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Cowries in the archaeology of West Africa: the present picture

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ABSTRACT

Despite the perceived importance of cowrie shells as indicators of long-distance connections in the West African past, their distribution and consumption patterns in archaeological contexts remain surprisingly underexplored, a gap that is only partly explicable by the sparse distribution of archaeological sites within the sub-continent. General writings on the timeline of importation of cowries into West Africa often fail to take into account the latest archaeological evidence and rely instead on accounts drawn from historical or ethnographic documents. This paper is based on a first-hand assessment of over 4500 shells from 78 sites across West Africa, examining chronology, shell species and processes of modification to assess what distribution patterns can tell us about the history of importation and usage of cowries. These first-hand analyses are paralleled by a consideration of published materials. We re-examine the default assumption that two distinct routes of entry existed — one overland from North Africa before the fifteenth century, another coming into use from the time sea links were established with the East African coast and becoming predominant by the middle of the nineteenth century. We focus on the eastern part of West Africa, where the importance of imported cowries to local communities in relatively recent periods is well known and from where we have a good archaeological sample. The conclusion is that on suitably large assemblages shell size can be an indication of provenance and that, while the present archaeological picture seems largely to confirm historical sources, much of this may be due to the discrepancy in archaeological data available from the Sahara/Sahel zone compared to the more forested regions of the sub-continent. Future archaeological work will clarify this matter.

RÉSUMÉ



Malgré l'importance supposée des cauris comme indicateurs de connexions à longue distance dans le passé ouest-africain, la question de leur distribution et leur consommation dans les contextes archéologiques demeure étonnamment peu explorée, un écart qui est seulement partiellement explicable par la distribution clairesemée des sites archéologiques. Les écrits généralistes traitant de la chronologie de l'importation des cauris en Afrique de l'Ouest

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souvent ne prennent pas en compte les dernières données archéologiques, s'appuyant plutôt sur des témoignages tirés de documents historiques ou ethnographiques. Le présent article se base sur une évaluation directe de plus de 4500 cauris provenant de 78 sites en Afrique de l'Ouest, examinant des questions de chronologie, les espèces concernées, et les processus de modification. Par ce biais, nous évaluons ce que les schémas de distribution peuvent nous dire au sujet de l'histoire d'importation et d'usage des cauris. Ces analyses de première main sont complémentées par une considération de la littérature. Nous réexaminons l'hypothèse fréquemment émise selon laquelle deux voies d'entrée distinctes existent: l'une terrestre par l'Afrique du Nord avant le quinzième siècle, l'autre résultant de l'établissement de liens maritimes avec la côte est-africaine et prédominante après le milieu du dix-neuvième siècle. Nous nous concentrons sur la partie orientale de l'Afrique de l'Ouest, où l'importance des cauris importés dans les communautés locales à des périodes relativement récentes est bien connue, et d'où nous possédons un bon échantillon archéologique. La conclusion est que, sur des assemblages suffisamment grands, la taille des cauris peut indiquer leur provenance. Aussi, bien que les données archéologiques en l'état actuel des choses semblent confirmer les modèles présentés par les sources historiques, cela peut être l'effet des différentes données qui sont disponibles provenant des zones saharo-sahéliennes et de forêt. De futurs travaux archéologiques pourront éclairer cette question.

Introduction

Two Indo-Pacific cowrie shells, *Monetaria moneta* (Linnaeus 1758) and *Monetaria annulus* (Linnaeus 1758) (Figure 1), have caused much ink to flow in reconstructions of the West African past. Often known in the literature as *Cypraea moneta* and *Cypraea annulus*, these marine gastropods are, by virtue of their source, frequently mentioned as markers of Africa's global connections (see, for example, Mitchell 2005). Their role in West Africa's social fabric suggests a deep history and today oral traditions evidence the centrality of cowries as a symbol in West African thought (see especially Iroko 1987).

Despite the historical and ethnographic significance of cowrie shells in West Africa, their occurrence in archaeological contexts has not been systematically reviewed. Cowries are often inconsistently reported in archaeological literature and, while most publications will indicate whether cowries were recovered and in what numbers, fewer state which species were present. Fewer still provide useful further details such as the shells' condition, any evidence of modifications (particularly whether the cowries are 'backed', i.e. have had their dorsum — the domed part of the shell — pierced or removed) or whether these modifications are likely to be natural or anthropogenic in origin (Heath 2017 is a recent exception). Assumptions are also often made regarding the probable function of perforated versus unperforated shells — ornamental use versus currency — for which there is no known evidence. The time therefore seemed to us to be ripe to consider the questions of the spread and usage of cowries in West Africa from an archaeological perspective.

Accordingly, the present paper uses evidence drawn from a systematic, standardised assessment of over 4500 cowrie shells from archaeological and museological collections



Figure 1. Modern cowries, showing dorsal view at top and ventral view at bottom. Left: *Monetaria moneta* from the Maldives; right: *Monetaria annulus* from the Comoro Islands.

across West Africa, with a chronological spread running from the tenth/eleventh to nineteenth centuries AD (Figure 2, Table 1). Our research has only been possible thanks to the generosity of colleagues who allowed us to examine the assemblages in their safekeeping; Table 1, and the Acknowledgments, hope to reflect our debt.

First-hand examination of the shells circumvents many of the issues linked to published materials and allows us to evaluate the extent to which oft-repeated historical narratives are mirrored in the archaeological record. We draw, too, on our understanding of living cowries to inform our interpretations. We set out to address the following questions:

- to what extent do the cowrie species represented in archaeological assemblages reflect proposed narratives regarding the chronology and trade mechanisms for the two key Indo-Pacific species, *Monetaria annulus* and *Monetaria moneta*?
- do regional variations exist between assemblages in terms of shell species, size and modifications?
- what role do cowries play in West African communities?

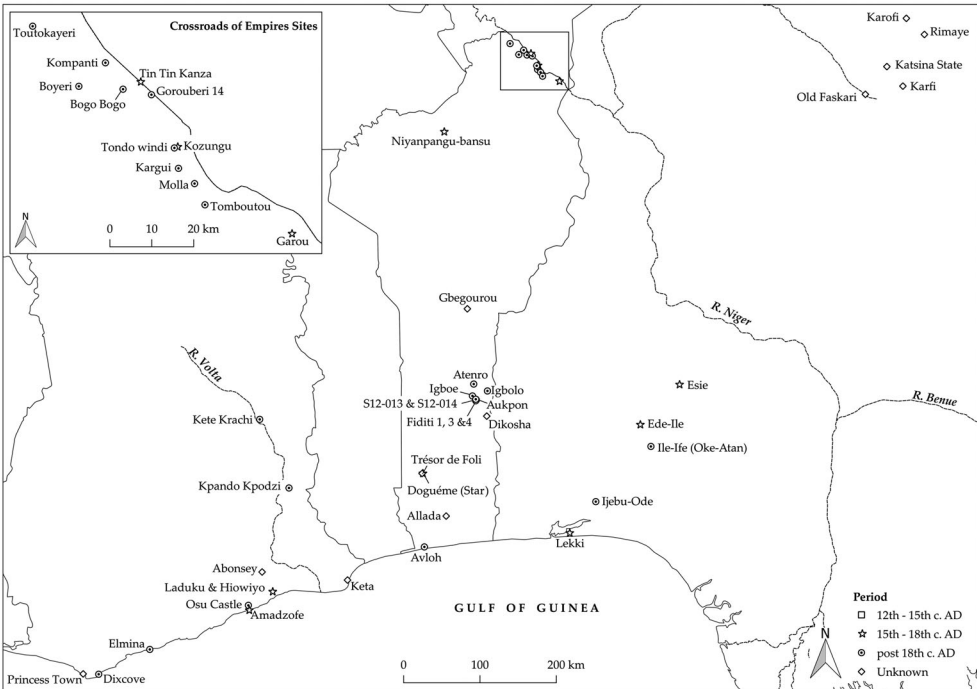
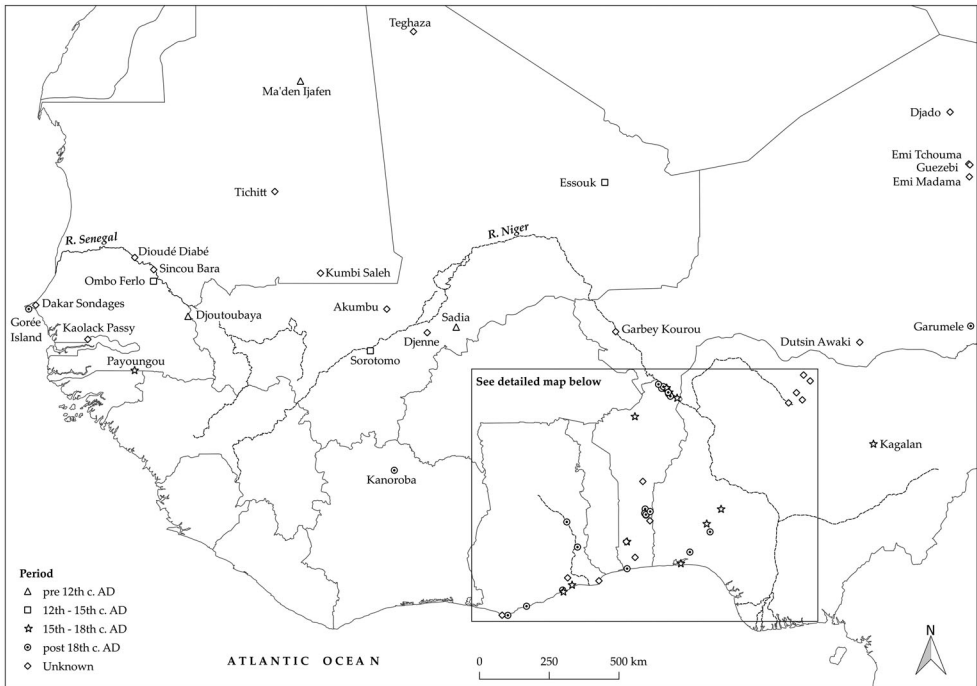


Figure 2. Sites from which cowries were studied, with indicative dates.

We begin by discussing cowries as living animals. We then outline what was known of the spread of cowries into West Africa based on historical sources and the issues that become apparent when these sources are confronted with archaeological data. Next, we present the

Table 1. Inventory of the cowries studied by region and assemblage size.

Site name	Area and Cluster (where applicable)	Number of cowries	Donor	Context	Chronology	Chronological grouping (see Figure 2)	Key references
Ma'den Ijafen (MAU67-151), Mauritania	Sahara/Sahel	3433	IFAN	Museum	785 ± 110 BP (I-2769) and 860 ± 108 BP (IFAN Dak-1) (Monod 1969: 310, 312); 900 ± 30 BP (Beta-466014) and 1030 ± 30 BP (Beta-466013) (Christie and Haour 2018a)	Pre-twelfth century	Monod 1969
Essouk, Mali	Sahara/Sahel	10	Sam Nixon	Archaeological (Excavated)	According to the site chronology, these are thought to fall within a date range of approximately the eleventh/twelfth to thirteenth/fourteenth centuries AD	Twelfth to fifteenth centuries	Nixon 2017
Akumbu, Mali	Sahara/Sahel	6	Kevin MacDonald	Archaeological (Excavated)	From a burial which cuts through several layers of stratigraphy. A small open hearth with white ash is nearby and yielded a date of 1130 ± 100 BP (Beta-49720). This is below the start of the grave cut and likely pre-dates the burial	Unknown	Togola 2008
Djoutoubaya, Senegal	Sahara/Sahel	5	Anne Mayor/ Eric Huysecom	Archaeological (Excavated)	One cowrie was recovered in an upper level in association with two charcoal samples dated to around the thirteenth century. The four other cowries come from two pits. Two dates from each pit suggest a tenth/eleventh-century date	Pre-twelfth century	Anne Mayor and Eric Huysecom, pers. comm.
Djado (N 49.253; G. Brouin), Niger	Sahara/Sahel	5	IFAN	Museum	Unknown	Unknown	
Djenne (SO 55.20), Mali	Sahara/Sahel	5	IFAN	Museum	Unknown	Unknown	
Sorotomo, Mali	Sahara/Sahel	4	Kevin MacDonald	Archaeological (Excavated)	Five dates on the site. Three of the cowries seen came from an abandonment floor, dated to 590 ± 40 BP (Beta-274305). This is judged rather too old by the excavators in light of other dates (470 ± 60 BP [Beta-236442] and 520 ± 60 BP [Beta-236443] which suggest a mid- to late fifteenth-century abandonment of the site.	Twelfth to fifteenth centuries	MacDonald <i>et al.</i> 2011
Guezebi (N 59-52), Niger	Sahara/Sahel	4	IFAN	Museum	Surface collection on undated site	Unknown	
Payoungou, Senegal	Sahara/Sahel	4	Sirio Canós Donnay	Archaeological (Excavated)	From Unit G, thought on the basis of the associated artefacts to date to the sixteenth to eighteenth centuries	Fifteenth to eighteenth centuries	Canós Donnay 2016

(Continued)

Table 1. Continued.

Site name	Area and Cluster (where applicable)	Number of cowries	Donor	Context	Chronology	Chronological grouping (see Figure 2)	Key references
Garumele, Niger	Sahara/Sahel	3	Anne Haour	Archaeological (Excavated)	The cowries came from a context that returned a post-1950 date (Pta-9572) that is considered unreliable. Associated artefacts — particularly the beads — suggest a late seventeenth/ eighteenth century-date, but small objects, including charcoal, have clearly moved through the sequence	Post-eighteenth century	Haour 2008
Emi Madama (NIG 59-50), Niger	Sahara/Sahel	3	IFAN	Museum	Surface collection on undated site	Unknown	
Teghaza (MAL 44.11), Mali	Sahara/Sahel	2	IFAN	Museum	Not known	Unknown	Mauny 1967; Monod 1975
Garumele, Niger	Sahara/Sahel	1	Anne Haour	Archaeological (Surface)	Surface collection on excavated site	Post-eighteenth century	Haour 2008
Sadia, Mali	Sahara/Sahel	1	Anne Mayor/ Eric Huysecom	Archaeological (Excavated)	The layer where the cowrie was recovered is bracketed by two radiocarbon dates, 970 ± 30 BP (ETH-40324) and 900 ± 30 BP (ETH-40323); the latter date is most closely associated with the cowrie shell	Pre-twelfth century	Huysecom <i>et al.</i> 2015
Ombo Ferlo, Senegal	Sahara/Sahel	1	Adama Athie	Archaeological (Excavated)	The site is undated, but based on the artefacts recovered a date of the first half of the second millennium AD is suggested	Twelfth to fifteenth centuries	
Dutsin Awaki, Niger	Sahara/Sahel	1	Anne Haour	Archaeological (Surface)	Surface collection on undated site	Unknown	
Garbey Kourou, Niger	Sahara/Sahel	1	Sonja Magnavita	Archaeological (Excavated)	Surface collection on undated site	Unknown	Magnavita 2013
Djado (N 61-65bis; R. Mauny), Niger	Sahara/Sahel	1	IFAN	Museum	Surface collection on undated site	Unknown	
Emi Tchouma (N 59-51), Niger	Sahara/Sahel	1	IFAN	Museum	Surface collection on undated site	Unknown	
Kumbi Saleh (SO 45.37), Mauritania	Sahara/Sahel	1	IFAN	Museum	Unknown	Unknown	
Tichitt (MAU 68-85), Mauritania	Sahara/Sahel	1	IFAN	Museum	Unknown	Unknown	
Dioudé Diabé (SEN 66.62), Senegal	Sahara/Sahel	1	IFAN	Museum	Unknown	Unknown	
Kaolack Passy (SEN 05.072), Senegal	Sahara/Sahel	1	IFAN	Museum	Unknown	Unknown	
	Sahara/Sahel	1	IFAN	Museum	Unknown	Unknown	

Sincou Bara (SEN 77.1.38), Senegal Gbegourou, Bénin	Middle Zone	176	Mardjoua Barpougouni	Archaeological (Surface)	Surface collection on undated site	Unknown	
Karfi, Nigeria	Middle Zone Zaria Cluster	44	Abubakar Sule Sani	Archaeological (Surface)	Surface collection on undated site	Unknown	
Niyanpangu-bansu, Bénin	Middle Zone	9	Barpougouni Mardjoua	Archaeological (Excavated)	Three radiocarbon dates (300 ± 30 BP (Beta-384520), 340 ± 30 BP (Beta-384321), 390 ± 30 BP (Beta-384522)) and oral traditions suggest that the occupation of the site falls between the mid-fifteenth and the late seventeenth centuries	Fifteenth to eighteenth centuries	Mardjoua 2016
Karofi, Nigeria	Middle Zone Zaria Cluster	7	Abubakar Sule Sani	Archaeological (Surface)	Surface collection on undated site	Unknown	
Old Faskari, Nigeria	Middle Zone Zaria Cluster	7	Abubakar Sule Sani	Archaeological (Surface)	Surface collection on undated site	Unknown	
Tomboutou, Bénin Crossroads of Empires Cluster	Middle Zone	4	Anne Haour	Archaeological (Excavated)	Associated artefacts suggest a nineteenth century date	Post-eighteenth century	Amoussou <i>et al.</i> 2018; Christie and Haour 2018b
Katsina State, Nigeria	Middle Zone Zaria Cluster	4	Abubakar Sule Sani	Archaeological (Excavated)	Unknown	Unknown	
Kargui, Bénin	Middle Zone Crossroads of Empires Cluster	3	Anne Haour	Archaeological (Excavated)	Two radiocarbon dates: 138 ± 29 BP (OxA-30957) and 168 ± 29 (OxA-30958). Both have inherent uncertainty but correlate with the artefactual evidence to suggest an eighteenth- or nineteenth-century date for the cowries	Post-eighteenth century	Christie and Haour 2018b; Livingstone Smith and Filippini 2018
Tondo windi, Bénin	Middle Zone Crossroads of Empires Cluster	3	Anne Haour	Archaeological (Excavated)	Three radiocarbon dates for this unit — 270 ± 30 BP (Beta-397867), 110 ± 30 BP (Beta 397868), and 200 ± 30 BP (Beta 397869) — give a likely date of the eighteenth or nineteenth century for the context and depth at which the cowries occurred	Post-eighteenth century	Champion and Haour 2018; Christie and Haour 2018b
Gorouberi, Bénin	Middle Zone Crossroads of Empires Cluster	2	Anne Haour	Archaeological (Excavated)	Artefacts and two radiocarbon dates (170 ± 30 BP, Beta-402969, and 100 ± 30 BP, Beta-402970) indicate the shells' likely date	Post-eighteenth century	Christie and Haour 2018b; Nikis <i>et al.</i> 2018a
Boyeri, Bénin	Middle Zone Crossroads of Empires Cluster	2	Anne Haour	Archaeological (Excavated)	Oral tradition and artefacts suggest the nineteenth century	Post-eighteenth century	Christie and Haour 2018b; Nikis <i>et al.</i> 2018b

(Continued)

Table 1. Continued.

Site name	Area and Cluster (where applicable)	Number of cowries	Donor	Context	Chronology	Chronological grouping (see Figure 2)	Key references
Molla, Bénin	Middle Zone Crossroads of Empires Cluster	2	Anne Haour	Archaeological (Excavated)	Artefacts suggest an eighteenth/nineteenth-century date	Post-eighteenth century	Amoussou <i>et al.</i> 2018; Christie and Haour 2018b
Toutokayeri, Bénin	Middle Zone Crossroads of Empires Cluster	2	Anne Haour	Archaeological (Excavated)	Artefacts and oral tradition suggest a nineteenth century date or slightly earlier	Post-eighteenth century	Christie and Haour 2018b; Nikis <i>et al.</i> 2018c
Kanoroba, Ivory Coast	Middle Zone	2	Aïcha Touré	Archaeological (Excavated)	Unknown	Post-eighteenth century	
Rimaye Site 1, Nigeria	Middle Zone Zaria Cluster	2	Abubakar Sule Sani	Archaeological (Excavated)	Not known	Unknown	
Kagalan, Nigeria	Middle Zone	1	Abubakar Sule Sani	Archaeological (Surface)	One of several recovered. Dates of 316 ± 27 BP (OxA-26214) at level 40–60 cm and 667 ± 28 BP (OxA-26215) at level 100–120	Fifteenth to eighteenth centuries	Sule Sani 2013
Bogo Bogo, Bénin	Middle Zone Crossroads of Empires Cluster	1	Anne Haour	Archaeological (Excavated)	Oral tradition and artefacts suggest an eighteenth/nineteenth-century date and three radiocarbon dates (138 ± 83 BP (OxA-x-2605-39), 136 ± 25 BP (OxA-31581) and 129 ± 25 BP (OxA-31582)) agree on a post/mid-seventeenth-century date	Post-eighteenth century	Christie and Haour 2018b; Nikis and Livingstone Smith 2018
Garou, Bénin	Middle Zone Crossroads of Empires Cluster	1	Anne Haour	Archaeological (Excavated)	One radiocarbon date (340 ± 30 BP, Beta-417597) from a layer beneath the find suggests a late fifteenth- to early seventeenth-century date. Material was quite sparse from this trench generally, but an eighteenth-century date seems likely for the cowrie	Fifteenth to eighteenth centuries	Christie and Haour 2018b; Livingstone Smith 2018,
Kompanti, Bénin	Middle Zone Crossroads of Empires Cluster	1	Anne Haour	Archaeological (Excavated)	Artefacts and oral tradition suggest a late nineteenth/early twentieth-century date	Post-eighteenth century	Christie and Haour 2018b; Livingstone Smith and Nikis 2018a
Kozungu, Bénin	Middle Zone Crossroads of Empires Cluster	1	Anne Haour	Archaeological (Excavated)	There are six radiocarbon dates from this unit, at least one of which intrusive, but the remainder agree on a span of AD 1300 to 1650 with the cowrie occurring in layers towards the earlier part of that span. The site was probably abandoned in the seventeenth century	Fifteenth to eighteenth centuries	Christie and Haour 2018b; Livingstone Smith and Nikis 2018bb68

Tin Tin Kanza, Bénin	Middle Zone Crossroads of Empires Cluster	1	Anne Haour	Archaeological (Excavated)	On a site well dated (13 dates) to the late tenth to early fifteenth centuries and from a trench (SII) with three radiocarbon dates all falling within that range. The cowrie is possibly intrusive from a later layer, however	Fifteenth to eighteenth centuries	Christie and Haour 2018b; Khalaf and Haour 2018
Tsamalcu Site, Nigeria	Middle Zone Zaria Cluster	1	Abubakar Sule Sani	Archaeological (Surface)	Surface collection on undated site	Unknown	
Doguéme, Bénin	Forest	213	Inga Merkyte	Archaeological (Excavated)	From a burial, Grave 3, the date of which can be set at the seventeenth/ eighteenth century thanks to the associated European imports, among others a Dutch smoking pipe and glass beads	Fifteenth to eighteenth centuries	Randsborg and Merkyte 2009
Ede-Ile, Nigeria	Forest	134	Akin Ogundiran	Archaeological (Excavated)	Radiocarbon dates place the settlement of the site in the seventeenth and early eighteenth centuries	Fifteenth to eighteenth centuries	Ogundiran 2009
Aukpon (S13-004)	Forest Savè Cluster	34	Andrew Gurstelle	Archaeological (Excavated)	Two dates (225 ± 30 BP (OS-109263) and 240 ± 25 BP (OS-109264)) date this to the eighteenth or early nineteenth centuries	Post-eighteenth century	Gurstelle 2015; Gurstelle <i>et al.</i> 2015
Atenro (S12-035)	Forest Savè Cluster	29	Andrew Gurstelle	Archaeological (Excavated)	Two phases of occupation: Phase I, where three radiocarbon dates (145 ± 25 BP (OS-109260), 240 ± 25 BP (OS-109261) and 1910 ± 25 BP (OS-109262)) and oral tradition suggest seventeenth-century occupation and Phase II, nineteenth century	Post-eighteenth century	Gurstelle 2015; Gurstelle <i>et al.</i> 2015
Igbolo, Bénin	Forest	28	Andrew Gurstelle	Archaeological (Surface)	Artefacts suggest a nineteenth century date	Post-eighteenth century	Gurstelle 2015
Trésor de Foli, Bénin	Forest	25	Inga Merkyte	Archaeological (Excavated)	Undated; within a ceramic vessel encountered during road-building operations	Unknown	
Ijebu Ode, Nigeria	Forest	21	Gérard Chouin	Archaeological (Excavated)	Undated, extracted from an earthwork	Post-eighteenth century	
Fiditi 3 (S12-009)	Forest Savè Cluster	18	Andrew Gurstelle	Archaeological (Surface)	Surface collection on sites (5 m around)	Post-eighteenth century	Gurstelle 2015
Allada (DAH 49.20), Bénin	Forest	14	IFAN	Museum	Unknown	Unknown	
Oke-Atan (Ile-Ife), Nigeria	Forest	14	Gérard Chouin	Archaeological (Excavated)	Possibly a cache	Post-eighteenth century	
Kete Krachi, Ghana	Forest	10	Ernest K. Findoo	Archaeological (Excavated)	Context and artefacts suggest the eighteenth/ nineteenth centuries	Post-eighteenth century	
S12-013, Bénin	Forest Savè Cluster	8	Andrew Gurstelle	Archaeological (Surface)	Surface collections on site (2 m ² , opportunistic)	Post-eighteenth century	Gurstelle 2015

(Continued)

Table 1. Continued.

Site name	Area and Cluster (where applicable)	Number of cowries	Donor	Context	Chronology	Chronological grouping (see Figure 2)	Key references
Esie, Nigeria	Forest	6	Kola Adekola	Archaeological (Excavated)	Cowries occurred within two refuse mounds. Two radiocarbon dates from Refuse Mound 2 relate to the cowries. These are 340 ± 30 BP (Beta-451509) and 520 ± 50 BP (Beta-299369). The two readings suggest a date between the early fourteenth and mid-seventeenth centuries and they were recovered from a greater depth than the cowries	Fifteenth to eighteenth centuries	Aleru and Adekola 2008
S13-010, Bénin	Forest Savè Cluster	5	Andrew Gurstelle	Archaeological (Excavated)	One date of 100 ± 35 BP (OS-109285)	Post-eighteenth century	Gurstelle 2015; Gurstelle <i>et al.</i> 2015
Igboe (S12-037), Bénin	Forest Savè Cluster	4	Andrew Gurstelle	Archaeological (Excavated)	One date, 145 ± 25 BP (OS-109286), thought to be late nineteenth century	Post-eighteenth century	Gurstelle 2015; Gurstelle <i>et al.</i> 2015
Fiditi 4 (S12-012), Bénin	Forest Savè Cluster	4	Andrew Gurstelle	Archaeological (Surface)	Surface collections on sites ($2m^2$, opportunistic)	Post-eighteenth century	Gurstelle 2015
Kpando Kpodzi, Ghana	Forest	3	DAHS	Archaeological (Excavated)	Context and artefacts suggest eighteenth/nineteenth centuries	Post-eighteenth century	Apoth 2014
Abonseay, Ghana	Forest	3	Boachie Ansah	Archaeological (Excavated)	Unknown	Unknown	
S12-014, Bénin	Forest Savè Cluster	2	Andrew Gurstelle	Archaeological (Surface)	Surface collection on site ($2m^2$)	Post-eighteenth century	Gurstelle 2015
Dikosha (Surface), Bénin	Forest	2	Andrew Gurstelle	Archaeological (Surface)	Surface collection. There are two radiocarbon dates for the site, which after calibration span the eleventh to the thirteenth centuries (uncalibrated dates and laboratory numbers not given)	Unknown	Gurstelle <i>et al.</i> 2015
Fiditi 1 (S12-011), Bénin	Forest Savè Cluster	1	Andrew Gurstelle	Archaeological (Surface)	Surface collection on sites (unspecified area)	Post-eighteenth century	Gurstelle 2015
Gorée Island, Senegal	Coastal	69	Ibrahima Thiaw	Archaeological (Excavated)	Artefacts include European imports and likely date to after the eighteenth century	Post-eighteenth century	Thiaw 2011
Osu Castle, Ghana	Coastal	40	Rachel Engmann	Archaeological (Excavated)	Context and artefacts suggest seventeenth/eighteenth centuries	Fifteenth to eighteenth centuries	
Laduku, Ghana	Coastal	30	James Anquandah	Archaeological (Excavated)	Context and artefacts suggest the sixteenth/seventeenth centuries	Fifteenth to eighteenth centuries	
Avloh, Bénin	Coastal	16	Anne Haour	Archaeological (Excavated)	Artefacts suggest the eighteenth century or later	Post-eighteenth century	

Keta, Ghana	Coastal	14	Benedicta Gokah	Archaeological (Excavated)	Unknown	Unknown	
Dakar Sondages, Senegal	Coastal	8	IFAN	Museum	Unknown	Unknown	
Gorée Island, Senegal	Coastal	6	IFAN	Archaeological (Excavated)	Unknown	Unknown	
Elmina, Ghana	Coastal	6	DAHS	Archaeological (Excavated)	Unknown	Post-eighteenth century	De Corse 1992, 2001
Princess Town, Ghana	Coastal	5	Edward Nyarko	Archaeological (Excavated)	Unknown	Unknown	
Lekki, Nigeria	Coastal	5	Raphael Alabi	Archaeological (Excavated)	Artefacts suggest a post-European contact date	Fifteenth to eighteenth centuries	Oseni <i>et al.</i> 2015
Amadzofe, Ghana	Coastal	5	DAHS/Edmund Kodoo	Archaeological (Excavated)	Context and artefacts suggest a date in the eighteenth/nineteenth centuries	Post-eighteenth century	
Hiowiyo, Ghana	Coastal	4	DAHS	Archaeological (Excavated)	Unknown	Fifteenth to eighteenth centuries	Anquandah field notes
Dixcove, Ghana	Coastal	1	Fritz Biveridge	Archaeological (Excavated)	Associated with European imports	Post-eighteenth century	Nii-Adziri Wellington and Biveridge 2014
TOTAL		4,559					

Notes: DAHS = Department of Archaeology and Heritage Studies, University of Ghana-Legon, Ghana. IFAN = Institute Fondamental d'Afrique Noire, Université Cheikh Anta Diop, Dakar, Senegal.

Comparative samples considered

Natural History Museum, London	189	Suzanne Williams / John Taylor	Ecological
Songo Mnara	>859	Stephanie Wynne Jones	Archaeological (Excavated)
308 Coquillages (Zanzibar)	3	IFAN	Museum
Utheemu (Maldives)	>3511		Archaeological (Excavated)

methodology that guided our analysis, involving a consideration of shell species, size and modifications, before moving on to discuss both regional and finer-grained patterns in terms of shell size and species.

Introducing living cowries

Commonly found in low-energy inter-tidal zones in warmer waters, *Monetaria moneta* and *Monetaria annulus* have similar geographical ranges covering large sections of the Indo-Pacific region (Burgess 1970: 342–344; Richmond 1997: 262; Lorenz and Hubert 2000: 204–205). While these ranges are thought to include areas from the Red Sea to Hawaii, historical texts from the medieval period to the nineteenth century insist on identifying the Maldives and East Africa as the source of the cowries shipped to West Africa. In later periods, the Pacific areas may have been important: the collection and sale of cowries in the Philippines is mentioned by a sixteenth-century source and Quiggin (1949: 263) suggests that they were likely exported as far as India and Africa. However, we think it unlikely that they were a major contributor to African imports in earlier times. An origin in the Red Sea or northern Arabian Sea is possible and Lorenz and Huber (2000: 204–205) include these areas within the natural range of these species. However, we have not found much archaeological data to shed light on this. Cowries, of many different species, were of great significance in Ancient Egypt, featuring in well-appointed graves, often in association with beads or other ornaments (see the overview by Kovács 2008: 162–172), but there is much less information relating to later periods, although cowries clearly continued to be important (e.g. Reese 1982 at Quseir al-Qadim). Our study has therefore focused on the Maldives and East Africa.

While both *Monetaria moneta* and *Monetaria annulus* occur in the Maldives and along the East African coast, they are not equally abundant. Ecological surveys along the East African coast (Newton *et al.* 1993: 242–243; Evans *et al.* 1997: 483) highlight a strong dominance of *Monetaria annulus* over *Monetaria moneta*. This was confirmed by our own systematic collections in Tanzania, while our surveys in the Maldives suggest the opposite is true in Maldivian waters (Christie and Haour 2018a). But the provenance of a given cowrie in an archaeological assemblage cannot be assigned based on species alone.

Suggestions have been made over the years that *M. moneta* and *M. annulus* also live along the West African coastline. This is a mistaken understanding. Key conchology texts do not include West Africa within the range of these two species (Burgess 1970: 342–344; Lorenz and Hubert 2000). As suggested by Jackson (1917: 189; map p. 124), Iroko (1987: 54–63) and Lorenz and Hubert (2000: 204), any *M. moneta* or *M. annulus* specimens collected along this coastline likely represent lost cargo from shipwrecks or items dropped while disembarking. Confronting evidence from informants in Cotonou, Bénin, who declared that they collected cowries locally, Iroko (1987: 54–63) noted that, while the shells they showed him were indeed of the species *Monetaria annulus*, they never contained remnants of the live animal. The conclusion is therefore that both *M. annulus* and *M. moneta* recovered on West African shores constitute beach wash.

While *M. moneta* and *M. annulus* do not live on the West African coastline, other cowrie species do, although they are not all equally abundant or common. These are *Trona stercoraria* (Linnaeus 1758), *Luria lurida* (Linnaeus 1758), *Schilderia achatidea* (Gray, in GB Sowerby I 1837), *Zonaria pyrum* (Gmelin 1791), *Z. zonaria* (Gmelin

1791), *Z. sanguinolenta* (Gmelin 1791) and *Z. picta* (Gray 1824) (Table 2). Five of these reportedly occur commonly in environments theoretically readily accessible to human collectors, that is to say inter-tidal or shallow water, but one of these — *Zonaria picta* — is restricted to the Cape Verde Islands. This leaves four key contenders, the distributions of which are shown in Figure 3 and all of which we have identified in West African archaeological assemblages.

Into West Africa: the received wisdom

The presence of *Monetaria annulus* and *Monetaria moneta* in archaeological assemblages is often interpreted in light of historical narratives concerning the chronology and mechanisms of the cowrie trade, sources of supply and species selected (e.g. Hiskett 1966; Johnson 1970; Hogendorn and Johnson 1986; Iroko 1987). In a nutshell, these hold that cowries reached West Africa through two main channels. The first is terrestrial, via the Sahara Desert, with shipments thought to have largely comprised *M. moneta*, presumed to come from the Maldives. The second is maritime, via the Atlantic, thought to involve a higher dominance of *M. annulus* and presumed to have been sourced from the East African coast. At present, there is no conclusive evidence of an east-west route across Sahelian Africa (a matter discussed in the context of cowries by Hiskett 1966: 347–351).

A chronological distinction is also implicit in this geographical division. As the Atlantic trade is associated with European contact from the fifteenth century AD, the presence of *Monetaria annulus* is considered evidence of a relatively late date while *Monetaria moneta* suggests earlier contacts. York (1972) has pursued this suggestion to assess its archaeological correlates in Ghana. Johnson (1970: 42) speaks of the ‘watershed’ or ‘divide’ between northern (Saharan) and southern (coastal) networks; she and Jan Hogendorn envisage an ‘intermediate area where tenuous links were maintained between the two main zones along the major trade routes’ (Hogendorn and Johnson 1986: 105–106). Similarly, Hiskett (1966: 357) believes that the medieval cowrie currency area of the Sahara hardly extended south of the Niger River, while Iroko (1987: 366) has suggested that in at least parts of the middle belt of West Africa, between the seventeenth and eighteenth centuries, both types of cowrie circulated equally, although they were scarcer than on the coast and on the Niger Bend. Archaeological work is the only source of data that can enable us to assess these hypotheses, since historical sources are non-existent for many parts of this forest and savanna area until the late eighteenth or even late nineteenth centuries.

Table 2. Range, accessibility and abundance of shells occurring along the West African coast (after Lorenz and Hubert 2000: 51–52, 80–81, 107, 112–115).

Species	Range	Accessibility	Abundance
<i>Luria lurida</i>	Morocco to Angola	Inter-tidal to 150 m deep	Common
<i>Schilderia achatidea</i>	Spain/Portugal to Gabon	15–150 m deep	Moderately common
<i>Trona stercoraria</i>	Senegal to Angola	Inter-tidal	Common
<i>Zonaria picta</i>	Cape Verde	Inter-tidal	Uncommon
<i>Zonaria pyrum</i>	Mediterranean to Ghana	15–50 m deep	Common
<i>Zonaria sanguinolenta</i>	Senegambia	Shallow water to 25 m deep	Uncommon
<i>Zonaria zonaria</i>	Mauritania to Angola	Inter-tidal to 40 m deep	Common

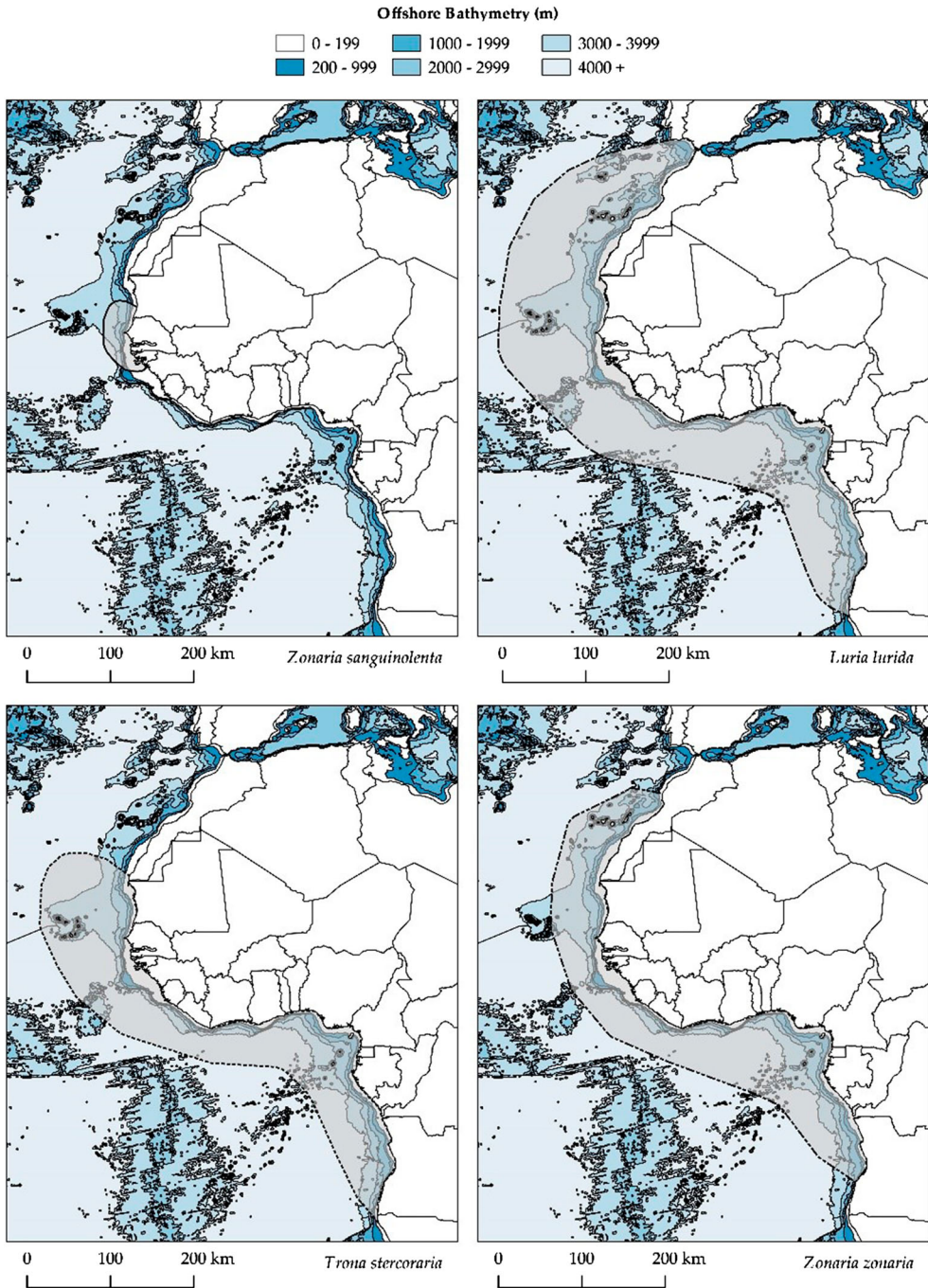


Figure 3. Geographical range of four common West African cowrie species: *Zonaria sanguinolenta*, *Luria lurida*, *Trona stercoraria* and *Z. zonaria*.

This twofold model is based on a number of historical sources.

The early historical information relating to the spread of cowries through trans-Saharan routes comes mainly from North African and Middle Eastern sources. The first

mention of the use of cowries in Sub-Saharan Africa appears to date to the late tenth or early eleventh centuries, when the author of the *Akhbar al-zaman*, writing in Egypt, reports that they were used as ornaments in women's hair (Levtzion and Hopkins 2000: 35). In the eleventh century, al-Bakri states that cowries were among the most sought-after commodities in a place called Kugha (Levtzion and Hopkins 2000: 83). In the first half of the fourteenth century, al Umari described cowries as currency in Kanem and as a currency and an import on which vast profits were made in Takrur (Levtzion and Hopkins 2000: 260, 269). But while these sources provide useful insight into the nature of the cowrie trade and the use of cowries in Sub-Saharan Africa, they are disparate, as well as silent regarding the use of shells further south, in the forested areas.

The question of the occurrence of imported cowries in the forest and coastal regions of West Africa prior to the Atlantic trade is interesting. The existence of a local shell currency in Benin City, Nigeria, possibly involving cowries, prior to European contact has long been discussed (Hogendorn and Johnson 1986). Ogundiran's (2002: 437–438) suggestion that cowries were present in the Yoruba world, though in small numbers and primarily employed in ritual contexts, is based on cowrie-shaped reliefs on ceramic vessels from Ife issued from twelfth to fifteenth century archaeological contexts (Garlake 1974: 136, Figure 8:3, 1977: 88). Cowries, as well as copper and glass beads, would presumably have reached Ife through trans-Saharan trade routes. That Ife had wide-ranging trade connections is not in doubt, given the widespread distribution of dichroic blue glass beads thought to have been made there (Merkyte and Randsborg 2009; Gurstelle 2015; Babalola *et al.* 2017). The assumption is that the cowries themselves have not survived in the early archaeological record. This taphonomic argument has also been made in the case of the tenth-century site of Igbo-Ukwu, for example. Given the extraordinary range of items at this site — including thousands of beads — the excavator, Thurstan Shaw (1977: 86), wrote that it was 'difficult to know just how to evaluate the absence of cowries'. He suggested that either soil conditions were not conducive to the survival of these shells or they were simply not used in this area. At Benin City, Connah (1975: 220) proposed that the condition of the few cowries recovered in excavation 'was so poor as strongly to suggest that specimens in earlier deposits may normally have been completely dissolved by the soil'. Remarkably, however, five cowries were excavated in three separate features at the Benin Museum site in contexts totally devoid of European imports (Connah 1975: 34; Table 1). At the present state of understanding, these appear to predate European contact and therefore remain tantalising.

Once European traders become involved, an additional body of historical information becomes available which, though patchy, is relatively plentiful. The use of cowries is especially well documented along the Bight of Benin. The first major shipment of Maldivian *Monetaria moneta* cowries into West Africa via the Atlantic reportedly arrived in Benin City via Lisbon in 1515 (Hogendorn and Johnson 1986; Ogundiran 2002). From then on, the use of cowries, especially as a currency, is thought to have spread, so that by the end of the sixteenth century they had been adopted in Allada and were spreading to the Yoruba hinterlands (Figure 4).

The data relating to the regions now in Bénin and Nigeria have been particularly well discussed. Ogundiran (2002) highlights that cowries were by far the dominant import to the Bight of Benin during the period 1650–1880 and were widely established as local currency for commercial and social payments. Cowries were intricately tied to the slave trade

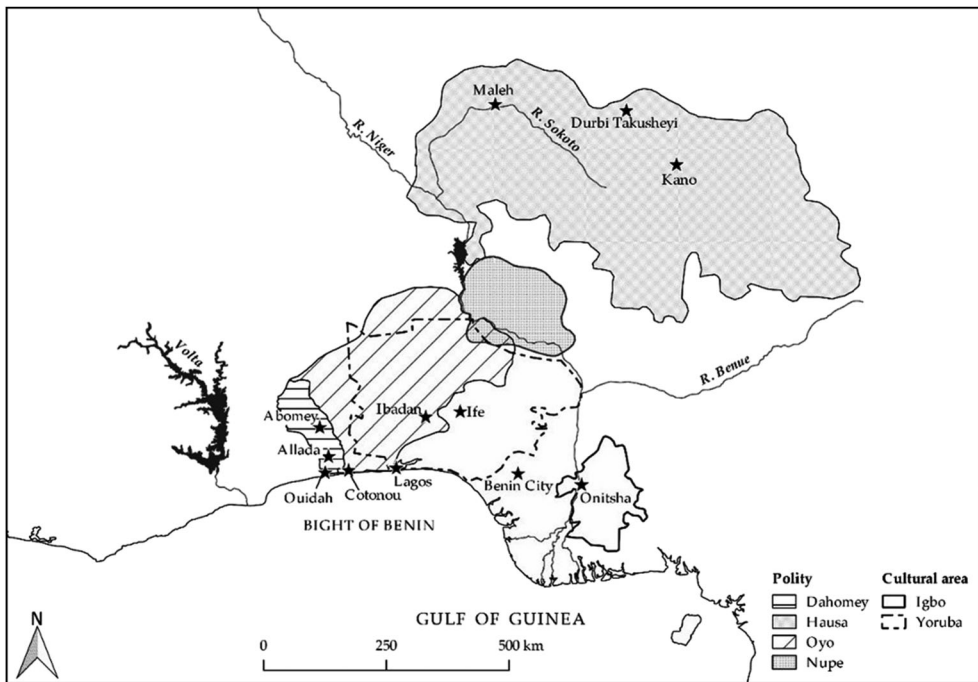


Figure 4. Places and polities relevant to the spread of the use of cowries, sixteenth to nineteenth centuries.

to the New World and Hogendorn and Johnson (1986) suggest that the eighteenth-century peak in the slave trade was a major reason for cowrie imports also reaching record levels then. It is thought that Ouidah was probably the greatest importer of cowries at that point (Hogendorn and Johnson 1986: 113; and on the archaeological dimension of this, see Kelly 2009). Cowries, textiles and European goods were shipped north from the coast against slaves, livestock, salt, textiles and other goods (Lovejoy 1974). By then, it is suggested that cowries had become very common in the Central Sudan (roughly southern Niger and northern Nigeria today), to the extent that the *Kano Chronicle* (mistakenly) reports that this was the time of their initial introduction to the Hausa area (Lovejoy 1974: 567). Hogendorn and Johnson (1986: 104–105) follow Hiskett (1966: 355) in suggesting that this may indicate an intensification of exchanges of slaves for cowries between Kano and the coast.

Thus far, the story is thought to have concerned *Monetaria moneta* shells. But by the early nineteenth century cowries are reported as being in heavy demand at settlements such as Ouidah, Ardrah (Allada) and Lagos, from where they were sent to Dahomey, Oyo, Hausa and ‘into the very heart of North Africa’ (John Adams cited in Hogendorn and Johnson 1986: 107–108). This demand came in time to be met by the introduction of the ‘slightly larger East African cowries’ (Lovejoy 1974: 575). An experimental introduction to Ouidah of *M. annulus* cowries from the East African coast was attempted by Hamburg-based traders in 1845 and proved acceptable to local palm oil traders (Hogendorn and Johnson 1986: 74). By the 1890s, suggest Hogendorn and Johnson (1986), most of the cowries used in Togo and in Yoruba country were of the *M. annulus* species. Some

areas refused them; one trader west of the Volta recalled a shipment being thrown into the sea and in Igbo country east of the Niger, apart from in the town of Onitsha itself, these larger cowries apparently never penetrated (Hogendorn and Johnson 1986: 75–76).

The idea of an introduction of *Monetaria annulus* in 1845 is, of course, too neat. It seems that Atlantic shipments had often been mixed: John Barbot in 1682 described a lot at Ardrah (Allada) that consisted of different-sized cowries, although the large ones were, admittedly, a minority (Hogendorn and Johnson 1986: 113). By the early eighteenth century any large cowries were recognised as being lower in value than the smaller sort; for example, the Dutch are known to have been importing cowries from Mozambique in the second part of the eighteenth century at half the value of the smaller cowries reported to come from the Maldives (Hogendorn and Johnson 1986: 114). *M. annulus* is also present in small numbers in assemblages that were likely sourced in the Maldives and were clearly associated with the trans-Saharan routes. For instance, the cowrie load from the eleventh/twelfth-century abandoned caravan load of Ma'den Ijafen, also known as Blad al-Wuda ('the place of the cowries'), lying in an isolated tract of the Mauritanian Sahara, contained *M. annulus* and other Indo-Pacific cowries among the much more numerous *M. moneta* (Monod 1969; Christie and Haour 2018a; Figure 5).

Useful though they certainly are, historical sources can nonetheless be quite unreliable on essential facts. For example, the assumption, informed by an uncritical acceptance of the writings of North African and Middle Eastern observers, that cowries were introduced into West Africa as part of the expansion of Islamic trans-Saharan trade routes, is challenged by the archaeological site of Kissi in northern Burkina Faso where deposits were dated from the fifth to seventh centuries AD (Magnavita 2015). Despite likely predating trans-Saharan Islamic networks, these funerary contexts yielded six cowries, all *M. moneta*, associated with other material culture including brass jewellery, weapons and glass beads. These shells had been modified and are thought to have been attached



Figure 5. Cowries from the Ma'den Ijafen assemblage (MAU 67-151). The bulk of the cowries are visible on the right-hand side, arranged in terms of the size categories defined in the text. At left are other shell species, including a small number of *Monetaria annulus* individuals, as well as the fibre bags that are thought to have contained the load.

to the rim of a headpiece. Similarly, the *Kano Chronicle*'s assertion that cowries only reached that city (and by extension, the wider Hausa area) in the eighteenth century (Johnson 1970: 33) is wrong. Cowries occur archaeologically much earlier, notably at Durbi Takusheyi near Katsina (fourteenth/fifteenth centuries, Gronenborn 2011) and at Maleh, near Sokoto, in possible sixteenth-century contexts (Obayemi 1977).

Additionally, overviews of the spread of cowries into West Africa have generally applied principles of formal economic anthropology, with a rather narrow time depth and little consideration of the social creation of value. The work of Hogendorn and Johnson (1986) and Karl Polanyi, who popularised cowries as a 'primitive currency' in pre-colonial Dahomey, involving central issue and regulated importation (see Şaul 2004), are examples of this. However, while economic history has often considered the uncertainties in long-distance trade as logistical and symptomatic of pre-modern conditions, recent currents in economic anthropology have pointed out the importance of studying people and their behaviour as well as the rules of the market (Forrest and Haour 2018). In recognition of this, our study of cowries in West Africa has been framed around the consideration of how past West African communities procured, valued and modified these shells.

Examining the archaeological story: methodology

Our first-hand assessment of 4559 cowries from 78 sites involved a visual and microscopic assessment to record condition, species and size and any evidence for anthropogenic modification. Sample size in many of the assemblages we assessed, particularly for earlier periods, is small, representing five or fewer shells.

Species

Shell species was determined based on both dorsal and ventral shell morphology (Christie and Haour 2018b: 208, Table 21.2; Christie *et al.* submitted). Cowries that could not be identified to species were recorded as *Cypraea* spp.

Size

The length, width and, where possible, height of shells were measured using digital callipers. In the subsequent analysis, in order to enable a comparative approach shells were grouped into four size categories. These were: extra small shells (length <10 mm), small (10–15 mm), medium (15–20 mm) and large (>20 mm). We developed these categories during our work on the 3433 shells from the Ma'den Ijafen (Christie and Haour 2018a). Large assemblages allow us to study size distributions reliably; the Ma'den Ijafen is very unusual in its scale, but we complemented it with a study of shells from natural history collections. This allowed us to identify significant patterns (Figure 6). The Maldivian ecological and archaeological assemblages of both *M. annulus* and *M. moneta* tend to include a higher proportion of small and medium shells (Figure 6, bars 1–2 and 5–6), whereas the East African archaeological and ecological assemblages of both species feature a higher proportion of medium and large shells (Figure 6, bars 3–4 and 7–8). Importantly, the differences in the sizes of cowries of Maldivian and East African origin remain apparent even when *M. annulus* and *M. moneta* are combined (Figure 6, bars 9–12). This is

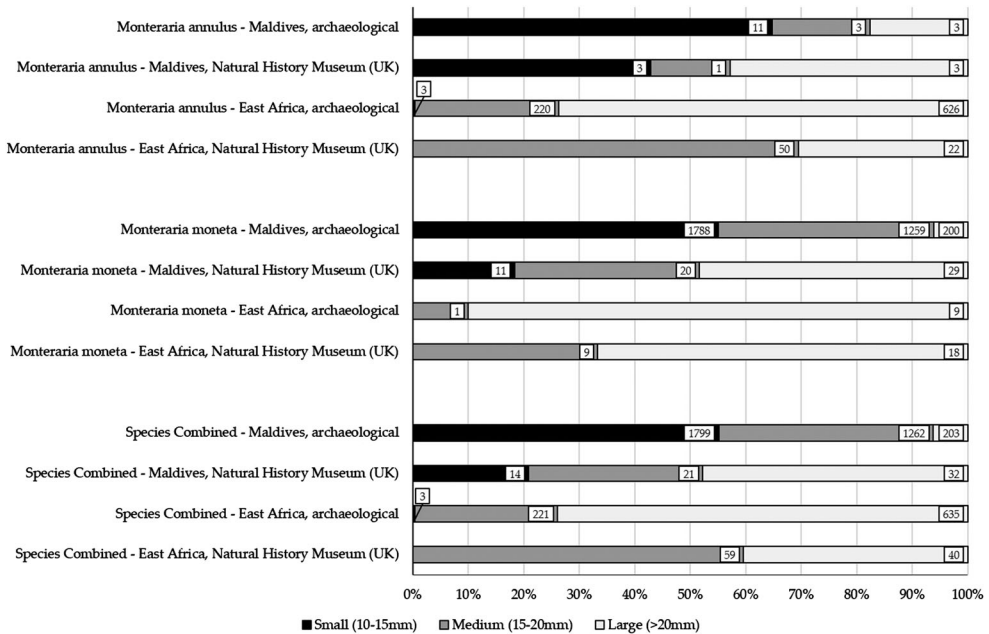


Figure 6. Size of cowrie shells from archaeological and ecological collections in the Maldives and East Africa. The top chart shows *Monetaria annulus*, the middle one *Monetaria moneta* and the lower combines the two species.

significant in methodological terms: many archaeological sites only yield small assemblages of cowrie shells and may include a mixture of *M. annulus* and *M. moneta*. The fact that shell size is indicative of provenance regardless of species allows us to combine data from both species and thus opens up a greater number of sites for study.

Modifications

We examined shells microscopically to evaluate whether any modification noted was likely to be anthropogenic or natural in origin, determine whether there was any evidence of use-wear and, where possible, identify the modification process involved (Christie *et al.* [submitted](#)). Interpretation was based on experimentation and ethnographic observations.

Within the wider literature, information on modification techniques and guidance for the analysis of use-wear on cowrie shells are surprisingly limited. York (1972), following his study of cowries from Ghanaian assemblages, proposed three methods of modification: grinding, chipping and piercing. Ground cowries were observed to have a flat, smooth surface, whereas chipped cowries featured a more rugged hole. Piercing was not used to remove the dorsum, but rather to create a small hole at one or both ends. York (1972: 100) also suggested that backing tended to be restricted to *M. moneta* specimens, with the majority of *M. annulus* and native West African cowries remaining unmodified. Francis (1987) conducted experimental work to investigate shell bead manufacture. He proposed that the most efficient means by which to remove a cowrie's dorsum was to combine hammering and grinding with a basalt stone (Francis 1987: 29); this could be seen to be a combination of the chipping and grinding methods proposed by York (1972: 96).

Most recently, Heath (2017) classified cowries from nineteenth-century deposits from Saco in the Abomey region, Republic of Bénin (Monroe 2011), into three categories potentially reflecting different modification processes. Shells from Group 1 were characterised by a large rugged dorsal hole, which Heath (2017: 63) suggests could have been created by chipping. Group 2, on the other hand, comprised shells with a smoother, straighter and smaller dorsal hole that Heath attributes to the shell having been ground. Shells in the final category (Group 3) featured a straight or smoothed dorsal hole with a 'keyhole' shape. This could not be attributed to a particular process. Our own research has identified at least four modification processes, suggesting a greater diversity in perforation technique and distribution than hitherto supposed (Christie *et al.* submitted).

Patterns and findings

Species

Species was identified in 98.1% (N = 4538) of the total assemblage (N = 4559) with the remaining shells (N = 21) classified as *Cypraea* spp. West African species were only present in small numbers, accounting for just 1.9% (N = 86) of the total assemblage assessed. These were primarily recovered from later period (post-fifteenth century) coastal sites in Ghana and Senegal (Figure 7) and in most cases were under-represented compared to *Monetaria moneta* and *Monetaria annulus*. At most sites where West African species were present *Zonaria zonaria* and *Luria lurida* were the most common. Osu Castle presented a contrasting case: here the assemblage was dominated by *Trona stercoraria* (N = 23 of 28 locally occurring species). Reflecting the limited geographical range of the species (see Figure 3), *Zonaria sanguinolenta* was only found in assemblages from Gorée Island, Senegal.

In all cases, the West African species were worn and pitted, in some cases showing evidence of boring or fouling by other marine organisms and/or abrasion damage resulting from wave action. This suggests that, rather than being collected alive, these shells were gathered dead from the shoreline. While this supports York's (1972: 94–95) suggestion that West African cowrie species were collected from the shores in Ghana and other parts of the Gulf of Guinea, we reject his subsequent interpretation that these shells could have been misidentified by users and therefore 'pass as currency' (York 1972: 95). Unlike beach-washed shells, cowries that are collected alive and subsequently processed maintain their shiny, lustrous colouring, making them highly attractive. Reflecting on the variance in value between live-collected and beach-washed shells, Hogendorn and Johnson (1986) remarked that in recent historical times only 'live' Maldive specimens commanded a high value in long-distance trade networks. Johnson (1970: 19) remarked that in West Africa beach-washed *Monetaria moneta* shells 'were of course useless for ornamental purposes, and in some places were not acceptable as currency, or commanded a lower price'. In light of this, we believe it unlikely that beach-washed West African species that are morphologically and visually different to both *M. moneta* or *M. annulus* would have been considered acceptable.

We observe, too, a notable absence of West African cowries at inland sites (Figure 7). This may suggest that they were not traded very widely. It could imply these species were

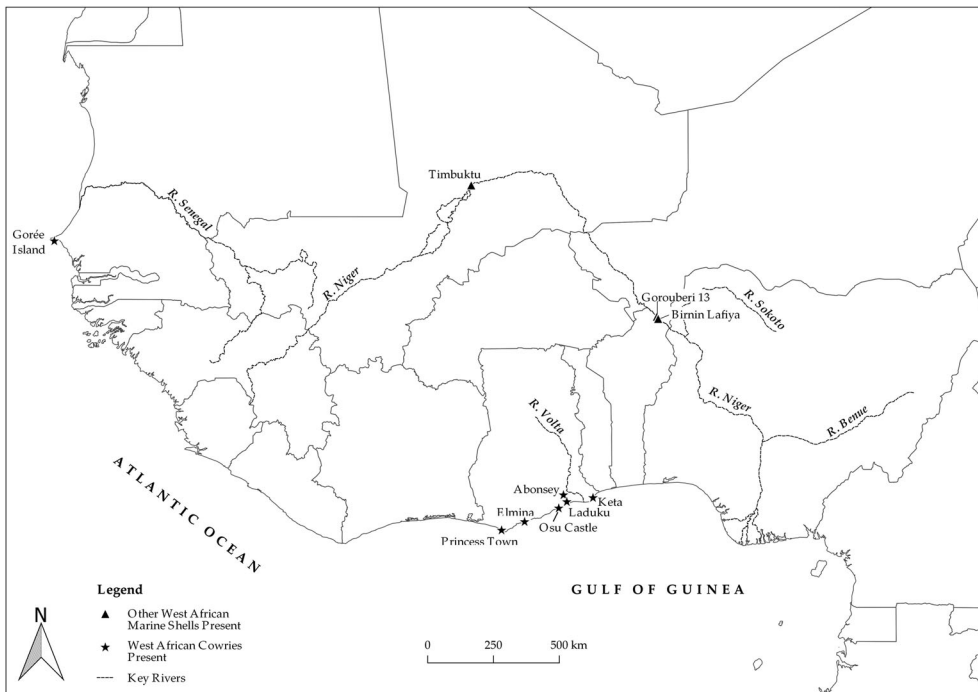


Figure 7. Sites featuring cowries native to West Africa and other marine shells.

less desirable amongst inland communities in earlier periods, highlighting the fact that specific shells were valued differently in different places. This poor representation may, however, also be the result of sampling bias. Observations made as part of this study suggest that even at coastal sites West African cowrie species are often included in faunal assemblages and bagged and stored separately. Indo-Pacific species, on the other hand, tend to be treated as small finds (Figure 8). Thus, whatever the region concerned, it is possible that West African species are under-represented.

While it is clear that several of the West African cowrie species — notably *Trona stercoraria*, *Luria lurida*, *Zonaria zonaria* and *Zonaria sanguinolenta* — were collected and used at coastal sites in West Africa, little research has been carried out thus far on their significance and usage. A notable exception to this is Iroko's monumental work (1987). He comments, for example, that in the Yoruba pantheon Aje Shalaga, the divinity of prosperity and riches, holds huge reserves of *Monetaria annulus* and *Monetaria moneta*, but has as an emblem *Trona stercoraria*. In at least some communities of the Republic of Bénin shoreline, *T. stercoraria* is used in rituals associated with protective divinities and *L. lurida* is seen as being connected with spirits of the sea (Haour field notes 2018). Interestingly, recent archaeological work by one of us (AH) in this area, on the island of Avloh, indicated that these native shells were absent from the archaeological record, whereas *M. annulus* and *M. moneta* were present.

While West African cowries were not present at inland sites, other West African marine shells were definitely being brought into these areas. The best-documented example is that of the *Marginella* (Lamarck 1799) species that have been recovered at a number of inland sites; Mauny (1957) suggested that these mainly occur at places



Figure 8. A drawer from the main exhibition room at the Institut Fondamental d'Afrique Noire (IFAN), Dakar, Senegal, showing how cowries are often classed as small finds. The test tubes contain beads but also cowries, here from Kania (SO 55.20), Kumbi Saleh (SO 45.37) and Allada (DAH 49.20) in Mali, Mauritania and Bénin respectively.

that he describes as trading settlements. A well-known case is that of Timbuktu in Mali¹ where historical accounts report the use of *Marginella* shells for some time during the eighteenth century, when war or insecurity may have cut off cowrie trade routes (Mauny 1957: 668; Hogendorn and Johnson 1986: 18). Oral traditions referring to a late eighteenth-century episode when the town chief ordered that all such shells be buried and only cowries be used have found confirmation in the archaeological record (Insoll 2002; Milner 2002). *Marginella* shells can be collected on inter-tidal zones from Mauritania to Senegambia and Mauny (1957: 666) suggests that they were likely sourced in coastal Mauritania. It is also notable that four marine bivalves were retrieved at Birnin Lafiya and Gorouberi-13, two medieval period sites in the north of the Republic of Bénin, 800 km from the ocean (Figure 7). Cowries, whether West African or Indo-Pacific in origin, are absent at these sites (Linseele and Wouters 2018). The only cowries so far recovered in excavations in this region are *Monetaria annulus* and *M. moneta* but they only occur in much later horizons.

To evaluate regional and chronological trends in species abundance in more detail, we grouped assemblages in terms of region and period. We divided sites into four regional groupings: Sahara/Sahel, Forest, Coast and Middle Zone (Table 1). We then split them into five chronological categories: unknown date, earlier than the twelfth century AD, twelfth to fifteenth centuries, fifteenth to eighteenth centuries and post-eighteenth century.

Considering chronological variations on a site-specific scale, and bearing in mind that 49 of the 78 sites we studied are of known date, it seems that *Monetaria moneta* is more abundant at earlier sites, while *Monetaria annulus* is more abundant at later sites (Figure 9). While this could, in light of the historical narratives, be considered indicative

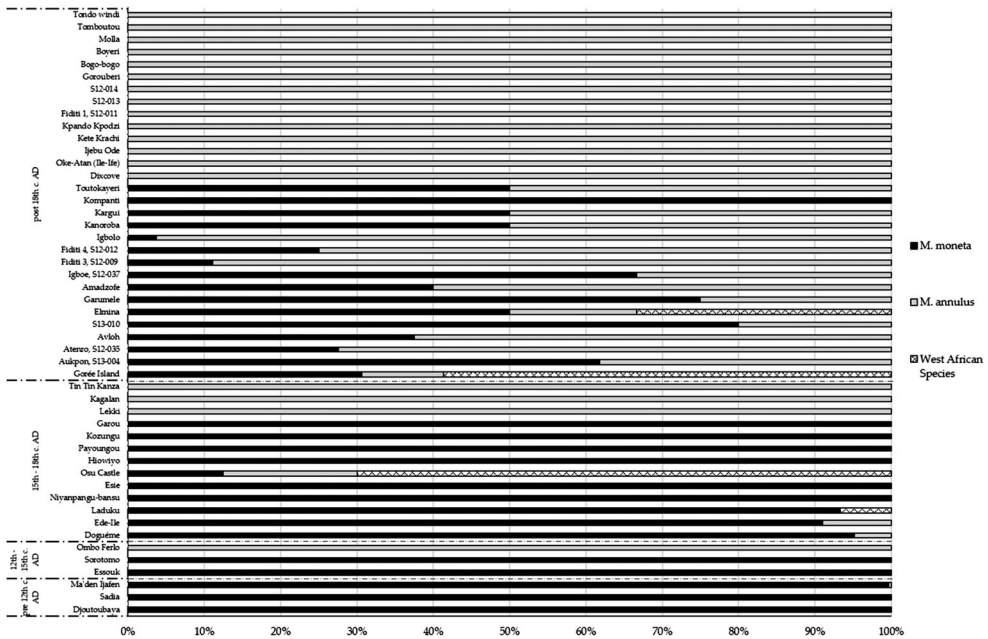


Figure 9. Distribution of cowrie species from all 49 dated sites analysed in this study.

of different trade mechanisms and species preferences, it is also possible that it reflects regional variation. As shown in Figure 2, many of the earlier assemblages were recovered from sites inland (the Sahelian and Saharan assemblages that we assessed yielded some of the earliest cowries), whereas many of the later assemblages were from Middle Zone, Forest or Coastal sites.

When sites are grouped by region and date, additional patterns emerge (Figure 10).

Monetaria annulus in the Forest, Coastal and Middle Zone assemblages shows an increasing abundance over time. In the Sahara/Sahel region, its occurrence is slightly earlier as it was recorded in very small numbers ($N = 10$, cf. $N = 3224$ *M. moneta*) in the Ma'den Ijafen assemblage. As one might expect, *M. moneta* dominates the assemblages from the Sahara/Sahel region, accounting for over 70% of the assemblages in each period. Given the date and geographical situation of sites in this region, the inference would be that these shells were linked into the trans-Saharan networks. However, while it might be expected that relatively recent Coastal assemblages would feature a higher dominance of *M. annulus*, reflecting the proximity to Atlantic trade routes reportedly bringing in East African *M. annulus*, in fact we found that West African species are more dominant at these sites.

The assemblages from the Middle Zone and Forest regions show a greater variability in species. In the Middle Zone there is a clear dominance of *M. annulus* in post-eighteenth-century and undated (largely surface) contexts, with *M. moneta* more dominant in earlier (fifteenth- to eighteenth-century) assemblages. In the Forest region, while *M. annulus* gains dominance in the post eighteenth-century group, *M. moneta* accounts for a higher proportion of the shells from undated contexts.

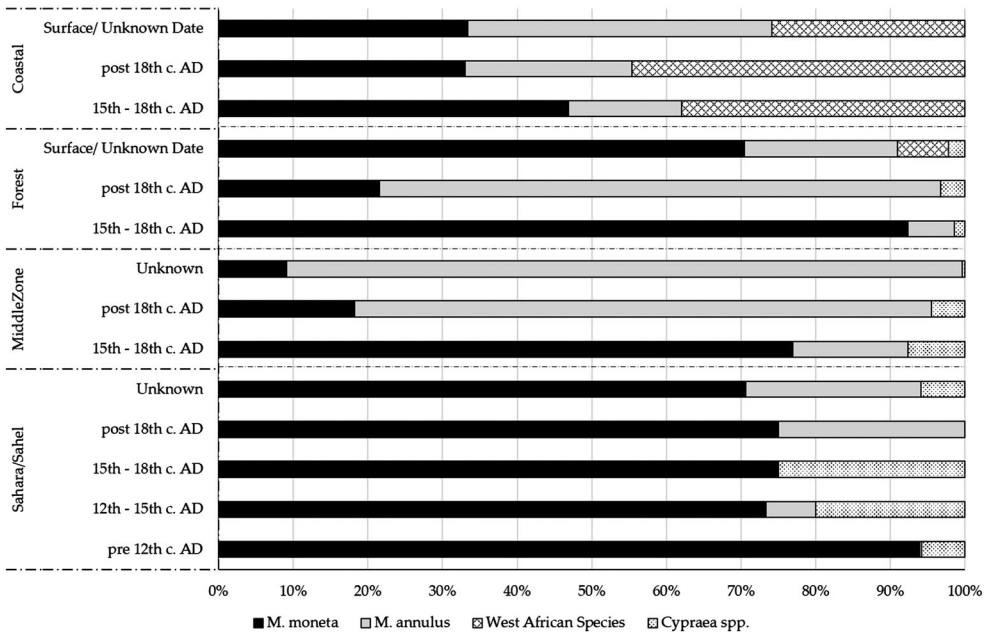


Figure 10. Regional and chronological variations in species abundance based on all 78 sites studied grouped by region and period.

Size

We were able to determine size for 86.6% ($N = 3948$) of all the shells we recorded; the remaining specimens were too fragmented to measure accurately. Small and medium shells were in the majority overall, representing 45.8% ($N = 2090$) and 33% ($N = 1505$) respectively. Medium and large shells were more dominant if Ma'den Ijafen was excluded, with small, medium and large shells representing 17.8% ($N = 157$), 48.1% ($N = 425$) and 34.1% ($N = 301$) respectively.

As noted above, in larger assemblages of over ten measurable shells the proportions of different shell sizes can provide insight into shell provenance (Figure 6). Few sites met this standard. Although 16 sites and the three site clusters (Crossroads of Empires, Savè and Zaria) provided an assemblage of more than ten specimens, just 12 sites, and the three site clusters, yielded assemblages of over 10 shells sufficiently well preserved to be reliably measured (Figure 11). To consider regional and chronological trends we therefore grouped sites by region and period in order to achieve sufficiently large assemblages of measured shells (Figure 12).

Assemblages from Saharan/Sahelian sites up to the fifteenth century are characterised by a high proportion of small and medium shells, with only a few large specimens. This is consistent with an origin in the Maldives. The proportion of large shells is higher in later assemblages and those that are undated (even though small and medium shells remain the majority). This may suggest that shells from at least some of the sites within that grouping may have been sourced from East Africa.

The assemblages from coastal sites do not have a very wide chronological spread: most of these sites postdate the eighteenth century and in many cases cowries were found in association with European pottery and other European imports such as pipe fragments.

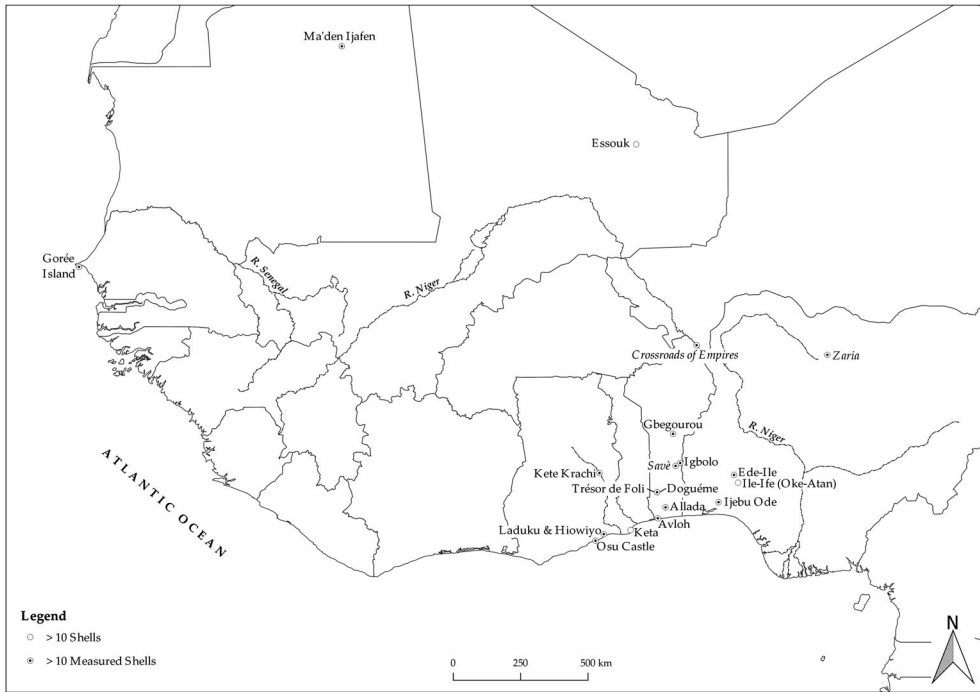


Figure 11. Sites studied: assemblages featuring 10 or more shells.

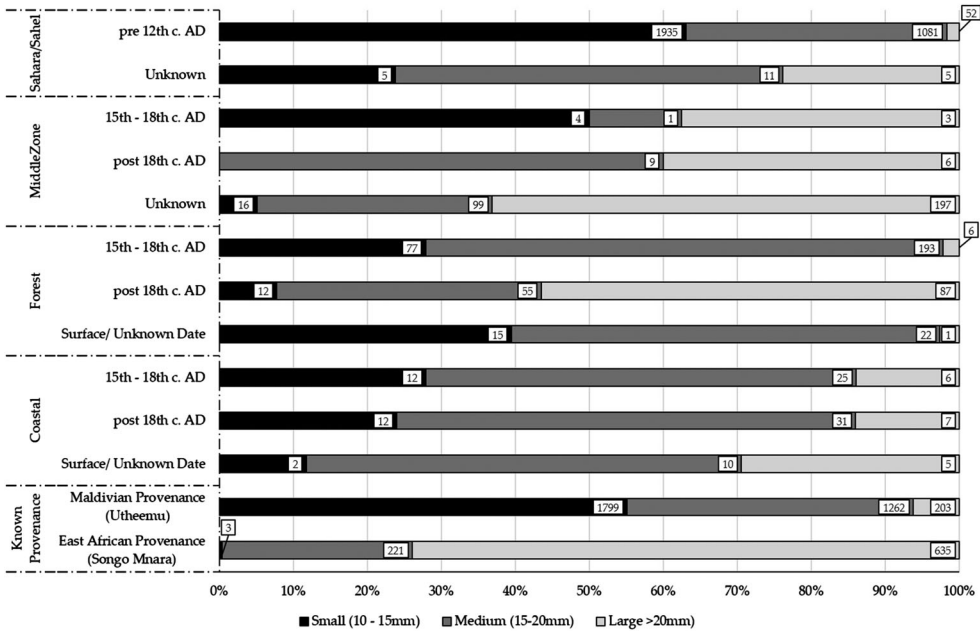


Figure 12. Regional and chronological variations in proportion of shell size from 73 sites. Five sites have been excluded as they returned too few measurable shells. These are Essouk, Ombo Ferlo, Sorotomo (Sahara/Sahel, twelfth to fifteenth centuries); Payoungou (Sahara/Sahel, fifteenth to eighteenth centuries) and Garumele (Sahara/Sahel, post-eighteenth century).

As a general picture, the cowries and other material culture suggest that communities living at these sites were engaged with the Atlantic trade and missionary activity. This observation is supported by shell size profiles that are generally consistent with shells sourced from East Africa.

As for the Forest area, while the high proportion of small and medium shells in the fifteenth- to eighteenth-century assemblages is consistent with a Maldivian provenance, large specimens become more dominant in later periods; this size distribution is more consistent with East African materials. A similar pattern can be observed for assemblages in the Middle Zone. Thus, while the patterns observed in the Sahara/Sahel and coastal regions would seem to support historical narratives concerning the source and likely trade mechanisms for these shells, involving trans-Saharan and Atlantic trade networks respectively, sites in the Middle Zone and Forest areas appear to have participated in both networks. A good illustration of this is given by a subset of Forest sites situated in the southern parts of modern Nigeria and Bénin ([Figure 13](#)). These assemblages stand out for their frequently large sample size, the relative geographical proximity of the sites (they are within 300 kilometres of one another) and their similar age: all seemingly fall between the late seventeenth and early twentieth centuries. Crucially, all also seem to tie into the history of the major polities of Oyo and Dahomey and their changing involvement in Atlantic trade networks. The total number of shells from these 14 sites is 526. This group allows a focused study of the ways in which cowrie exchange networks may have unfolded and met in the region between coast and desert.

What we note here is that where one might expect consistency between these sites they are instead marked by variability.

The large Doguème and Ede-Ile assemblages show a size distribution pattern consistent with a source in the Maldives. In contrast, assemblages from Igbolo, Ijebu Ode and the Savè Cluster show a size distribution that resembles East African rather than Maldivian material. At the time period concerned, Indo-Pacific cowries could have reached West Africa equally easily through Saharan and Atlantic networks and the competition between these routes is well documented for early colonial times. The data provided by our study of archaeologically-recovered cowries suggest a longer time-depth for the trade routes linking the coast to the West African interior, well documented for the nineteenth century, but much less so for earlier periods. Indeed, historical clues also suggest that parts of northern Bénin were long connected with southern areas, specifically the Yoruba world. Gosselain and Haour (2018: 300) suggest that this part of the Niger River Valley was involved in slave trading with the Atlantic coast as early as the eighteenth century; local traditions relating to the fishing of cowries from the Niger River may reflect this now-forgotten trade. Future work is needed to clarify the nature and timing of inter-regional connections in this area.

Modification

Although anthropogenically modified cowries occurred in most of the assemblages assessed, unmodified or naturally damaged shells are far more common, suggesting that shells were brought unmodified into West Africa. Strong support for this notion comes from the very large Ma'den Ijafen assemblage, in which 94% of the shells were unmodified (Christie and Haour 2018a). Four forms of modification were observed: complete removal

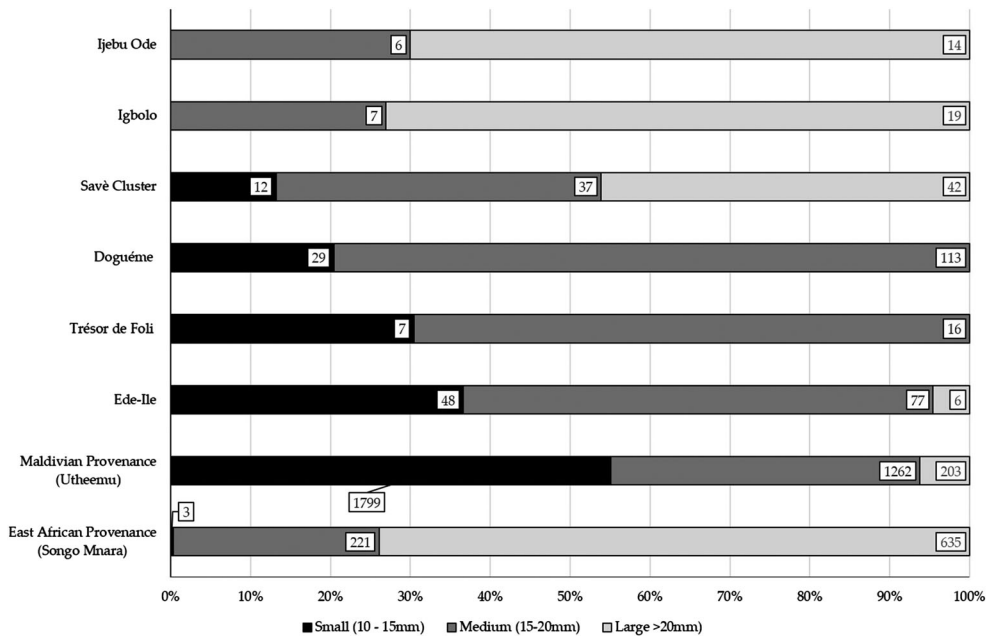


Figure 13. Size of shells on a site-by-site basis for sites linked to Oyo and Dahomey (see also Figure 4 for a map of the extent of these polities). Three sites from this cultural sphere have been excluded as they returned too few measurable shells, namely: Esie (fifteenth to eighteenth centuries), Oke-Atan (post-eighteenth century) and Dikosha (Unknown). The Savè cluster sites (third bar) comprise Fiditi 1, 3 and 4, S12-014, Aukpon, Aterro, S12-013, S13-010 and Igboe.

of the dorsum (the most common occurrence), partial removal of the dorsum, burning (which is more likely to reflect depositional or post depositional taphonomy than anthropogenic modification) and linear incisions around the aperture (Christie and Haour 2018b, Figure 21.4), the purpose of which remains unclear. York (1972: 100) had suggested that *Monetaria moneta* were most likely to be modified, but our analysis indicates that *M. moneta* and *M. annulus* were equally likely to be modified. At this stage, there does not seem to be any regional or chronological patterns. It is noteworthy, however, that West African species were generally unmodified or showed merely natural damage. Of the 86 West African cowries we assessed, only two were modified deliberately.

A few regional notes can be added here.

Given the importance attributed to trans-Saharan routes in medieval and early modern times, reported cowrie finds from these areas are of obvious interest. We have already mentioned above the site of Ma'den Ijafen, which, due to its remarkable depositional context, has proved fundamental in understanding the movement of items in the early part of the second millennium. A key feature of this eleventh/twelfth-century collection is its similarity to broadly contemporaneous Maldivian hoards in terms of shell size, species representation and degree of shell modification (Christie and Haour 2018a). Other Saharan sites, including places lying on the trans-Saharan route north of Bilma (Berthoud and Lange 1972; Haour 2017 and references therein), are unexcavated but assumed to be of medieval age. These Saharan collections constitute mixed assemblages



Figure 14. Collection from Tegahza (MAL 44.11). Several collections were carried out over the years at Tegahza, a town in Mali described by a number of Middle Eastern and North African authors, reputedly built of salt and conquered by Moroccan Saadian forces in the late sixteenth century (Monod 1938; Mauny 1967: 116–117; Monod 1975: 704). We were only able to locate and assess one of them at IFAN, made over a hundred years ago (see Mauny 1967: 117). This shows the eclectic nature of the material sampled by early collectors. This particular assemblage was collected in 1914. The accession record reads ‘Collection du Lt Bougrat. 1 jeton de Nuremberg. Verroteries. Fragments de cuivre. Balle de plomb. Coquillages marins. Fragments de [illegible, page torn]’.

(Figure 14) and — due to the minimal information available from accession records — are difficult to interpret. As far as we are aware, only the glass bracelet fragments have been discussed (Mauny 1967; Monod 1975).²

A very different picture emerges from the site of Essouk, at the southern fringe of the Sahara. Here, excavations by Sam Nixon (2017) recovered nine cowries, mainly *Monetaria moneta*, the majority derived from a single unit, EK-A. Their relatively limited occurrence at this well-studied site suggests they are not a consistent background presence, unlike glass beads for example; as such they are interpreted as examples of ‘incidental loss during trade’ (Nixon 2017: 217).

Conclusion

Our discussion has drawn on a range of sites from West Africa. The picture is necessarily only partial, dictated by the availability of assemblages for us to study. Moreover, particularly for earlier periods, sample sizes in many assemblages are small. It may be that shells from earlier periods are less well preserved, perhaps fragmented, and therefore more difficult to identify as cowries; or that such shells had greater value and were therefore scarcer, curated longer or less likely to have been deposited. Indeed, it is noteworthy that many of the cowrie assemblages from earlier period sites come from caches or grave contexts.

The general picture is that the results obtained from our study of cowries seem to support the narrative proposed in historical and ethnographic sources. Ecological data on habitat preferences of the two key Indo-Pacific species confirm that while both have

a wide geographical spread, *Monetaria moneta* dominates in the Maldives and *Monetaria annulus* on the East African coast. However, concluding from this that archaeology unequivocally supports historically driven models would be hasty. The archaeological data are patchy and differing trajectories of research in various parts of West Africa make comparisons challenging. While Posnansky and McIntosh (1976) once warned that the archaeology of Sahelian regions was marred by an overemphasis on historical sources, years later Chouin (2013: 45) estimated that Sahelian archaeology had succeeded in establishing a discourse on the history of human occupation and that the wooded savanna areas now lag behind (on this, see also Casey 2010). One result, directly impacting on our study of cowries, has been a poor chronological parity in the assemblages, with the earlier sites largely lying inland while sites of later date are mainly on the coast.

We have advanced the idea here that shell size can be used as a means of provenancing shells, but this should be seen within the context of certain limitations: size is a more effective criterion for larger assemblages. In an ideal world, we would dispose of assemblages that include a sufficient number of shells — perhaps 100 — so that hypotheses can be credible. In practice, however, given the small size of most assemblages recovered archaeologically it may be necessary to settle for 25 or even, as in the case of the present paper, 10 shells. Further work will determine whether isotopic markers might be used for provenancing. In the immediate, however, comparative analysis relies on consistent data collection. By viewing shells as a collective, regional and, to a lesser extent, chronological trends in species selection and modification can be sought out.

One risk in using cowrie shells in archaeological reconstructions is a tendency to circularity in arguments. Not unreasonably, cowries are taken as evidence of long-distance connections. But using these shells to uphold chronological assessments is unwarranted. For example, inferring from the presence of *M. annulus* that a site is late in date and must have had Atlantic trade connections is problematic. *M. annulus* may well occur more commonly naturally in East Africa, but these shells also live in the Maldives and were part of shipments of shells coming in through trans-Saharan trade networks. Equally, Maldivian shells were shipped through Atlantic trade networks over centuries and quite how far they may have travelled inland remains an open question. Essentially, cowrie shells should be considered in conjunction with other material culture; they should not be used as a single strand of evidence for connections or chronology. Trade systems were complex, with various goods likely travelling along different networks, and the co-occurrence of shells with other items of material culture will be important factors.

It may be an obvious statement, but things, be they cowries or anything else, never travelled without human agency. Choices were made about which type of shell was acceptable or desirable. Moreover, the question of the use of native, West African, species requires further work. Ethnographic evidence suggests that they, like imported *M. moneta* and *M. annulus* shells, were used in a variety of socially complex situations.

Notes

1. While researching the collections at IFAN we were able to examine some of the shells issued from Monod's collection of *Marginella* shells at Timbuktu. We located 15 shells, bearing no accession number but recorded as '306. Coquillages marins (*Marginella amygdala*, originaire des côtes de la Mauritanie et servant de monnaie à l'intérieur). Provenant de Tombouctou

(Th Monod 71 spécimens)', as well as the assemblage accessioned SO 44.12, labelled 'Coll. Th. Monod, coquillages marins (monnaie), *Marginella amygdala* ...' [rest illegible]. This latter assemblage is mentioned by Mauny (1957), who states that they were part of a collection of 10,000 shells recovered by Monod in Timbuktu in May 1935. The collection entitled '306. Coquillages marins' appears to us to belong with this set.

2. In particular, those from Emi Madama (NIG 59-50), Guezebi (N 59.52), Emi Tchouma (N 59-51) and Djado (N 49-253 and N 61-65bis) (Monod 1975: 705; Figures 72 and 74).

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