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'The Spirit of the Plant':

Exotic Ethnopharmacopeia Among Healers in Accra, Ghana

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Abstract

Despite the vast literature on healing in African contexts, comparatively little is known about historical use of popular species in herbal medicines. Given the prominence of plants in healers' assemblages past and present, the lack of attention to plant origins, how practitioners acquire them, and to beliefs surrounding these processes, is surprising. This study, at the interface between archaeology and anthropology, approaches these issues through qualitative interviews and an ethnopharmacological survey with thirty healing specialists in a migrant community in Accra, Ghana. Over two seasons of fieldwork in 2010 and 2011, 141 unique plant-based medicines were documented, with samples of all constituent ingredients collected and botanically identified. Analysis of the ethnopharmacological results revealed 15 percent of species in the sample were botanically 'exotic': introduced, non-local plants found outside their native distributional range. Given that healers typically define their medicines as 'traditional and ancestral', such 'exotic' provenance is significant. This paper uses ethnography to explore contemporary assimilation of exotic plants at herbal markets, and in the beliefs and practices of individual healers. Drawing on historic and archaeological sources, these findings are used interpretively to broaden possible perspectives on introduction of new plants within the materia medica of West Africa over time.

Introduction

In Madina, a migrant district of Accra, Ghana, a father and son, Chief Adamu of the Chamba people and teenage Maliki, lay out small, carefully arranged portions of herbs in two neat rows. For Adamu, a *mai-magani* (medicine-man), these are his primary tools-in-trade, his eleven medicines of 'karfie (strength). While I set up my audio recorder, Adamu explained that that morning we would discuss the purposes of each:

You are not born with medicine. I learned a little at a time as I travelled. Everything had to be explained. They showed me how to control the medicine. Not just one healer, many people. But experience is the key. After learning, this is what I add to that which I was taught, experience. When I am sick, I apply the medicine and I watch to see if it works. All the medicines I show you today – I know their head and the legs of them.

Image 1 shows the eleven plant parts as they were arranged that morning. To me as a researcher, this image and the subsequent dialogue around it marked an understated, but significant, moment of personal epiphany in the field. Seamlessly intermingled amongst the eight indigenous species are parts of three plants originally native to distant environments. To Adamu, who knew the 'head and the legs of them' (that is to say, their uses in theory and in practice), they are naturalised elements within West African pharmacopeia. However, their historic foreignness in the African context is made apparent by their familiarity to Western audiences: chilli pepper, ginger, and garlic, immediately recognisable. It was at this moment, when Adamu laid out these medicines, that my interest in what was to become the

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topic of this paper – the place of non-local substances as naturalised elements within indigenous healing repertoires – was sparked.



Image 1. Eleven medicines of 'karfie (strength) as described by Adamu [from top left to bottom right]: (1) *Musuru/Agebia*; (2) *Chimba* (seeds); (3) *Ezemgbe-bia*; (4) *Kanafuru*; (5) Chilli peppers; (6) *Kokalawe*; (7) *Prekese* seed; (8) *Oowa-magane* – 'the mother of medicine'; (9) Ginger; (10) Garlic; (11) *Djan-mia/djan-yaazi* – 'men's pepper'.

The paper's structure follows the path of that enquiry. It begins by outlining the ethnographic fieldwork and theoretical interpretive approach framing the project, and then contextualises both the impetus for the study and the research setting itself. The role of the market as a conduit and catalyst for assimilation of botanically exotic plant species is considered prior to detailing specific examples of exotics in the *Madina zongo* pharmacopeia. These contemporary findings are then interpreted, first through ethnographic

narratives concerning medicinal use of such species in the study area, and then in light of historic evidence of introduction of these plants to the region since the fourteenth century. With these specific species and themes of medico-religious practices linking past and present narratives, broader perspectives on processes whereby non-local plants may have been incorporated within African pharmacopeia are explored.

Fieldwork and Interpretive Approach

As an archaeologist seeking to understand the materiality of West African healing in the past, my frustration with the limits of existing sources (Insoll 2011: 145) prompted engagement with contemporary African medicine specialists. These engagements were structured within the theoretical frameworks of archaeological ethnography, which centre round concerns with materiality and temporality, and encourage work on the intersection between disciplines (Hamilakis 2011: 399). Borrowing from Martin Heidegger's hermeneutic phenomenological approach, Chris Tilley (2004: 16) locates the value of such fieldwork in the opportunities it presents for unexpected encounters. Epistemologically, the process of ethnographically 'being there' stimulates new lines of enquiry and unfamiliar paths through familiar territory, as the researcher, acquainted with the relevant subject literature, finds initial understandings overturned. Often, investigation turns on the slow hunch; we are unable to pinpoint when our feet (or our thoughts) first begin to follow a fresh path, but here a trajectory of research may clearly be drawn from Adamu's two neatly ordered rows of herbs.

In this paper, I attempt to weave together a multi-temporal explanation of the observed assimilation of historically botanically-exotic species, or what

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Clifford Geertz (1973: 25) would have defined as an 'interpretive sortie' approach, telling the story of both these herbs and a personal research journey. To do this, I use contemporary ethnography to find alternate interpretive possibilities on limited historic and archaeological sources related to West African herbalism. Gardner (2012: 25) establishes a Geertzian sortie as tracing an explanation of observations gained by immersion in the culture in question, whilst acknowledging other lines of analysis are certainly possible. Geertz (1973: 25, 29) defined cultural analysis as a disconnected yet coherent sequence of sorties into the unknown, as intrinsically incomplete, and as a science that raises further questions the more deeply one goes into the ethnographic. Given the subjective nature of such an approach and the limited evidence currently available, this paper does not seek to offer definitive arguments. Rather, its intention is to broaden interpretive perspectives.

The directions of interpretive anthropology, from which this approach emerges, have been critiqued, particularly the tendency towards evocation and interpretation, rather than description and explanation (Lee 1991: 350). This paper attempts to balance those limitations, whilst broadening interpretive perspectives on the materiality of West African indigenous medicine, past and present. In light of this aim, the paper suggests that indicating possibilities has a value in itself, particularly where alternate sources are rare, given a lack of attention to the materiality of African medicine in existing anthropological literature (Morris 2011: 245). This direction shares features with the *longue durée* approach in that it is diachronic, temporally ambitious (by ethnographic standards), and interdisciplinary (McMahon 2006: xv), although these are characteristic of much historical archaeological work (Posnansky and DeCorse 1986: 1–2). The paper does not align itself with the *longue durée* of the French Annalists

(e.g. Bloch 1953; Braudel 1969; Febvre 1973), which has been rightly criticised for notions of timelessness and the abstraction of actors from their context (Armitage 2012: 496). However, it does borrow from the recent rapprochement between intellectual history and the *longue durée*, in that the narratives developed are transtemporal and are advanced via a method of contextualism, which is synchronic, as well as diachronic (Armitage 2012: 497).

Interpretively, this paper is thus concerned with particular moments from contemporary fieldwork, as well as with reflections from this upon evolution and change over the longer temporal sequences of interest to archaeologists. Put simply: the article traces potential analogies between ethnographic and historic evidence concerning recurrent use of specific plant species in local medical cultures along the West African coast. The term 'analogy' is used carefully here, given the epistemological and ethical-political criticisms it has received in the past (Fabian 1983; Wylie 1985; Fewster 2001). Within this theoretical framework are sketched the stories of Madina's medicine plants, both as contemporary goods exchanged across the markets of West Africa and historically as foreign crops introduced by Arab and European contacts.

Roots of the Study

First though, let us step back analytically to provide some personal context.¹ My research seeks to expand understandings of various aspects of the indigenous West African healers' role: exploring the ways therapeutic practices shape, and are shaped by, their lived spaces; the artefact assemblages structuring and supporting these practices; and the substances and medicines through which they communicate well-being to others. As an archaeologist by training, contemporary (and often unexpected) encounters presented an opportunity to broaden my perspectives on the kind of interpretive issues to think about when considering evidence of the search for healing in the past. A guiding principle was achieving a 'thick text' approach to describing therapeutic materiality, whilst moving beyond abstracted, reductionist analogical frameworks (Insoll 2011: 162). To place the study within broader recent trends, it is part of a growing body of archaeological research recognising the need for richly contextualised considerations of medicine provision in sub-Saharan Africa (Esterhuysen 2008; Apoh and Gavua 2010; Insoll 2011: 145–146). These works reengage with the voices of contemporary healing specialists to contribute ethnographic narratives and case studies, adding nuance to interpretive possibilities concerning residues of related activities.

Fieldwork was conducted over two years between September to November 2010 and 2011 in Ghana's capital, Accra. With a predominantly Muslim migrant population, the Madina community's heterogeneous medical culture

¹ This article is drawn from a broader PhD thesis entitled 'The Healer's Tools: A Study of Material Assemblages amongst Healing Practitioners in Ghana and their Archaeological Implications' and based on research funded by a University of Manchester Humanities Scholarship and the Royal Anthropological Institute. See also, Trevelyan James (2014; forthcoming).

presented a microcosm encompassing a diversity of healing traditions and cosmologies from across West Africa. Supported by contacts at the University of Ghana, Legon, including Dr Ben Kankpeyeng and Elvis Aboluah, the project expanded in an attempt to reflect this range of expertise. It eventually included over thirty specialist interlocutors, from various types of healers to their young apprentices, medicine stall holders, gatherers of plants and animals, and secretive shrine keepers. This paper focuses on the position of non-African or exotic species within indigenous pharmacopeia. The term 'indigenous medicine' is used here in the manner of Kankpeyeng, Nkumbaan and Insoll (2011: 205) to distinguish African medicinal practices.

Contextualising the Setting

Around half of Accra's residents are migrants, either from rural Ghana or neighbouring countries (Van Andel *et al.* 2012: 2). Many settle in Madina, a rapidly expanding sub-urban settlement in the Accra plains ten miles north-east of Accra on the Dodowa road (Zaami 2010: 5). The majority of this settlement's 76,000 population patronise indigenous healers who offer affordable, accessible, and culturally appropriate alternatives to Western biomedicine² (Peil and Opoku 1994: 219). Most of these practitioners live and operate within one particular ward, Madina zongo ('the stranger's quarter') where communal demand for African medical culture is greatest (Peil and Opoku 1994: 220). This type of migrant district is characteristic of West African urban centres (Kobo 2010: 71), which historically have been sites for

² For an account of how biomedicine is reappropriated in Ghana, see Dorney (2014).

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segregating new arrivals from established urban populaces (Curtin 1984: 38–59).

Mabogunje, taking a research overview of West African urbanism, concludes that originally this territorial ethnic separation was not the product of deliberate policy by African rulers, 'but of the exigencies of migration history' (1990: 129). Under colonialism, however, European colonial governments formally institutionalised and, indeed, designated *zongo* zones (Cohen 1969). This reflected colonial preoccupations of the time which, for diverse reasons, preferred to maintain internal differentiation among the African population (Mabogunje 1990: 129). A consequence of early colonial attempts in cities to maintain ethnic distinctions has been its opposite effect: the coalescing of common identities among new arrivals. Across Ghana's *zongo*, these common identities centre round Islam as a religion and unifying cosmology (Peil 1979: 126), and Hausa as both a shared language and source of cultural capital (Brenner and Last 1985: 437). Hausa refers to both an ethno-linguistic group originating from Northern Nigeria and a Chadic language spoken across West Africa, particularly by Islamised peoples. In Madina, Hausa notions of physiology and well-being provide a shared framework structuring the mosaic of local healing beliefs (Wall 1988; Abdallah 1997). However, it is *zongo* living that provides the shared grounds for understanding and assimilation of the diverse medical cultures brought to the city by contemporary migrants (Abdallah 1997; Last 2004).

Assimilation of goods, as well as people, has an extensive history along the Gold Coast. Part of a nexus of West African trade routes, trans-Saharan caravans travelled here for several millennia before European caravels arrived in the fifteenth century (Moseley 1992: 523). The region has long been a remote but persistent part of world economies, an inclusion reflected in

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import and adoption of foreign plant species (Alpern 1992: 13). Whilst the advent of 'mercantilist' Atlantic trade in the seventeenth century and the destructive forces of slavery had a regressive effect on this (Moseley 1992: 523), among Ghanaian groups like the Akan, Ga, or Ashanti, distinct cultural phenomena, including ethnopharmacopeia, remained widely practiced (Konadu 2007: 5–6). Retention of these cultural practices is characterised by both continuities and changes (DeCorse 2001: 192), an issue investigated in a closing historical case study.

This paper thus couples primary ethnography from the *zongo* with analysis of ethnobotanical, historical, and anthropological evidence to develop the argument that West African pharmacopeia have temporally been a field enriched by transmissions both regionally and globally. The agents facilitating this are not only the medicine men, but also the medicine traders and suppliers, who in contemporary Accra are predominantly female. These interconnections stimulate both the merging of distinct regional herbal traditions, and provide the context for adaptation of outside influences. As such, it is at the market that we start.

Markets as Conduits and Catalysts

The market together with the *zongo*, which it often adjoins, is a feature common to West African urban centres and has proven value as a site for investigating diversity in medical cultures (e.g. Oliver-Bever 1983; Nevadomsky 1988; Taylor and Fox 1992). The decision to broaden the study out of healers' workspaces into the markets was instigated by the project's participants. Throughout interviews, practitioners frequently directed me towards the specialist medicine suppliers' section of the Timber Market in

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James Town, a southern portion of Accra, and one of the largest sites of its kind in Ghana. Recommendations were often tempered by cautions concerning the dangers such a place, as a source of powerful substances, posed to both the spirit and the wallet of the unwary. Many weekends were spent sitting with a particular stall holder, Alhaja, and her assistant Mercy, cataloguing the seemingly endless contents and watching the comings and goings.

Historically, West Africa has had a high population density, concentrated settlements, and well-developed trade routes (Van Andel *et al* 2012: 1). In this context, medicinal substances have been and continue to be high value, high-demand goods (Van der Geest and Reynolds Whyte 1989). As the centres of such trade, markets are a social location in which the meanings and uses of medicines are negotiated by social actors. Various studies demonstrate the historic and contemporary role of markets in linking indigenous practitioners to local, regional, and trans-national networks of substance exchange (Van der Geest and Reynolds Whyte 1989). These include Nevadomsky's (1988: 75) work on Benin's *kwemin-kwemin* ('anything and everything') stalls, Taylor and Fox's (1992: 119–125) account of suppliers in Togo, and Edwards' (2003: 208–213) on the *marabaga* (animal-parts) trade in Mali.

Aside from serving as conduits for domestic and imported goods, these markets are also sites for categorising materials within local cosmologies. In Bamako, Mali, Edwards' (2003) analysis of assemblages at the 'fetish market' and Insoll's (2010) on the adjoining mosque market, demonstrate how imported materials become incorporated within specific fields of a medical culture through the agency of traders. One could hypothesise a similar process in the past, as accounts from the fourteenth century onwards by

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travellers such as Ibn Battuta, Barth, and Clapperton contain vivid accounts of markets as conduits for goods, and traders as catalysts for exchange (Thomas 1908: 106; Hodder 1965: 99; Hill 1966: 297). Konadu (2007: 31) notes that historically, systems of medicine in West Africa have been a rich field of dialogue and exchange, particularly at long-established market sites. I argue there is a continuity to this discourse and that it can be observed both in the herbal practices of healers like Adamu, and amongst the bustle of the markets. Here the search for well-being exists as an on-going, living cultural process offering a potential interpretive window onto related activities in the past, as a brief anecdote may illustrate.

One Sunday started with excitement among the female traders at the Timber Market when an elderly man arrived touting what he called simply a 'Japanese herb'. Japanese medicine has a special place in Accra thanks to the mythic status of scientist Hideyo Noguchi. A Nobel Prize nominated bacteriologist, in 1928 Hideyo Noguchi set up a lab on the Gold Coast to research yellow fever of which sadly, and somewhat ironically, he promptly died. Today, in part due to Japanese investment in Accra and medical research facilities bearing his name, Hideyo has been accepted as a kind of folk hero (Kita 2005). Thanks to this association, the unknown leaves caught the attention of Alhaja, who upon enquiring was told by the man that he had grown the plant using seeds his son purchased from the internet, believing that they were good for hypertension.³ Despite this limited description, the market women quickly purchased his entire bundle. Many customers were observed to buy the fresh leaves on recommendation throughout the day,

³ Later identification of a sample proved it was indeed a popular Japanese species: *Camellia sinensis* (Theaceae).

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the assumption being that they ought to be prepared as a simple infusion, the typical method used for delicate leaves.

The interconnection between substances and actors here began with a supplier with a deep interest in healing, bringing a new plant to the attention of the market traders. These traders, given their entrepreneurial skills, saw the opportunity to profit from this new leaf and gave it a supporting narrative linked to its exotic provenance. Those practitioners who bought bundles, in turn disseminate it to clients in the communities they serve. This exchange illustrates the ready acceptance of novelty among those involved in Accra's indigenous medicine culture. In this case, the herb referenced Japan; other plants had narratives linking them to Mecca, the sacred centre of Islam, or to rural northern Ghana, where the savannah-bushland medicines are deemed particularly powerful. It also emphasises the interconnected role of suppliers, traders and practitioners in acquisition of new elements and arbitrating access of substances into the local medical culture (see Image 2). The following sections consider the ways in which assimilation of plants into ethnopharmacopeia is guided by local practices.



Image 2. Market women, arbitrators of quality, select only the freshest wraps of leaves from a herb gatherer's bundle for sale on their stalls at the James Town Timber Market, Accra.

Identifying Exotics in a *Zongo* Pharmacopeia

The old man's Japanese herb is an example of an 'exotic species'. Exotic species here means exotic in the botanical sense: introduced, non-local plants found outside their native distributional range, which have arrived there by human activity (Alpern 1992: 13). Botanically exotic species may be brought into Accra or grown locally; it is original geographic provenance that distinguishes between local and exotic flora. Many botanically exotic species, imported from the fourteenth century onwards, are naturalised and found

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side by side with African plants in the market, whilst others, such as chillies, are referred to as exotics by knowledgeable actors. Prominent exotics in Madina are highlighted red in Figure 1. Similar mergings were apparent throughout Madina's heterogeneous, migrant medical culture; actors are introduced to a new aspect of medical craft and then, under their individual conditions, this acquired knowledge is put into practice (Gosselain 2011: 212). Union or reconciliation of diverse practices and systems of herbalist knowledge was evident in the connections and contradictions amongst the range of substances utilised by indigenous healers. Like the markets, the *zongo* pharmacopeia thus encompassed plants, minerals, animal parts, and products sourced from distinct ecological zones across West Africa, and indeed the world.

Applications	Scientific Name	Family	Common Name (Eng.)
5	<i>Aframomum melegueta</i>	(Zingiberaceae)	Alligator pepper
	<i>Khaya senegalensis</i>	(Meliaceae)	African mahogany
	<i>Zingiber officinale</i>	(Zingiberaceae)	Ginger
4	<i>Annona senegalensis</i> var. <i>senegalensis</i>	(Annonaceae)	Wild custard apple
	<i>Monodora myristica</i>	(Annonaceae)	Calabash nutmeg
	<i>Pericopsis laxiflora</i> (<i>Afrormosia laxiflora</i>)	(Fabaceae)	Satin wood
	<i>Phyllanthus amarus</i>	(Euphorbiaceae)	Sleeping plant
	<i>Physostigma venenosum</i>	(Fabaceae)	Calabar bean/Ordeal bean

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3	<i>Acacia nilotica</i>	(Mimosaceae)	Gum Arabic tree
	<i>Capsicum frutescens</i>	(Solanaceae)	Birdseye chilli
	<i>Cinnamomum zeylanicum</i>	(Lauraceae)	Cinnamon
	<i>Citrus aurantifolia</i>	(Rutaceae)	Key lime
	<i>Dialium guineense</i>	(Fabaceae)	Velvet tamarind
	<i>Ocimum gratissimum</i>	(Labiatae)	African basil
	<i>Parkia biglobosa</i>	(Mimosaceae)	African locust bean tree
	<i>Piper guineense</i>	(Piperaceae)	West African black pepper
	<i>Sarcocephalus latifolius</i>	(Rubiaceae)	African peach
	<i>Tetrapleura tetraptera</i>	(Fabaceae)	Aidan tree
	<i>Theobroma cacao</i>	(Sterculiaceae)	Cocoa tree
	<i>Vitellaria paradoxa</i> (<i>Butyrospermum paradoxum</i> ssp. <i>Parkii</i>)	(Sapotaceae)	Shea tree

Figure 1. The twenty most common medicine plants in Madina. Species highlighted in red are exotics, whilst species in blue are those sold in greatest bulk at Ghanaian markets (Van Andel et al. 2012).

As part of an ethnopharmacological survey of Madina's medical culture, 141 individual plant-based medicines were documented, and samples of all constituent ingredients collected and botanically identified.⁴ The twenty most

⁴ Samples were collected by author, whereas botanical identifications were provided by Mr Daniel Abbiw, retired curator of the University of Ghana herbarium.

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commonly used species in Madina are shown in the accompanying table; four of these are exotic, indicating the proportional importance of non-local plants. Many of these twenty cannot be gathered in the Madina locality, particularly those species from migrants' home regions restricted to different ecological zones, which leads to practitioners acquiring them instead from the James Town Timber Market. Healers' reliance upon traders is underscored by the relationship between this study's findings concerning the most common medicinal ingredients in Madina and Van Andel *et al.* (2012) quantitative survey of the species sold at Ghanaian herbal markets. Five of the key multi-purpose plants in Madina were found to be species amongst those sold in greatest bulk by suppliers studied by Van Andel *et al.* (these are highlighted blue in Figure 1).

Analysis of the twenty most frequently used species in the Madina pharmacopeia indicates that: (1) Exotic species are a significant proportion of the medicinal plants used; (2) The market is an important site for acquisition of, and hence making sense of, healing resources. The contemporary importance of such exotics is further indicated by the fact that they make up 15 percent of the total number of unique species identified in the herbal medicines of Madina. The fourteen most frequently identified exotic species in recurrent order were: lime, ginger, tamarind, cinnamon, hot pepper, garlic, clove, star apple, coconut, physic nut, cassava, tobacco, avocado, and sugarcane. Many of these common names will be recognisable to the reader, this familiarity perhaps partly conditioning the seeming invisibility of such substances to European academics studying West Africa.

Anthropologies of Assimilation

Temporally though, can a relationship be suggested between these contemporary findings and past evidence of West African encounters with exotic species? Certainly, David Parkin has described the use of medicines from 'outside' as 'long-standing features stemming from the pre-colonial era' (1968: 424). Across a range of West African cosmologies, the increasingly 'different' – be it based upon cultural or geographic distance, unfamiliar physical attributes, or some arbitrary distinction – may be regarded as increasingly supernatural, mythical, and powerful, potentially stimulating adoption of outside elements (e.g. Colson 1966: 222; Frankenberg and Leeson 1976: 253; Rekdal 1999: 459). This concept, however, remains poorly understood from a materialist perspective. In contemporary Madina, the most revered substances in powerful spiritual medicines are ascribed alien origins by interlocutors, whether real or not, as a necessary characteristic and essential attribute of their efficacy. Consider, for example, this short passage from one interview with *mad'ori* (bone-setter) Omar, when asked how his knowledge of powerful plants had developed beyond cures for purely bodily ailments:

Al-jene troubled my daughter for years... When my daughter's leg was shattered in a road accident, they caused the hospital put her in plaster, but the *al-jene* would not let it heal and the skin began to rot. I feared she would lose her leg and stayed up several nights praying to Allah. Eventually, I slept one morning and in a dream saw myself go out to the gardens in Legon [botanical garden] and gather a strange leaf and then how to prepare it. I knew the dream was good, so I went to the bush there and found the leaf and made the medicine. It was

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strong; the *al-jene* could not penetrate it, so my daughter healed. Since then, I have received other dreams, and this is why I can heal.

Other healers, discussing origins of substances they considered especially efficacious or suited for cases unresponsive to more usual methods, often pointed to perceived rarity and foreign provenance. One morning, as I was arriving at 'Baba' [father] Yahaya's – a *mai-jinya* (spirit-man) of wide repute in the district – he revealed just such a substance: a soft, brown resin purportedly from Mecca, which he had previously mentioned as powerful when used in charms against witches. Purchased from a recent pilgrim, who had partly funded his travel through this trade, the provenance of *antiti* suggests it is linked to Islam and the Hajj. O'Brien (1999: 12) notes how West African practitioners also regard Middle Eastern tree-based incenses as powerful spirit summoners. 'Baba' explained that the rarity and expense of *antiti* – a consequence of its foreign origins – meant that local *mayu* (witches) rarely encountered its power, and were therefore without means to counter its affects.

Similar explanations, though lacking the veneer of Islamic belief, were shared by healers who, to fight serious witchcraft attacks, would travel as far as the forests of the Benin-Niger border searching for *itache yafita itacha*, a 'parasite tree' tentatively identified as *Ficus lutea* (Moraceae). Cousins Yussif and Ali had made the journey several times, sometimes without success. They stated their belief that local witches and *al-jene* (spirits) countered with unfamiliar, foreign substances, are less able to spoil or resist their curative properties – an efficacy they attributed to *koria*, 'the spirit of the plant'. Thus, within the frameworks of Madina's medical culture, the very ambiguity of the unknown becomes advantageous to the healers who may actively appropriate and rework such materials to their own ends.

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Exploring beliefs that may have stimulated acceptance and assimilation of exotic species over time is, of course, complex, and this phenomenon is identified as an issue that has rarely been the object of in-depth description and analysis (Konadu 2007: 6). An explanation of comparative silence on the subject is proffered by Rekdal (1999: 458) who notes that many ethnographic contributions have been biased in ways that draw attention away from the West African search for healing from afar. He attributes this silence, by turn, to derogatory notions of isolated primitivism, implicit notions of timeless 'pristine' cultural practices, and later emphasis on more issue-specific analyses of medical culture (Boddy 1989; Masquelier 1993). Consequently, many studies overlook, or purposefully exclude, an interesting perspective on historic acceptance of exotic species: attribution of power to the culturally distant (Southall 1953: 230; Helms 1992: 164; Kiernan 2006: 3). For Omar, nowhere was the *korla* or 'spirit of the plant' stronger than in the grounds of the University of Ghana Botanical Gardens. Here, in an environment wholly other in the botanical sense, being populated by plants living outside their native distributional range, the strongest medicines could be gathered, as recorded in a field-diary extract:

On a rainy afternoon, we set off from his home at Zongo Junction on a brisk three mile walk to the extensive bushland lying around the University of Ghana site. Omar explains, whilst nimbly dodging puddles, that the university has recently banned gathering of plants on its grounds; however, he is on good terms with the security guards, having healed many of them as children, so they overlook his collection of herbs. Nearing the campus, we proceed along a back road, reaching a small, trodden down gap in the shrubs into which Omar slips. Carefully following down a muddied path, we emerge from a small wooded clearing into the open. Stepping into the light of

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the Botanical Gardens proper, Omar growls, almost to himself, “The spirit of the plant is strong here. The trees they grow are big in medicine, and this brings ‘karfie [strength] to each leaf in the place.”

Local Understandings and Explanations of Use of ‘Exotics’

Situating concepts like *koria* (spirit of the plant) and ‘karfie (strength), or indeed ‘exoticism’, within consistent frameworks of motivating belief applicable across a mixed group can be challenging, especially when multiple cosmologies overlap. Murray Last has questioned ‘how much people know, and care to know, about their own medical culture and how much a practitioner needs to know in order to practice medicine’ (1992: 393). The Hausa medical culture of Malumfashi, Nigeria, he studied was similar to that of Accra’s Madina zongo in that it comprised Western biomedicine, Islamic medicine, and diverse indigenous medicines (Last 1992: 396). Both the early nineteenth century West African Islamic reform movement and colonialism have placed the diverse indigenous medicines at the bottom of medical hierarchies, leading to an increasing de-systemisation and merging of understandings. Ultimately, Last (1992: 393) argues that medical knowledge is layered, and the more specific one’s enquiries, the less certain the knowledge. In a botanical sense, the use of species of ‘exotic’ (non-local) provenance can be proven via botanical identification. However, interpreting the conceptual and social dimensions of the plants themselves in healing processes is more complex and variable. Shared representations of technical acts existed, but individuals also mobilised explanations that were more personal and more diversified in their origins (Gosselain 2011: 223).

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It should be noted that some listed exotics are strongly flavoured and have properties of taste affecting the body. As such, the usage of chillies and garlic within Hausa medicine is typically cursorily explained through reference to principles of Islamic humoral theory⁵, as 'hot' ingredients which cure illnesses caused by imbalance of cold fluids in the body (Lutz 2002: 60). There is little recognition that such species are imports or that humoral ideas are also comparatively new additions to West African medical culture. For example, Islamisation of West African Hausa speaking populations was, until a series of *jihads* in the late eighteenth century (Maishanu and Maishanu 1999), predominantly restricted to urban areas.

Participants most commonly offered naturalistic explanations of causation and efficacy. However, for certain species, particularly with exotic origins, the concept of *koria* was employed to explain their workings. *Koria* are synonymous with indigenous spirits (*al-jene*) that in animist belief reside in certain natural features such as rocks, trees, or streams (Insoll 2003: 24). Both are invisible spirits, with similar powers to intervene in human lives, but have individual characteristics – some good, some evil. If a suitable *al-jene* resides in something material, this can be utilised in medicine. Suitability is known from inherited knowledge, divined or seen in a dream. The residing spirit gives the medicine '*karfie* (strength), but most often it is appealed to by the healer before being successfully incorporated. This appeasement may involve prior initiation rituals, sacrificial offerings during acquisition, or observance of prohibitions. In the case of herbs, the *koria* will act to protect the power of the medicine and make it more effective against malicious spirit

⁵ This is a theme found in several other bodies of medicine, including: ancient Galenic medicine, which strongly influenced Islamic precepts (Nutton 2005: 111); Ayurveda, the traditional Indian medicine; and Chinese medicine (Patwardhan et al. 2005: 465).

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entities. 'Baba' Yahaya articulated the connection between certain plants and spirits in medicines as follows:

The reason we use barks is because the power of the spirit of the trees becomes a part of the herbs, and thus the medicines ... Some healers will tell you they do not work with *al-jene*. If they use trees in their medicines, you do not need to ask more – they are working with spirits. It is the same with all the substances that are extracted from particular places for use in medicines – the healer is extracting part of *koria*, the spirit of that plant.

Species having *koria* are typically used for serious illness or misfortune believed to be caused by *al-jene*, their strength countering that of the malicious spirit entity causing the client's problems. This connection between herbs, spirits, and special provenances was one of the themes underlying attribution of curative power to the culturally distant. Mallam Baki explained his early engagement with elements of foreign pharmacopeia as follows:

As a boy, when I learned to heal in the village, my father would gather the herbs from the bush. For a small sickness, these would be enough. For a big sickness, he would add goods that only came from the market – hot peppers, limes, incense – these made the medicine stronger. Big sicknesses were caused by the *al-jene* who lived in the bush, and they knew the medicines of the bush well, so you bought from the market medicines they didn't know ... This is why the market is so dangerous. The spirits who wait there know all the medicines ... If they pierce you, sometimes only an *Alhaji* [*Hajj* pilgrim] can help with what he has brought from Mecca.

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Most of the Madina healers had, or knew of, substances they regarded as particularly efficacious. The basis for this belief varied. As discussed previously, 'Baba' Yahaya went to great length and expense to acquire *antiti*, the soft, brown tree resin purportedly from Saudi Arabia, as its origins link it to Islam and the Hajj. Other indigenous religious practitioners also regard tree-based incenses from the Middle East as powerful spirit-summoning means in their own right (O'Brien 1999: 12). Ali and Yussif, to fight serious witchcraft attacks, would travel as far as the forests of the Benin-Niger border searching for a specific form of *Ficus lutea* (Moraceae), believing the *korla* of this parasitic tree was the strongest medicine for countering invasion of a client's life by evil forces. Across such cases, the ascription of efficacy was complex and multiple, but a frequent explanation was that these rare ingredients could confound local spirit entities that were familiar or resistant to common herbs.

It should be noted that only 15 percent of the unique species identified ($n=96$) were of botanically exotic origin, although as shown in Figure 1, these species are among those with the greatest number of applications. However, many medicines were also created based solely on indigenous species. Mallam Yussif boiled leaves and roots of *Momordica charantia* (Cucurbitaceae) and *Sarcocephalus latifolius* (Rubiaceae) together, creating a concoction drunk to purify the blood. Mercy, a market trader, often prescribed the roots of *Crossopteryx febrifuga* (Rubiaceae) or African Bark, ground to snuff powder and inhaled as a cure-all. Adamu too prepared powerful remedies using only local species, although in a number of cases, these were supported by inclusion of a rarer final ingredient:

Arrived at Adamu's 11:30 am to watch him prepare an anti-sambo [sorcery] medicine from start to finish. The main task for the day was to

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“cook” the medicine, charring the ingredients (dried plantain skins and *djam-mai* – men’s pepper seeds) together in a clay pot over a metal brazier ... left Adamu’s close to 5 pm ... medicine had just finished cooking and was then set aside to cool overnight ... Returned [following day] 12/10/11, 7 am, documented the charred remains having gun powder added and being ground to a fine black powder – the completed medicine.

Adamu explained that addition of a final substance such as gunpowder signified the ‘sealing’ or ‘binding’ of the medicine’s properties, the core of herbs treating the specific ailment, whilst additive substances ‘strengthened the whole’.

Invisible Botany: Derogatory Trend or General Disinclination?

Recent reports by botanists, such as the De Wet and Van Wyk (2008) team, have found that across South Africa, curative substances from other cultures are readily incorporated into the local *materia medica*. A surprising gap remains in West African literature concerning analogous indigenous adaptation of historically introduced species. There is, though, a body of publications on the negotiation of indigenous practices in the face of Islam, colonialism, and modernity. Based on fieldwork in Zanzibar, David Parkin (2007: 204) has analysed distinctions and mergings between Islamic medicine and various African healing systems known as *dawa ya jadi* (medicine of former times) or *dawa ya kienyeji* (indigenous medicine). Green and Mesaki (2005: 373) examine how anti-witchcraft practices have been transformed by

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a particular imagination of modernisation among practitioners who reinvent their rituals through incorporation of 'modern' artefacts. Comaroff and Comaroff (1993), Geschiere (1997), and Moore and Sanders (2001), meanwhile have published on the reaction and resistance of indigenous religious practices to the realities of the post-colonial state in Africa. In various contexts, these works examine ways that medico-religious practices are used to secure power or counter social anxieties. Luedke and West (2006), in their volume on therapeutic resources in Southeast Africa, bring together a number of contributions on how the power of practitioners to heal is often associated with them crossing borders, literal and metaphorical, exploring the creativity and resilience of indigenous medical systems. Studying Pentecostalism in the Volta Region of Ghana, Meyer (1998: 332–339) has written on the confrontation between indigenous spirit possession movements and Christian churches over rites of exorcism. However, most of these publications neglect the materialist dimension of herbalist approaches to healing, reflecting 'the tendency among anthropologists to emphasize solely the religious and symbolic aspects of ethno medical systems' (Morris 2011: 245).

Alpern has asked whether this silence results from the longstanding, implicitly derogatory trend to consider indigenous herbalism a static field, or simply reflects 'the general disinclination of historians to dig deeply into botany' (2008: 64). Certainly, studies of healing in West Africa tend, at best, to overlook the existence of imported species beyond maize and cassava. Here, an attempt has been made to move beyond this oversight by historicising contemporary exotics. Building upon the work of Alpern (2008), an outline of the findings can be seen in Figure 2. It summarises the geographic origins of exotic specimens in the Madina ethnopharmacopeia, and indicates the earliest documented dates of import to the region, based on primary Arab

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and European sources. Research by Liverani (2000) and Wood (2012) push the earliest date for trans-Saharan and Indian Ocean trade back significantly further. However, in terms of documentary evidence, Gold Coast mercantilism is most significant in West African importation of exotics (Posnansky and DeCorse 1986: 2). It is to one of the original centres of this, the Elmina castle and settlement, that we turn to link the present with the past.

Scientific name	Family	Common name	Geographical source	Earliest reference	Location of report	Source
<i>Allium sativum</i>	Amaryllidaceae	Garlic	Mediterranean	1337-38	Mali	al-'Umari
<i>Chrysophyllum albidum</i>	Sapotaceae	Star Apple	America	Unknown	Unknown	Unknown
<i>Cinnamomum zeylanicum</i>	Lauraceae	Cinnamon	Asia	1693	S.Tome	Oettinger
<i>Citrus aurantifolia</i>	Rutaceae	Lime	Mediterranean	1337-1338	Kanem	al-'Umari
<i>Cocos nucifera</i>	Arecaceae	Coconut	Asia	1519	Cameroon	Fernandez de Enciso
<i>Dialium guineense</i>	Fabaceae	Tamarind	Asia	1579-83	Congo	Lopes
<i>Eugenia calophylloides</i>	Myrtaceae	Clove	Asia	1572	Elmina	Port source
<i>Jatropha curcas</i>	Euphorbiaceae	Physic Nut	America	1839	Gold Coast	Freeman
<i>Mangifera indica</i>	Anacardiaceae	Cassava	America	1612	Gabon	Brun
<i>Nicotiana rustica</i> , <i>N. tabacum</i>	Solanaceae	Tobacco	America	1594/96	Timbuktu	Tarikh al-Fattash
<i>Persea americana</i>	Lauraceae	Avocado	America	1824	Senegal	Monod
<i>Saccharum</i>	Poaceae	Sugarcane	Asia	C 12th	Gao	al-Zauhri

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<i>officinatum</i>		e				
<i>Senna alata</i>	Caesalpinieaceae	Hot Pepper	America	1686	Gambia	La Courbe
<i>Zingiber officinale</i>	Zingiberaceae	Ginger	Asia	1579-83	S.Tome	Lopes

Figure 2. Native origins and earliest documented import date of exotic species to sub-Saharan Africa found in contemporary Madina.

Historic Assimilation of Exotic Species – The Case of Elmina

Elmina, eighty miles west along the coast from Accra, founded by the Portuguese in 1482, was the first fortified European trading post in sub-Saharan Africa (DeCorse 2001: 7). The fort and the African settlement, which gradually enclosed it, comprise one of the best archeologically understood sites in the region, and there is evidence that introduced species had a major impact on local consumption patterns (DeCorse 2001: 111–113). Whilst published accounts make limited reference to medicines, the ritual practices of Elmina's indigenous Akan peoples are evident materially through ceramics, including medicine pots (DeCorse 2001: 121, 183). As Elmina fort was absorbed into the growing Akan settlement from the fifteenth century onwards, there was increased African demand for imported goods, which significantly impacted the economy of the inland market (Ozanne 1962: 58). This pattern was repeated elsewhere along the coast, including Accra from the later seventeenth century (Wilks 1957: 118). The importance ascribed to foreign materials over time can be seen through their incorporation into Akan beliefs. Namely, from the early seventeenth century onwards, Akan grave goods included imported trade materials, and by the nineteenth century,

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such foreign objects were incorporated into household shrines (DeCorse 2001: 187–189).

At Elmina, despite the disruption of the slave trade (DeCorse 1991: 92), indications of changing values appear more prominently in the nineteenth century, after the advent of colonial rule. Imported products became much more readily available. European involvement in African affairs was also more overt. Influences included a direct role in the selection of rulers and structuring of political hierarchy. The effect of this on local pharmacopeia is difficult to discern given limited sources. However, one significant botanical change along coastal Ghana was the disuse and destruction of formally sacred groves and the plants they curated (DeCorse 2001: 191). From an archaeological perspective, there was also a relatively dramatic change in artefact inventories. However, rather than a drastic replacement and modification of African practices, DeCorse's (2001) Elmina data reflect the adaptation of some external features on local terms, such as the gradual ritual assimilation of trade goods into first burials and later shrines. Trade and colonialism in Elmina thus resulted in both change and continuity, through cultural processes in which nonmaterial beliefs were conveyed by their material traces.

As part of this process, the historic importance of exotic species in the region can be traced through primary accounts, such as that of Bosman. In 1705, based on experiences as ships' quartermaster sailing along the Gold Coast and as a trade agent in Elmina, he observed that, 'the chief medicaments here in use [by Africans] are first and more especially lemon or lime juice' (Bosman 1967 [1705]: 224). Indeed, a raft of early travellers' accounts (e.g. Levzion and Hopkins 1981; Fage 1987) attests to the presence of exotic species as prominent elements within local pharmacopeia across West

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African contexts (Konadu 2007: 6). Herbal concoctions mixed with lime juice are identified in numerous early descriptions of pharmacopeias in the Gold Coast and Sierra Leone, especially for treating yaws and syphilis (Winterbottom 1803: 56, 157; Bowdich 1819: 373; Maier 1979: 67, 77). Similar evidence revealing a merging of exotics, particularly lime and ginger, alongside native African species can be found in reports of medicines among the Ashanti of Ghana (Bowdich 1819: 373; Maier 1979: 67, 77), 'native Africans' of Sierra Leone (Winterbottom 1803: 56, 157), and of remedies imported to Barbados by slaves (Hughes 1750; Handler and Jacoby 1993: 78–83). Hughes' (1750) account of slave medicine in Barbados records African pharmacopeias as merging African plants like aloe vera alongside ginger and lime in medicinal drinks.

Evidence of import date from Figure 2 and scattered accounts of species medicinal usage, tentatively suggest that certain exotics, if not commonplace, do appear to have been comparatively widely assimilated and naturalised following their arrival. However, at one time, such plants were new and unfamiliar – they had to be first encountered and then experimentally incorporated within existing curative traditions. The paper closes by examining how this historically documented process may be better understood by incorporating evidence from contemporary practices to broaden interpretive perspectives.

Linking the Past to the Present: Echoes of Assimilation in Practice?

A medicine-crafting process repeatedly observed in Madina offers a potential indication or trace of such assimilation, encoded in the techniques of skilled practice enacted at the healer's hands. Why is it that Bosman, a ship's quartermaster, so clearly recognised lime use in local medicines? First and foremost, Bosman would have been able to identify the lime by name, although the fruit was not made an official part of British navy rations till 1795. Contemporary ethnography suggests another possibility: lime juice is predominantly added at the end of the medicine preparation process, thus being very apparent to even the casual observer. Healers in Madina regard lime as an additive ingredient. Chilli, ginger, and garlic were typically conceptualised and, importantly, used in a similar manner. Repeatedly, during the crafting process, a core of local herbs are collected, dried, pounded, boiled, and then, in the final one or two stages of the preparation, these ingredients, described by *mai-magani* as 'additive' or 'synergetic' substances, become included. The use of these ingredients was part of a loosely defined set of techniques Madina's healers directed towards crafting medicines with '*karfie* (strength); the term *karfafa* (to wax strong, to grow strong together) was used in several interviews to describe their addition and intended purpose. Although further research is needed to explore this correlation, it is interesting that provisional findings on medicines incorporating botanically exotic species potentially indicate remnants of an underlying conceptual division. At the core of production are the indigenous, ancestral herbs, and then, this comparatively new element, first encountered by a healer a few generations earlier, is incorporated at the end to 'strengthen the whole'. Gosselain (2011: 212), referencing Lave and Wenger

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(1991: 96), notes the value of studying the dynamics of transmitted elements of technical knowledge as a way to both explore historical processes and gain a better understanding of the contemporary social dimension of technical practices and material culture.

The point this line of analysis develops is that exotic species, even in the context of their current widespread and naturalised usage, arguably still carry a trace of their 'otherness'. Lemon, chilli, and garlic are found added to many different remedies, but participant observation indicates that the technical choices dictating their inclusion marks them out as substances implicitly separate. Historically, such exotics are an addition to indigenous pharmacopeia and this underlying distinction is perhaps materialised in the present through repeatedly observed processes of medicine creation in which exotics are added at the end of production sequences. One possible interpretive explanation is that this contemporary practice is a consequence or transmission of earlier healers experimenting with newly encountered substances. This fits contemporary belief that certain non-local plants, with their unfamiliar spirits (*koría*), can strengthen existing remedies, preserving the integrity of ancestral medicines whilst implicitly maintaining a certain detachment between the two.⁶

⁶ To explore this nascent hypothesis in more detail, follow-up research is scheduled: firstly, via historical research in the archives at the Royal Botanical Collection, Kew, and secondly, via a further fieldwork season focused on medicine traders.

Conclusion

Naturalisation of exotic species within Madina's heterogeneous pharmacopeia, as signified by Adamu and his son's two neat little rows of herbs, is, I would argue, one outcome of an active, creative process of incorporation by generations of healers. Such on-going acceptance and assimilation of foreign substances was observed ethnographically at healers' workspaces and herbalist markets. Historically, something similar may be interpreted through scant regional documentary records and archaeological evidence. Rather than being set, algorithmic procedures communicated and reproduced pristinely across generations, the substance and technical knowledge of healing repertoires are malleable, liable to incorporate available outside elements where these are classified by practitioners against existing representations as locally appropriate for use. The current paper contributes to recognition of this process. The research provides specific illustrations of the way in which a close reading of plant cures speaks to the broader West African theme of belief in the power of the medicine of the culturally different or other. It also adds examples to the literature of materialisation of the desire to appropriate outside elements and rework them with reference to local traditions.

Further research is needed to add detail to this picture. However, it is valuable to emphasise the healer-stallholder-supplier relationships at specialist markets that provide the primary context for encounters with exotic species. They attest to the complexity of relationships between people and substances played out temporally in the abiding search for well-being. This may be evidenced by continuities and changes in Elmina's indigenous medico-religious practices between the fifteenth and nineteenth centuries, or over the course of an afternoon at the market, when an alien Japanese plant

becomes embedded alongside 'traditional herbs'. These lines of analysis redress the derogatory and romanticised images of the *mai-magani* as a static repository of timeless practices.

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