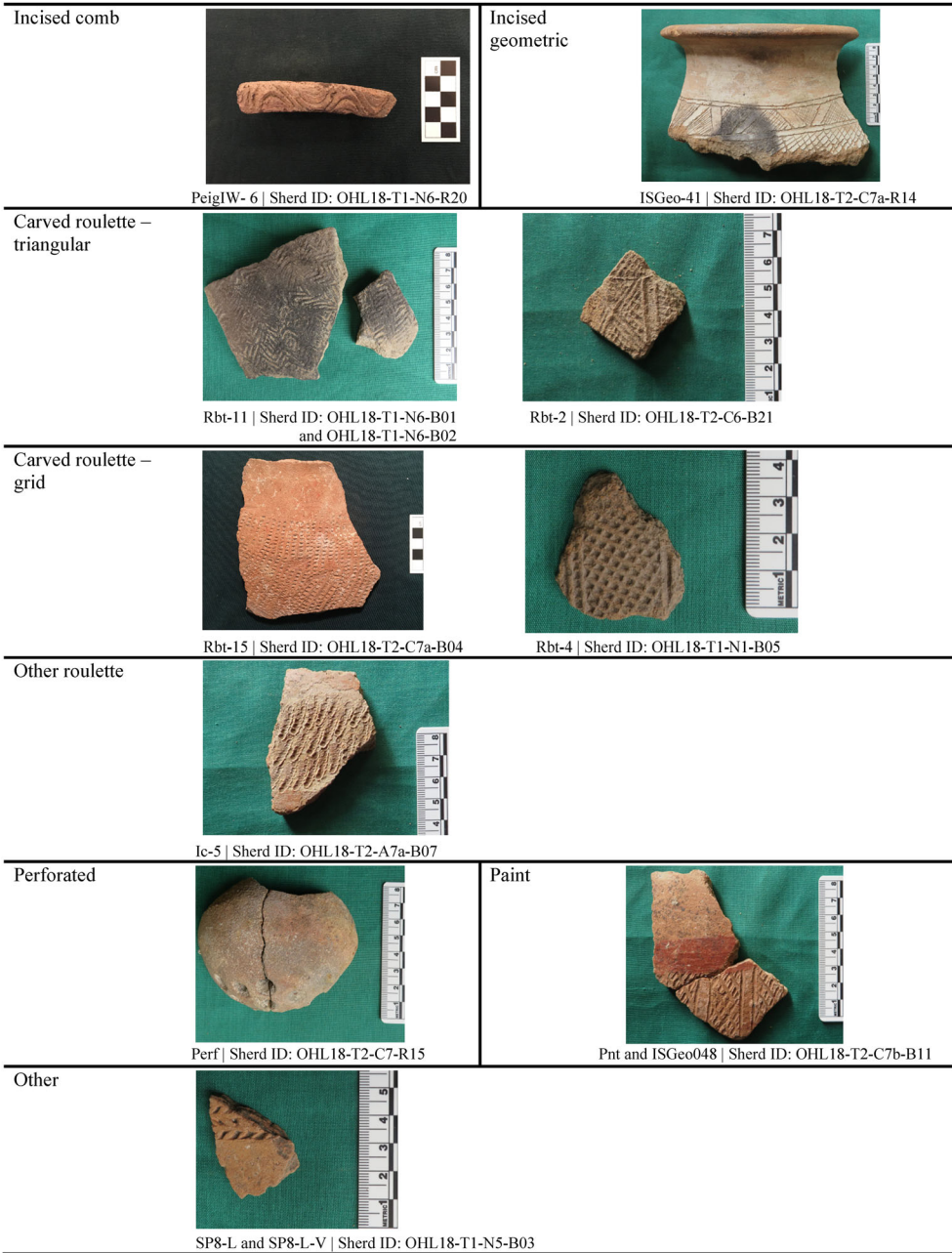


Figure 4. The seven major types of decoration identified at Ohlinhoué.

Paint

Painted decoration was often situated along the rims of sherds, thickly applied and usually a burnished dark reddish-orange color; in other cases, contrasting bands of burnished red or orange paint ran above or below the incised decoration on body sherds. This decoration occurred on both rim and body sherds ($n = 37$).

Roulettes: Carved (grid and triangular), other

The variety within the carved roulette group ($n = 45$) was striking, with 17 distinct types recorded. These broke down into two distinct groups; on the one hand, those forming square, rectangular, or oblique grid patterns, sometimes separated by lines or by lines of square impressions, and on the other those featuring triangular patterns. In both cases, the regularity of the spacing and the size of indentations point to the use of carved wooden roulettes (Livingstone Smith et al. 2010, 79–82), apparently rolled rather than single-impressed. The triangular types were much less common than the grid types (only eight occurrences, all body sherds).

Impressions of other roulettes, such as those made of cord or strip, occurred on some body sherds ($n = 16$). These appear to have been single-impressed or in some cases rocked and stamped to create chequerboard motifs.

Perforated

Perforated sherds were infrequent ($n = 4$) and variable. Two rims from Trench 1 refitted to form part of a small vessel with perforations in the bottom half.

Other

This category ($n = 37$) includes various decorations that occurred infrequently, such as singular incisions, finger impressions, and stabbed impressions using tools with a triangular or quadrilateral cross-section.

Decorations—overview

In examining evolutions across the sequence, we are not helped by the high proportion of undiagnostic sherds, a problem reported by other researchers working on sites of the broader region. However, of the seven groups we defined, incised geometric decorations and the various types of carved roulette decorations may suggest some temporal distinctions within a broadly similar assemblage (Table 2). Incisions and perforations tended to be limited to lower levels, whereas in upper levels a greater proportion of roulette (both carved and “other roulette”) decoration was identified. Incised Geometric decoration was largely confined to the series of cuts at the base of Trench 1 (Contexts 3–7), and to Contexts 6 and 7 in Trench 2. “Triangular” carved roulette motifs tended to occur in lower levels while “grid” roulettes, although recovered throughout the stratigraphy, were more common in upper levels, a trend especially noticeable given the small total numbers of sherds from upper contexts/levels.

Rim type

A total assemblage of 310 rim sherds was recovered, a good proportion of which was of sufficient size to suggest vessel morphologies. Altogether, 48 rim shapes were identified, lying on a continuum and grouped into the broad categories of carinated, everted, simple, and thickened; just one base sherd was recovered (Supplementary material, Figure S4;

Table 3. Diagnostic categories in Trenches 1 and 2.

Trench 1													
	Context					Total							
	1	2	3-4-5	4-5-6	5-6-7								
Carinated	–	–	1	1	–	2							
Everted	6	34	59	41	4	144							
Simple	1	1	1	2	–	5							
Thickened	7	11	19	20	1	58							
Base	–	–	1	–	–	1							
Unidentified	–	–	–	–	–	–							
Grand total	14	46	81	64	5	210 ^a							

Trench 2														
	Context													Total
	1	2	3	4	5	6	6-F1	6-F2	6-F3	7a	7b	7c	7c-F1	
Carinated	1	–	–	–	–	–	–	–	–	–	–	–	–	1
Everted	3	–	3	6	2	16	1	–	1	27	22	1	–	82
Simple	–	–	1	–	–	–	–	–	–	–	–	–	–	1
Thickened	2	–	–	3	–	5	1	–	–	1	4	–	–	16
Base	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Unidentified	–	–	–	–	–	–	–	–	–	1	–	–	–	1
Grand total	6	–	4	9	2	21	2	–	1	29	26	1	–	101

Note: ^aOne sherd was recorded twice as it displayed attributes of both a rim type (E) and a base (B3), so the grand total is 210 rather than 209 (as in Table 1).

Table 3). Rim diameter could be deduced for 81 sherds, with a median of 23 cm. Considering that everted rims dominated by a clear majority across the stratigraphies ($n = 144$, 68% in Trench 1 and $n = 82$, 81% in Trench 2), this is indicative of large vessels.

Other finds

Cypraeidae

Sixteen cowrie (Cypraeidae) fragments were recovered, representing 15 shells (Supplementary material, Table S3). These were assessed by visual and microscopic analysis to identify species, size, condition, and any evidence of anthropogenic modifications as part of a wider analysis of cowries from West African sites (see Haour and Christie (2019), where the Ohlinhoué assemblage is discussed as “Avloh” after the nearest village).

Curiously, only Trench 1 at Ohlinhoué yielded cowries. Shells in the lower layers were in much better condition than those in the upper contexts, which were chalky, thin, and appeared water damaged.

All shells were identified to species level, based on ventral morphology, shape, and the presence or absence of tubercles. All nine cowries in the upper part of the stratigraphy (Spits 1–4, corresponding to contexts 1 and the upper part of 2) were *Monetaria annulus*, whereas all but one of the seven cowries in Spits 7–9 (Contexts 3–6) were *Monetaria moneta*. No cowries were recovered in the middle part of the sequence (Spits 5 and 6). Both *M. annulus* and *M. moneta* are Indo-Pacific species. Some 44% ($n = 7$) of cowries were unmodified and undamaged, distributed evenly between upper and lower levels. Of the remaining eight shells, one was naturally perforated, two were partially perforated (one seemingly deliberately), four were fully perforated, and one was indeterminate.

Data relating to cowries in the Bight of Benin have been well discussed, due to their faraway provenance and their historically attested association with the trans-Atlantic trade in enslaved people. These shells were a dominant import during the period AD 1650–1880 and were widely established locally for commercial and social payments (Ogundiran 2002, 2020). Ouidah was probably the greatest importer of cowries at the peak of the trade, in the eighteenth century (Hogendorn and Johnson 1986, 113). Up to that point, it is likely that the shells concerned were of the *M. moneta* species, but by the early nineteenth century cowries were reported as being in heavy demand at coastal settlements, from where they were sent inland. Historical sources advance that an experimental introduction to Ouidah of *M. annulus* cowries from the East African coast was attempted by Hamburg-based traders in 1845; this (often slightly larger) species eventually proved acceptable to local palm oil traders (Hogendorn and Johnson 1986, 74). Although the idea of a sudden replacement of *M. moneta* by *M. annulus* is too neat, developing archaeological data relating to the polity of Dahomey, well-known for its heavy use of these shells, lend some support to the idea. Analysis by Annalisa Christie of a group of 213 cowries recovered from a burial near the palaces at Abomey (Merkyte and Randsborg 2009), and a cache of 303 cowries from the site of Saclo (Monroe n.d.), thought to date respectively to the seventeenth/eighteenth and nineteenth centuries, showed that while in the case of the former 95% of the shells identified to species were *M. moneta*, the opposite was true of the Saclo deposit which consisted overwhelmingly (94%) of *M. annulus*. The finds from Ohlinhoué contribute to this evolving picture of the distribution of various Indo-Pacific cowrie species on the West African coast. It should also be noted that along the coastline of modern Bénin certain types of cowrie have important religious associations; some consider them linked to pelagic deities, but they can also be ambivalent, and associated with witchcraft and harm (Iroko 1987, 85–90).

Ceramics: Imported pottery

A small group of sherds ($n = 11$), representing two items of likely European provenance, came from the uppermost levels (Spits 1–4: Contexts 1 and upper 2) of Trench 1. These finds show close similarities with material recovered in eighteenth- and nineteenth-century contexts within the surroundings of Osu (Christiansborg) Castle, Accra (Wazi Apoh, University of Ghana-Legon, pers. comm. by email, July 2020).

Ceramics: Pipes

Six complete pipes, 80 complete or fragmented pipe bowls, and over 700 fragments (mainly stems) were recovered from the excavation units, with a further 29 stem pieces and four bowl fragments from opportunistic surface sampling (Azagoun 2020). These finds occurred in both Trench 1 and Trench 2 but were about 20 times more numerous in the former. There, they were recovered throughout the sequence but were most plentiful in the succession of pits in the basal layers, Contexts 3–6, in which ~550 items were retrieved (Azagoun 2020). Their white color, long stem, and relatively small bowl identify these pipes as European rather than local production. Most were completely smooth and undiagnostic, though marks relating to specific workshops, including some

linked to early eighteenth- to early nineteenth-century workshops in Holland (Azagoun 2020; Rivallain 1994, 13), were apparent on a small sample.

Beads

Ten beads were recovered from the excavations, split equally between Trenches 1 and 2. They occurred throughout the sequence in Trench 1, but only in upper levels (Contexts 2 and 3) in Trench 2. All but two of the beads were monochrome and difficult to characterize. Four are thin disks; two, SF 53a and 53b, white, from the basal layers of Trench 1, likely belonged to a set while two others, SF 28c and 28d, occurred in Trench 2, Context 3 and were described by onlookers as similar to beads worn by women two generations earlier. The remaining four monochrome beads—two blue, one yellow, and one white—are cylindrical. The two multi-colored beads both came from Trench 2. SF 25, from Context 2, is barrel-shaped with brown and yellow stripes running along the perforation axis; SF 28a, from Context 3, is a dark brown rounded bead with slightly off-center perforation and white wavy design. Judging by their stratigraphic position they are likely submodern.

Discussion

The levels sampled at Ohlinhoué offer an illustration of a locally rooted occupation dating to the time of West Africa's entanglement with Atlantic networks but closely connected to other occupations along the coastline. In eastern Ivory Coast, surveys of the Eotilé islands aimed specifically at characterizing lagoonal cultures identified built structures, shell middens, burials, and materials of European origin such as glazed ceramics, glass bottles, pipe fragments, a pewter spoon, and a copper key (Polet, in Huysecom et al. 2014, 2016). Some of the funerary evidence, recovered in an anthropic shell midden, was however much earlier, dating to around 2000 BP (Chenorkian 1983; Polet 1995). Later surveys and excavations, focusing on the polity of Issyny and the local side of the encounter with Europeans, identified settlement and ironworking remains, a necropolis, shell middens, late seventeenth-century European cannons, and a relatively small excavated ceramics assemblage dominated by undecorated and incised sherds with radiocarbon dates of between the sixteenth and the nineteenth centuries (Huysecom et al. 2014, 2016).

It is, however, sites investigated in parts of Nigeria that offer the most important points of comparison to Ohlinhoué. These are anchored by a similarity in ceramic culture, parallels in environmental and geographical location, and shared associations with salt production. Excavation by Allsworth-Jones and Wesler (1998) of a 2 × 2 m unit at Ganyingbo Sea Beach, a low mound on the narrow area between the beachfront and the interior of the barrier island, revealed a high density of ceramics; described as of a style broadly comparable to modern pottery, this material was characterized by carved wooden roulettes and grooved rims. Terracotta cylinders (possibly fishing weights?), a pipe stem, and a handful of cowries were also retrieved. The more than 20,000 pottery sherds were subjected to detailed study; the material's homogeneity, the lack of domestic refuse, and ethnographic analogies led the excavators to suggest the site had been used for salt-boiling. The finds and a tentative thermoluminescence date (290 ± 20 BP, Alpha-3192) place the occupation in the seventeenth century or later.

Subsequent work took place at the sites of Gberefú and Agorin, on the Atlantic coast, and at Apa and Ahanve, sites slightly inland on the Yewa River and Badagry Creek (Alabi 2000, 2002; Orijemie 2014). Excavations suggested a Late Stone Age occupation at Apa Site 1 and a later, historic, occupation at Apa Site 2, with a date of 360 ± 50 BP (Beta-91940; Alabi 2002, 197). Materials recovered from Apa 1 included sandstone artifacts and a small number of potsherds, all undecorated, while Apa 2 evidenced sandstone artifacts, over 1000 sherds decorated predominantly with carved roulettes, and small numbers of other finds, such as a single metal piece, fragments of glass bottles and smoking pipes, and one white glass bead (Alabi 2002). At Ahanve, excavations yielded pottery, local and imported smoking pipes, animal bone, shell, iron objects and slag, salt residues, and glass; pottery decoration included “carved wood roulette, wavy lines, incisions, comb teeth impression, incised and grooved, herringbone impression, single-string cord roulette, finger impressions, and deep incisions” (Orijemie 2014, no page numbers). Two radiocarbon dates fall in the period after AD 1450 (Orijemie 2014, Table 3; [Beta-296134 and Beta-296133]). Some of the pottery relates to very large vessels of a diameter of over 60 cm, and it is suggested, paralleling the suggestion made at Ganyingbo Sea Beach, that they may have been used for boiling salt.

These sites all lie relatively close to one another, just 100 km east of Ohlinhoué. They evidence a broadly similar artifactual assemblage, dominated by local rouletted pottery, with a small number of small finds linking into Atlantic networks. Some 140 km farther east, in the Lekki area, a greater number of artifacts relating to Atlantic networks, such as cowries, alcohol bottles, and imported brick, were recovered at Lekki Ojuoto, which features a large complex of standing brick structures linked with European presence; yet the importance of fishing, exploitation of land snails, and salt making reflect an intensive exploitation of local resources (Oseni, Aleru, and Alabi 2015, 102). In addition, the pottery connects the site with the ones just discussed; Oseni, Aleru, and Alabi (2015, 102, and see their Fig. 7) describe their material and that from Ganyingbo Sea Beach, Gberefú, and Agorin as indistinguishable. Allsworth-Jones and Wesler (1998) further identify commonalities between the material from Agorin and that reported by Paradis (1977) in present-day Bénin (Figure 1C). The significant parallels in the ceramic material issued from these various sites point to a cultural and chronological commonality.

These ceramics also have close parallels with our material. Impressions of carved wooden roulettes similar to the “grid” carved roulettes from Ohlinhoué were predominant at Ganyingbo Sea Beach (Allsworth-Jones and Wesler 1998, 50–1, Fig. 2.7, 2.9) and at Apa Site 2 (Alabi 2002, 193, Fig. 5a). The decoration also appears to have been common at Lekki Ojuoto, although it is not illustrated in Oseni, Aleru, and Alabi (2015). The forms reported at Apa Site 2, which include large storage pots and bowls, as well as perforated sherds (Alabi 2002), are also reminiscent of the Ohlinhoué material.

Returning to the immediate vicinity of Ohlinhoué, some archaeological and ethnographic data exist to provide a context for the pottery recovered. At the site of Savi, former capital of the Kingdom of Hueda linked into Atlantic trade, over 90% of the assemblage excavated was undecorated and decorative types are not discussed in detail, but grid carved roulettes and wavy line incisions (Kelly 1995, Fig. 29) parallel the finds at Ohlinhoué. A ceramic assemblage issued from the site of Dře, in the Lower Mono River valley, test pitted in the context of salvage excavations and thought to date to the early seventeenth century, was

again characterized by predominantly undecorated material (here, over 75%), but among the motifs recognized are perforated, carved roulette impressions and incised decorations similar to the Incised Geometric defined at Ohlinhoué (Balo 1999, Plates 7–11).

The wider political context is important in contextualizing these findings, as the coastal sites just discussed would have been affected in some way or another by the shifts and power struggles linked with the expansion of Atlantic commerce. Historians and archaeologists have paid particular attention to the circulation of material culture within and between the polities involved (e.g., Fuglestad 2018; Gurstelle 2015; Hogendorn and Johnson 1986; Kelly 1995, 1997, 2001, 2002; Law 1989, 1991; Merkyte and Randsborg 2009; Monroe 2007, 2014; Norman 2009a; Ogundiran 2001, 2002, 2020; Randsborg et al. 2009). Although the nature of the impacts on small-scale settlements of the sort just examined remains difficult to determine, some of the published materials are instructive. Finds from Abomey, the heartland of the later polity of Dahomey, indicate a use of carved wooden roulettes predating the arrival of Europeans; these are documented from the first half of the thirteenth century AD, with triangular geometric carved roulette-decorated pottery dated to the fifteenth and sixteenth centuries AD then a gradual replacement, beginning around AD 1650, by carved roulette decoration resembling the “grid” impressions common at Ohlinhoué (Randsborg et al. 2009, 132, pl. 51, 139 pl. 59.12, 186). Similar grid roulette impressions are also documented at post-AD 1700 sites farther east, associated with the Shabe kingdom (termed “square grid carved roulette”; Gurstelle 2015, Fig. B.4; Gurstelle, Labiyi, and Agani 2015, 239, Fig. 6f).

Beyond the question of this shared decorative repertoire is that of the context of clay mining and pottery production. Possible places of manufacture for the ceramics recovered from the Nigerian coastal sites were discussed by Oseni, Aleru, and Alabi (2015, 99) but could not be conclusively identified given the dearth of present-day potters able to provide a historical context. In Bénin, in contrast, several reputed potting centers operate within a few dozen kilometers of the site of Ohlinhoué, most especially at Sè (Sègbo) and at Agomè-Glozoun in neighboring Togo. A regional study of several of these, including Sè, documented the use of carved wooden roulettes, made of *Mitragyna inermis* or *Pterocarpus santalinoïdes* (Rivallain 1981, Photo 1). Potters commissioned different types of roulette from specialist carvers, in order to mark their individuality, and several roulettes of different types might be used on larger vessels, creating a design with multiple registers. A more recent ethnoarchaeological study documenting the *chaîne opératoire* of pottery production at Sè (Hounguevi 2017) also reports the use of carved wooden roulettes, *tinkpoe*. The tools illustrated (Hounguevi 2017, Plate 16) would, when rolled, result in a “grid” pattern of the type seen at Ohlinhoué, and similar vessels are sold in the market at Ouidah today. Indeed, oral and written historical traditions indicate trade in vessels between coastal regions and pottery-producing areas slightly inland. Traditions suggest that ceramics were once the principal export of the region around Drè, traded to the coast for use in salt production (Metinhoue and Adande cited in Balo 1999, 86). When he visited Ouidah, Skertchly (1874, 83) remarked that “very little crockery” was made there, so that there was “a constant trade in it between the coast and the interior.” The longer-term history of regional potting centers remains to be determined and, as Hounguevi (2017, 40) concludes, an archaeological study of a modern production center such as Sè would be important in order to compare shapes and decorative types with present-day productions.

Conclusion

The excavations carried out on the lagoonal island of Ohlinhoué of southwestern Bénin brought to light a suite of artifacts. The two units excavated returned different materials; cowrie shells were only found in Trench 1 and pipe fragments were also far more numerous in that unit. Imported materials agree on an early eighteenth- to nineteenth-century date, and the assemblage also tentatively reflects a shift from *M. moneta* to *M. annulus* cowries that historical sources situate in the mid-nineteenth century. However, it is the locally produced ceramic assemblage that offers the most compelling insights, relating Ohlinhoué to its broader region in terms of both decoration and rim type. The focus of this paper has been on this collection of close to 4800 sherds; a rigorous analysis of vessel form and decorations was prioritized, the latter focusing on the tools used and allowing the identification of both continuities and discontinuities in the record. The “grid” carved roulette impressions in particular have a number of parallels across the wider region. Nearby Ouidah was a main port for Dahomey in the eighteenth and nineteenth centuries, and affinities exist between the material from Ohlinhoué and that issued from work around Dahomey’s capital, Abomey, 100 km away. The closest parallels lie, however, in the coastal regions of Nigeria, with sites such as Lekki Ojuoto, Ganyingbo Sea Beach, Gberefu, Agorin, and Apa 2, several of which are similar in environmental and geographical location, as well as in terms of material culture. The production of salt by boiling sea water, as an alternative source of salt to that provided by European trade networks, is a recurring theme; ethnographic work conducted by Allsworth-Jones and Wesler (1998) and Rivallain (1977) documented the use of ceramic vessels in the process, and a high turnover of vessels. The material from Ohlinhoué is consistent, in its shape and size, with such a function, and the island engaged in salt-making activities until recent times. The archaeological material therefore lends significant support to the written and oral historical sources.

The data presented here have offered an insight into a poorly understood landscape of coastal West Africa. One promising line of enquiry along the Bénin coastline will be to identify the earlier occupations hinted at by the test pitting conducted by Paradis (1977), and more fully illustrated at sites such as Apa Site 1 in Nigeria (Alabi 2002), and Songon Dagbe and Nyamwan in Ivory Coast (Chenorkian 1983). This lay outside of the scope of the present study but is currently being pursued by two of the authors (DN’D and NL) as part of impact assessment surveys linked to infrastructure development. Although the relative scarcity of ceramics and their non-diagnostic nature poses challenges, those studies have already shown the potential of sustained investigation into the full suite of artifacts. Analyses of plant remains and of fauna, in particular the abundant shell remains, will complement the historical data (see e.g., Juhé-Beaulaton 1995) and extend their scope, and shed light on the use of cowries—both native and potentially imported species—in the period before European contact.

The present study’s primary aim, however, has been to address calls to consider ceramics as active material varying across space and time. Gijanto and Ogundiran (2011, 244) have highlighted the problem that “significantly” less is known about Atlantic Period ceramics and their context in West Africa than is known about contemporary material life in diasporic communities in the Americas. West African ceramics then risk being treated as unproblematic markers of identity, a situation far removed from the

known realities of experimentation, borrowing, and adaptation by potters and their communities, and of the diverse attributes of utilitarian pottery (Gijanto and Ogundiran 2011). The ceramic assemblage from Ohlinhoué offers initial insights into local production and connections, working across archaeological, historical, and ethnographic data, and informing the question of local economies and, especially, salt production. Future work on the materials, in particular as regards fabric and paste, will clarify production contexts; but our present hypothesis is that Ohlinhoué, and sites eastwards along the coastline, were supplied by potting centers further inland which also serviced major political and trade centers of the time, such as Abomey and Ouidah. As such the “mundane” pottery from Ohlinhoué, connecting as it does with other coastal regions and with historically attested regional polities, enables more nuanced views of interactions during a period of profound global change.

Notes

1. The excavation team consisted of the authors, plus seven undergraduate students from Université d'Abomey Calavi.

Acknowledgements

We are grateful to the Direction du Patrimoine Culturel (research permits 136/DPC/MTCS/SA and 368/DPC/MTCS/SA), to the regional authorities at Grand-Popo for allowing our work, and to Eco-Bénin NGO for hosting us during our stay at Avloh. Thank you to the Université d'Abomey Calavi students Honoré Adokin, Angelo Ayedoun, Jules Azagoun, Aubierge Ahoton, Camarou Houessou, Haminou Dalou Kowi, and Jonathan Gounou for their hard work and enthusiasm on this, their first training excavation. We are grateful to Inga Merkyte and Cameron Monroe for the loan of cowries from Saclo and Doguème which provided valuable comparative data. Thank you very much to Annalisa Christie, University College Dublin, Marilee Wood, University of the Witwatersrand, and Wazi Apoh, University of Ghana-Legon, for comments on cowries, beads, and European imported pottery respectively. We are grateful to Giulia Nazzaro for drawing [Figures 1 and 3](#) and [Supplementary material Figure S4](#), David K. Kay for [Figure 2](#), to Raphael Alabi and Eric Huysecom for valuable copies of papers, and to Jules Azagoun for early sight of his BA dissertation. Finally, we thank the reviewers for their comments.

Declaration of interest

The authors report there are no competing interests to declare.

Funding

The work described here was made possible by funding from the University of East Anglia, via the 2017–18 GCRF QR allocation. The analysis of the cowries from Ohlinhoué, as well as Saclo and Doguème, was conducted as part of a wider research project, *Cowrie Shells: An Early Global Commodity* (RPG-2014-359), awarded by the Leverhulme Trust to Anne Haour with Alastair Grant, University of East Anglia, as Co-Investigator.

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