



Introduction. Shrines, substances and medicine in sub-Saharan Africa: archaeological, anthropological, and historical perspectives

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Whereas shrines in Africa, and to a lesser extent their links with medicine and healing, have been extensively studied by historians and anthropologists, they have been largely neglected by archaeologists. Focus has been placed upon palaeopathology when medicine is considered in archaeological contexts. Difficulties certainly exist in defining medicine shrines, substances and practices archaeologically, yet research can take various forms – scapegoats and figural representations of disease; divination and diagnosis; trade and spread of medicinal substances, shrines, and amulets; syncretism of different traditions and materiality; the material culture associated with healing and medicinal substance; depictions in rock art; genetic research. A move beyond palaeopathology is required to begin to understand the archaeology of medicine shrines, substances, practices and healing in sub-Saharan Africa.

Keywords: shrines; medicine; substances; Africa; archaeology; divination; palaeopathology

Introduction

Shrines in Africa, and to a lesser extent shrines and their links with medicine, are subjects that have been intensively explored by anthropologists and historians (e.g. Buxton 1973; Werbner 1977; Schoffeleers 1979; Allman and Parker 2005), but less so by archaeologists (Mather 1999: 214; Dawson 2009). Hence, emphasis here will be placed upon considering the link between shrines, medicinal practices, medicinal substances, and health in sub-Saharan Africa from an archaeological perspective.

Medicine ‘shrine’ definitions and typologies

Shrine

‘Shrine’ is a term that fails to describe the range of structures included within its boundaries (Insoll 2004, 105). The reason perhaps being because ‘shrine’ is derived ultimately from the Latin *scrinium* – meaning ‘box’ or ‘receptacle’, as in ‘containers of sacred meaning and power’ (Courtright 1987, 299). Within sub-Saharan Africa this can encompass the domed Muslim *qubba* of Ethiopia or the Sudan (Foucher 1994) to the single pot *yin* (destiny) shrine of the Talensi (Insoll 2008). Hence ‘shrine’

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has been variously defined in the African context. Van Binsbergen (1979, 47–48) defines a shrine as an ‘observable object or part of the natural world, clearly localized and normally immobile’, and ‘a material focus of religious activities’. Most recently Dawson (2009, vii) has referred to shrines as ‘vessels’ – containers for spirits or entities and as symbolic vessels.

Medicine

‘Medicine’ is also a problematic term. Almquist (1991, 103) describes how *bebobe*, ‘medicines’, was used by the Pagibeti (Congo) as a ‘favourite one-word explanation’ for ‘the unusual power of a chief, a witch, or a highly successful curer or hunter’. Lewis Wall (1988, 211) similarly indicates the problem with the word ‘medicine’ in the Hausa (Nigeria) context. Rather than meaning ‘the science and art concerned with the cure, alleviation, and prevention of disease, and with the restoration and preservation of health’ (Little, Fowler, and Coulson 1973, 1300), the Hausa concept of *magani* ‘includes much more’ (Little, Fowler, and Coulson 1973, 1300) in that it can ‘refer to anything which corrects or prevents an undesirable condition’. The problematic nature of ‘medicine’ as defined in English is also clearly indicated by the fact that medicines can become Gods. Field (1937, 113) refers to such a process amongst the Gã (Ghana). This was probably common but remains under-researched, and indicates how ‘medicine’, especially if enshrined, can become a cosmological axis that transcends a concern with health.

Medicine shrine

Defining a medicine shrine is equally problematic. Although the level of detail recorded in the studies drawn upon varies significantly, an idea of the diversity of medicine shrines in one area of West Africa, northern Ghana, is provided in Table 1.

This indicates difference, but also similarity, in relation to the recurrence of the container or vessel. Dawson’s (2009, vii) ‘vessel’ shrine definition would appear valid. This, however, does not equal typology. Shrines ‘are not immutable’ (Dawson 2009, xi) and medicine shrines seem to be able to mutate and develop into other ‘forms’ of shrines and entities. As mentioned, they can become Gods, but also ancestor, or earth shrines (Lentz 2009, 140), or be derived from these. They can cross the boundaries of Colson’s (1997) human-constructed ‘shrines of the land’ and natural ‘places of power’. A typological approach to medicine shrines would appear largely ineffectual, certainly archaeologically, where what might be constructed above ground will likely be rendered unrecognizable (Insoll 2008). Mather (2009, 115) has explored aspects of the ethnoarchaeology of shrine taphonomy in northern Ghana and is more optimistic about their recognition in the archaeological record, but his theoretical emphasis placed on residue analysis and ‘morphological, histological, and chemical criteria’ awaits practical validation when archaeological and analytical reality is less forgiving (see Insoll 2011; van Dongen, Fraser, and Insoll 2011).

Evidential constraints might mean that typology is inappropriate in most archaeological contexts, but a narrative that recognises a historical trajectory in relation to medicine shrines is vital. They, as has been recently noted for

Table 1. Selected examples of medicine shrines in northern Ghana (compiled from Mather 1999, 107–12; Apentiik 1997, 242; Mendonsa 1982, 102; see also Insoll 2011).

Ethno-linguistic group	Name and purpose	Form/material elements
Kusasi (Mather 1999)	<i>Gebik</i> – diagnosing illness	Calabash
Kusasi	<i>Winam tongo fun yor</i> – diagnosing whether a patient is close to death	Wide-mouthed pot filled with a pile of stones
Kusasi	<i>Amar kapar</i> – diagnosing whether a patient is close to death	Wide-mouthed pot containing water and roots and used in association with a cow’s tail
Kusasi	<i>Tiik/tiis</i> – curing illnesses caused by trees	Wide-mouthed pot containing plant parts soaked in water
Bulsa (Apentiik 1997)	<i>Tiim-Bogluta</i> – protection for self and family	(i) Pot containing water and ‘herbs’ (ii) Horn (unspecified) filled with clay
Sisala (Mendonsa 1982)	<i>Daaluno</i> – medicine shrine	Structure and appearance differs but generally composed of a container (unspecified) for the medicine (roots, herbs, bark, and other material).

sacred groves, are historical constructs and not ‘icons of static tradition’ (Sheridan 2008, 23).

Shrine medicine substance, efficacy, and disease representation and transference

Substance, efficacy, ‘scapegoats’

Discussion centred on exploring their substances – what gives medicine shrines their efficacy – is potentially a topic for research. This, however, should transcend a sole concern with pharmaceutical components and active agents, although these obviously play a role (see Insoll 2011). Instead, as James (2009, 41) has noted in relation to Hausa medicinal substances, medicinal power ‘is partly drawn from their interconnections to a wider framework of metaphorical associations and not simply inherent biomedical qualities of the constituent ingredients’. This also applies to illness, for as Devisch (1993, 31) remarks, ‘the interpretation of illness can only be understood within the wider context of the forces at work in the social context and life-world’. From an archaeological perspective, the emphasis upon overall context in understanding medicine shrines and substances becomes paramount, for example, in how they might relate to concepts of taboo and prohibition. Amongst the ‘LoDagaba’ and ‘Birifor’ (Dagara, Ghana), for instance, the benefits from ‘eating’ a medicine connected with a shrine could only be derived by observing certain prohibitions, otherwise unspecified by Goody (1967, 76; see also Saako 2009, 74–75). Breaking a taboo might also be believed to cause disease for the infractor, as Meek (1931, 310) relates for the Jukun (Nigeria). Hence, to isolate ‘medicine’ from its overall context would be to separate it from other material domains of potential archaeological relevance, such as the residues of sacrifice, diet, and taboo (Insoll 2010).

The concept of the scapegoat also links in with taboo and medicine and provides a material case study. The scapegoat can take several forms, one of which is the sacrifice of an animal and it being cast out into the bush as an agent of disease transference. Ngubane (1977, 11) describes how Zulu (South Africa) healers threw the clay medicine pot and medicine remnants onto the carcass of a black sheep killed by suffocation. This was then covered with thorny branches and stones. Another form of scapegoat is provided by the figural representation of an afflicted individual in the hope that the disease or condition represented would be attracted to the figurine as part of the processes of healing and disease prevention (see Kankpeyeng, Nkumba, and Insoll 2011). This has been recorded in many instances ethnographically. Fagg (1990, 32), for example, describes the recent use of *Kwandala* pot figures amongst the Longuda of Nigeria. The pot figures served almost as shrines in the way that they were ritually treated in having beer poured on them and meat offered to them because, 'the spirit of the disease, placated by sacrifice, is believed to leave the body of the invalid, and enter its clay representation' (Fagg 1990, 32).

Nok

Disease transference and aversion agents can also take plainer forms. Related, but not directly analogous are the Giriama (Kenya) *vifudu*. These are ordinary cooking pots that are believed to be representations of deceased female ancestors and that, if properly handled, will help avert disease and ill health. Udvardy's (1990, 140) warning on the improbability of their archaeological interpretation without an understanding of their spatial symbolism is, however, entirely appropriate. Figurative images offer greater interpretive potential. In addition to the Koma Land figurines discussed in this issue (see Kankpeyeng, Nkumba, and Insoll 2011), disease and disfigurement has been noted in the Nok figurine corpus from Central Nigeria (Fagg 1990). These have been radiocarbon and thermoluminescence dated to between 500 BC and AD 200 (Rupp, Amejé, and Breunig 2005), and can indicate precisely identifiable conditions (Table 2).

Table 2 indicates that what is lacking in relation to most examples of Nok terracotta figurines is a precise understanding of context, although this is beginning to be redressed (see Rupp, Amejé and Breunig 2005). Hence, it is not possible to say if they were linked with shrines, including medicinal ones.

Tago

It is easier to explore context in relation to other figurines found in West Africa. At the Sao site of Tago, c. 30 km north of Ndjamena in Chad, figurines were found in context, and this suggests, by analogy with elsewhere, a medicinal or healing association as a potential, at least partial, interpretation. Level 2 at this site had three figurines with human torsos, arms, and heads represented, oriented to the east with one placed upon part of a funerary jar accompanied by four balls of fired clay put at the cardinal points. Arranged in three semi-circles behind and to the side of these figurines were further groups of hundreds of figurine fragments; people, animals, masked dancers, as well as stone pounders, pieces of ochre, and faunal remains interpreted as the residue from offerings (Lebeuf and Masson Detourbet 1950, 68–70). This has been referred to as the 'central shrine' (Phillips 1995, 533). The date of Tago is unclear, but the highpoint of

Table 2. Conditions and diseases represented by Nok and Ife figurines (compiled from Fagg 1990, 31–2, 108–9; Willett 1967, 61–3, 208; Garlake 1974, 126, 130).

Identification code	Context	Condition(s) and diseases(s) represented
RMG Nok	Mining, Nok (no context)	Bell's Palsy
Jos N 287.3	Mining, Nok (no context)	Prolapsed haemorrhoids
Jos 58.15	Mining, Big Paddock, Nok (no context)	Elephantiasis of the scrotum
None given	(Nok) None given	Possible tuberculosis of the spine
None given	Osongongon Obamakin Grove, Ife	Elephantiasis of the scrotum
None given	Osongongon Obamakin Grove, Ife	Possible anacephaly
None given	Osongongon Obamakin Grove, Ife	Right hand and foot with elephantiasis
None given	Uncertain provenance, Ife	Rickets
None given	Uncertain provenance	Face with nose eaten away by gangosa or similar
OLT 12	Obalara's Land, Ife	Unidentified – fluid from nostrils, swollen upper lip, swelling of right side of neck, bags under eyes
OLT 4	Obalara's Land, Ife	Right hand deformed by elephantiasis
OLT 7	Obalara's Land, Ife	Possible anacephaly

the Sao seems to have been between the tenth to sixteenth centuries AD (Lebeuf, Treinen-Claustre, and Courtin 1980; Insoll 2003, 278).

A shrine interpretation for Tago would appear valid and, based on contextual similarities with the deposition patterns at the Koma Land sites (see Kankpeyeng, Nkumbaan, and Insoll 2011), suggests a curative, healing, or medicinal element might also have underlain the deposition of the figurines and other materials and their arrangement. Such an interpretation need not replace Lebeuf and Masson Detourbet's (1950, 128–129) suggestion that an ancestor cult, a form of totemism, and beliefs in various spirits underpinned Sao religion and ritual, and hence shrines, but merely accompany these as a further interpretive option. Various interpretive possibilities exist in relation to a medicinal/healing function for the figurines and their context, as a whole – as a medicine shrine – or in part – through serving to protect from disease, functioning as scapegoats, or representing the disposal of the residue of healing processes. The former, as a medicine shrine, gaining interpretive value when the excavators' suggestion that Tago, through the diverse figurine styles represented, perhaps signifies, 'que le lieu recevait la visite de pèlerins étrangers qui y plaçaient des masques modelés suivant le canon particulier de leur cite' (Lebeuf and Masson Detourbet 1950, 129). Whether the figurines were linked with birth as they also suggest (Lebeuf and Masson Detourbet 1950, 129) is unclear, but Tago was undoubtedly perceived of as a powerful place, efficacious in the purpose it served.

Figurines representing diseased individuals can be used for various purposes. Cory (1956, 132, 135–136) illustrates two clay figurines used during boyhood initiation by the Pare (Tanzania). One is of an individual with a swelling on his neck

representing *Kinundu*, ‘the cripple’, and was used to illustrate that it is unwise to mock someone because of physical defects. The other also shows someone with a swelling on the neck and represents a hypochondriac who took a different medicine every day, leading to his affliction, and was linked to the instruction that, ‘illness can be caused by taking too much medicine’ (Cory 1956, 137).

Ife

At Ife in Nigeria, diseased individuals are, as at Nok, also represented in the terracotta figurines produced in the so-called Classic period of the twelfth to fourteenth centuries AD (Table 2; Willett 1967). Unlike at Nok, the context of the figurines at Ife is more informative, even if precise meanings cannot be reconstructed. Particularly significant is the Classic period site of Obalara’s Land where the excavator suggests that it seems that people who had died of disease were interred with their heads disposed of separately as a preventive measure so the disease did not recur (Garlake 1974, 146). Material suggestive of this included sorted piles of human remains, such as a compact group of both fragmentary and complete human skulls whose condition seemed to indicate they were collected together post-mortem or after decapitation. This comprised eight complete crania (minus mandibles), 14 complete calvaria, 12 almost complete calvaria and fragments of a further five calvaria (Insoll 2004:108). Against the uppermost skull rested a terracotta head depicting ‘an expression of malevolence or horror’ (Garlake 1974, 122). Placed close by was another terracotta head of a diseased individual, along with two fragments of human long bones and further terracotta and pottery fragments. Similar evidence for ‘bodily partition’ (Ogundiran 2002, 115) was discovered at the central Yorubaland site of Ìloyí (Nigeria) where the burial of human remains, including a skull, thoracic vertebrae and parts of the humerus, ulna and radius, were recorded in contexts radiocarbon dated to between the thirteenth to fifteenth centuries AD. The excavator suggests (Ogundiran 2002, 39) that one of the interpretations that can be proposed is, as at Obalara’s Land, post-mortem decapitation of people who died of disease.

Garlake (1974, 143) suggests the material from Obalara’s Land indicates it was a shrine. Again this is a realistic interpretation, and, based on the material present and its contextual arrangement, it can be further suggested that this potentially had a medicinal function as one of its purposes – possibly here in relation to disease transference and containment. Such a medicine-shrine related interpretation might be given additional support by the repeat representations of scarification on many of the figurines (Table 3). Some of these could be signifiers of identity and cosmetic beauty as known ethnographically (see Harley 1970, 125–126; Drewal 1988), others might denote medicinal practices (see Insoll 2011; Kankpeyeng, Nkumbaan, and Insoll 2011), also recorded ethnographically as a way of introducing medicinal substances below the skin (see Drewal 1997, 247; Drewal and Mason 1997, 336; Samuelsen 2001, 164). Imperato (1977, 177) describes this in a Bambara context as a cicatrization process whereby mineral or herbal products are rubbed into the scarified area creating a ‘foreign-body’ reaction and the formation of heavy scar tissue or keloids.

Recurrent in these examples is the link to what can be interpreted as a shrine by way of context and association, with the shrine, if such an interpretation is valid, functioning as the agent of efficacy in association with the figurines.

Table 3. Examples of scarification represented in the Obalara's Land figurines (compiled from Garlake 1974, 132–4).

Identification Code	Figurine Type/Part	Scarification
OLT 32	Head	Groups of three small keloid scars on right temple and above both eyes
OLT 15	Head	Vertical striations to the face
OLT 19	Torso	Vertical striations on abdomen
OLT 21/22/38	Lower torso, legs and feet	Vertical striations on abdomen
OLT 43	Head	Concentric arcs of scarification from top centre of forehead. Alternate stripes are cross-hatched and vertical scars on chin and nose

Diagnosis, association, and cosmological substance

Divination can, but need not, function in relation to shrines (Peek 1991; Insoll 2010), and, potentially, divination offers a material insight into wider metaphorical associations and beliefs related to medicinal substance and shrines, as well as to objects that symbolically or metaphorically function to indicate disease, its causes, and generic illness. Divination is often the primary or a primary mechanism of diagnosis in many parts of sub-Saharan Africa (e.g. Janzen 1992, 42; Buxton 1973, 42; Lienhardt 1961, 148), but the material dimension of divination as it relates to medicine, diagnosis and healing has been less well explored, certainly with regard to the potential archaeological implications. Although somewhat simplistic to reduce systems as complex as divination to their material dimension, it is instructive to do so from an archaeological perspective, and the objects in Table 4 relate to what Peek (1991, 12) describes as causal divination systems involving the 'chance cast of objects' as opposed to, for example, those involving oracles (see Evans-Pritchard 1976; Tonkin 2004) or possession (e.g. Buxton 1973, 78–86). Unfortunately, in many studies, detail on what the code objects actually are is either partial or wholly lacking, although conversely effort will be expended in discussing their interpretation (see for example Pemberton 2000), thus limiting the number of examples that can be drawn upon.

It is evident from Table 4 that, in general, it will be virtually impossible to identify divination archaeologically. The ephemeral nature of the code objects which are often made of organic materials, as well as the transitory nature of the contexts and actions used in the divination process, will usually render them irretrievable. In some instances, however, divination apparatus might be evident archaeologically, context and ethnographic analogy permitting. Garlake (1974, 143), for example, suggests that two of the artefact concentrations at Obalara's Land could have been marked by iron staffs placed upright in their midst. Iron staffs described (Garlake 1974, 143) as reminiscent of the Yoruba diviners' *Opa orere* or *osun* staff. Nutor (2010, 87–88) also refers to a sandstone boulder carved with nine hollows on its surface and found during excavation at the nineteenth century Dente Ga Shrine site at Dzake-Peki, Volta Region, Ghana. This he suggests could be an *oware* game board, or because of the shrine context, linked with divination. Regardless of archaeological visibility, an awareness of the frequent centrality of divination in relation to medicine and

Table 4. Selected examples of primarily West African causal divination systems involving medicine related purposes, their relevant associated objects, and their potential archaeological visibility.

Ethno-linguistic group	Purpose	Relevant material element(s)	Archaeological visibility
Batammaliba (Togo) (Blier 1991, 83–5)	Medical Divination	(i) Wooden consultation club (ii) Flat stone (iii) Two cowries	None
Sisala (Ghana) (Mendonsa 1982, 115, 124)	Diagnosing and treating illness and other forms of affliction	(i) Pieces of calabash (ii) Dried fruit of the <i>nanpapamun</i> and <i>bubina</i> trees (iii) Bundle of twine (iv) A Y-shaped stick (v) One cowrie shell	None
Talensi (Ghana)	All forms of problem solving including diagnosing illness	Flat seed of the <i>kpenkpalik</i> tree (only object of 35 code objects explicitly linked with 'sickness')	None (but other code objects would be archaeologically visible)
Jukun (Nigeria) (Meek 1931, 311, 325–8)	All forms of problem solving including diagnosing illness	Two strings to which are attached four pieces of calabash to each. Between the pieces of calabash are 16 pieces of bone from the <i>dan sarki</i> fish (Hausa, species unknown)	None (but fish bones would survive)

<p>Bambara (Mali) (Imperato 1977, 57)</p>	<p>Diagnosing illness</p>	<p>(i) <i>Belee</i> – small stones (ii) <i>Golongise</i> – cowrie shells (iii) <i>N'kenyede</i> – reading of marks made in sand</p>	<p>None (though cowries and stones would obviously survive, their linkage with divination is highly unlikely)</p>
<p>Senufo <i>Sando</i> (Côte d'Ivoire) (Glaze 1981, 64–6)</p>	<p>All forms of problem solving including diagnosing illness</p>	<p>(i) Forged iron miniatures of cultivator's and blacksmith tools (ii) Iron, wood, basketry & brass miniatures of sacred objects & divination equipment (iii) Abstract symbols in metal, wood and fibre (iv) Natural objects such as seeds and shells</p>	<p>Some – objects and miniatures in durable materials would survive</p>
<p>Tswana (Botswana) (Staugård 1985, 74–81)</p>	<p>Medical divination</p>	<p>(i) <i>Kgokong</i> – wildebeest-tail broom (ii) <i>Ditaola</i> – casting the bones or holy bones – small carved pieces of antelope-horn or ivory, snail shells, pieces of plastic or glass, jackal's teeth, goat's vertebrae <i>Ngombo yakusekula</i> (basket divination)</p>	<p>Some – dependent on preservation conditions</p>
<p>Barotse (Zambia) (Reynolds 1963, 98–102)</p>	<p>All forms of problem solving including diagnosing illness</p>	<p>(i) small wooden figurines (ii) case of the <i>psychidae</i> moth (iii) miniature axe, hoe, stool, canoe, and drum (iv) plaited palm leaf strip (v) cowry shells on a leather disc (vi) interlocking wooden rings</p>	<p>Some – objects and miniatures in durable materials would survive</p>

Table 5. Imported Mandari 'powers', shrines, and associated medicines (compiled from Buxton 1973, 74–6, 419, 420–2).

<i>Jok</i> (power)	Illness	Medicine	Shrine
<i>Mutianagok</i>	Severe pains in head, chest or back, possible delirium and high temperature	Root medicine (1) Unidentified tuberous root (2) <i>Cistus populnea?</i>	Pole shrine
<i>Mayom/Myom</i>	Swelling	Pounded medicine (unspecified)	Pole shrine
<i>Ukor</i>	Diarrhoea, passing blood	Used but unspecified. Perhaps <i>Ziziphus?</i>	Pot and cattle-peg shrine
<i>Adwegdwor</i> and <i>Agok</i>	Severe headache, diarrhoea, vomiting, high temperature	Used but unspecified	Pole shrine
<i>Weltoc</i>	Wasting disease	Unspecified	Small pole shrine
<i>Abyel</i>	Pain in the side near heart	Unspecified	None
<i>Mayar</i> and <i>Wonkoro</i>	Chest illnesses, possibly pulmonary tuberculosis and pneumonia	Unspecified – perhaps <i>Gloriosa simplex?</i>	None

medicine shrines is vital. For divination is often, and probably was equally so in the past, 'the primary institutional means of articulating the epistemology of a people' (Peek 1991, 2), and within which medicines and medicine shrines obviously function.

Agency of medicine shrine and substance dispersal

Spread and fission

Medicine shrines and their substances can also be spread extensively and this potentially holds archaeological implications. Almquist (1991, 103), for example, describes how Pagibeti travellers sought out medicines from neighbouring villages and ethnic groups, whilst Boyd Christensen (1959, 277) refers to the process by which the Fanti (Ghana) *Tigari* became the name for exotic cults set up by individuals bringing 'medicine' or a deity from another locality, and often northern Ghana. Field (1937, 124) also refers to Gã healers invariably obtaining their medicine from outside Gã or neighbouring Twi or Fanti country. Instead, medicine was obtained from Togo or northern Ghana. More famously, Buxton (1973, 64) discusses how the importation and infiltration of *jok* or powers that was central to Mandari systems of health, medicine, and wellbeing occurred in the 1920s as a correlate of cultural influences from the neighbouring Aliab Dinka and Atwot peoples in the Sudan. It is evident that shrine types, illness, and medicine were clearly integrated in the Mandari *jok* structure. A summary of Buxton's patchy data (1973, 74–76, 419, 420–422) is provided in Table 5 and illustrated in Figure 1, but it is impossible to link them to specific *jok*; even though Buxton (1973, 74) states that 'the distinctive pole shrines make it possible to tell, immediately, which Power is involved', her data does not permit such an identification.

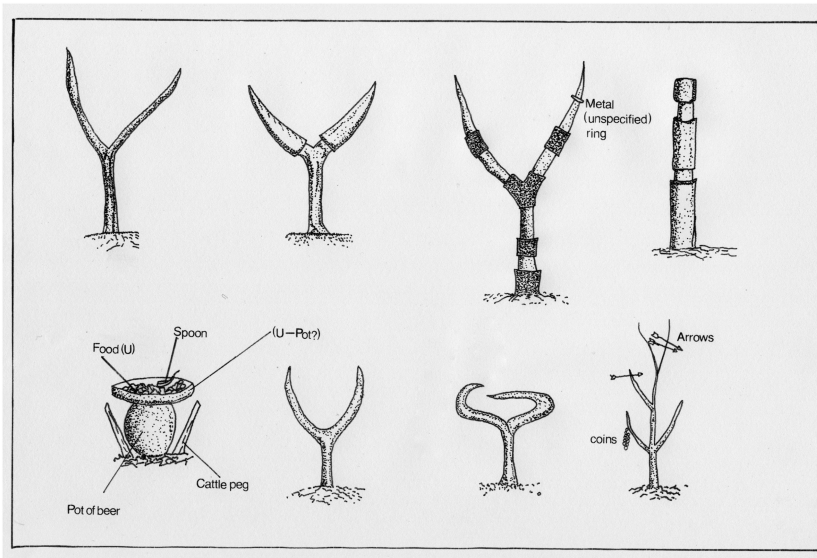


Figure 1. Mandari 'Shrines for Powers' (not to scale; after Buxton 1973, 419; U = unspecified). Top (L–R): (1) Unshaped branch pole. (2) Horns of sacrificial ox placed over wooden horns. (3) Pole with bands of bark and metal ring attached. (4) Shaped pole lacking horns. Bottom (L–R): (1) Pot and cattle-peg shrine. (2) and (3) Poles imitating oxen display horns. (4) Shrine with 'offerings'. Horned poles are described as 5 to ten feet height (1.5–3 m) and plain poles as 3 to 5 feet (90 cm–1.5 m).

Notwithstanding the data provided, the archaeological recognition of the Mandari *jok* structure and its component linkages of shrine-illness-medicine would be unlikely. The largely organic nature of the shrines and medicines – even allowing for theoretically ideal conditions of contextual association – precludes survival (Figure 1). Moreover, the linkage to specific illnesses as a correlate of symbolic and cognitive systems will be completely lost without direct ethnographic information.

Looking at processes comparatively, no single process of medicine shrine and substance dispersal seems to have existed even in ethnically or environmentally similar regions. Mendonsa (1982, 101) records how amongst the Sisala of northern Ghana the *daahumo* or 'medicine shrine' could be 'split' if someone wanted to share in its power. This could occur within the same ethno-linguistic group or across ethno-linguistic lines. In this way it is similar to Talensi processes of 'shrine franchising', also in northern Ghana (Insoll 2006; see Insoll 2011), but the processes behind the spread of Sisala medicine shrines appear also to differ, as less emphasis was placed on substance transfer and more on knowledge of rites and medicines.

Exotic Materia Medica

A potentially similar correlate, however, of these processes is variation in pharmacopeia as they need not reflect the surrounding environment botanically, geologically, or even in terms of animal species that might also be utilised for medicinal purposes. *Exotic materia medica* could result that perhaps encapsulates

what Rekdal (1999, 473) refers to as ‘the healing power of the culturally distant’. For example, Imperato (1977, 103) mentions how Sahelian and Saharan Qur’anic healers were disadvantaged ‘from the lack of abundant flora in the environments where they live’. Hence medicinal plants were imported from latitudes further south. This does hold potential archaeobotanical implications for recognition of medicinal plants, either imported or locally obtained. Mercader (2003, 109) suggests that some of the phytoliths represented in the sequences of the rock shelters he excavated in the Ituri region of northeastern Congo represented in situ deposition by human activity, including bringing in ‘medicinal and ritual plants’, and it seems in contexts dated as early as $10,530 \pm 50$ BP at the site of Matangai Turu Northwest.

Rarity of ingredients can also be a factor in the perceived efficacy of medicine, as evident among the Igala-speaking peoples of the middle belt of Nigeria (Boston 1971, 202). The trade in medicinal substances and components – animal, vegetable, and mineral – can be on a vast scale as evident in the *kemwin-kemwin*, ‘anything and everything’ apothecaries shops in Benin City, Nigeria (Nevadomsky 1988, 73). Similarly, a survey of the largest market in animal remains for medicinal and magical purposes in West Africa, the so-called ‘fetish market’ at Lomé in Togo (Taylor and Fox 1992), recorded 15 bird species, 30 mammal species and six reptile species for sale as well as molluscs, amphibians, and echinoderms. The mammals represented included species from outside Togo such as the chimpanzee (*pongidae*), Baboon (*cercopithecidae*), lion (*felidae*), and aardvark (*orycteropodidae*), and Taylor and Fox estimated that the total number of animals represented were 420 reptiles, 4080 mammals, 4360 birds, 1540 snails, 244 fish, and 1570 amphibians (Taylor and Fox 1992, 120) attesting to the level of this trade. An insight into the potential meaning of animal remains used for medicine and protective purposes is provided by the Tiv (Nigeria) *kuraiyol*, ‘body protectors’ (Table 6).

Table 6. The imitative meaning of animal remains included in Tiv *kuraiyol* (compiled from Bergsma 1973, 149–51).

Species	Part	Meaning
<i>Gafa</i> (eagle)	Unspecified	Can fly like an eagle and avoid danger
<i>Ishuwa</i> (weaverbird)	Feathers	The weaverbird builds a nest high up and has to enter it upside down. The wearer would escape danger if thrown head over heels from a vehicle or canoe
<i>Hiar</i> (unspecified bird)	Feathers	This is a bird that flies high, near God. Wearing it will frighten away witches
<i>Ive</i> (monitor lizard)	Skin	An elusive lizard. The wearer can hide from or confuse an enemy
<i>Iyar</i> (Buffalo)	Hair from front of head	Immunity from the danger of a charging buffalo
<i>Gwe</i> (unspecified lizard)	Skin	A slippery lizard and thus the wearer can slip away from evil or danger
Goat	Dried penis	Power to have repeated intercourse without impotency
<i>Ambe</i> (crocodiles); <i>Begha</i> (lions); <i>Anyam</i> (leopards)	Claws, hair, or skin	Protect from attack by these animals

Syncretism, movement, storage

The transference of medicinal substances into world religious contexts also needs recognising. The boundaries between so-called world and indigenous religions can obviously be blurred (Bowie 2000; Insoll 2003), but conversion to world religion can lead to the continuation, syncretism, or adaptation and abandonment of medicinal practices, beliefs, and associated substances. Imperato (1977) describes these processes amongst the Bambara (Mali). Old cults, shrines, and beliefs could be abandoned but belief in the power of Qur'anic amulets (*higab*) for healing and protective purposes could increase with Qur'anic verses and other formulae written on paper by a marabout, encased in leather and worn on the body, or written on a wooden board, washed off and drunk. Repeatedly, the protective and/or medicinal power of the Arabic script has been commented on (Insoll 1996, 90–91), as by Mungo Park (1807, 57) who in his journey along the River Niger in the early nineteenth century observed that, 'all the natives of this part of Africa consider the art of writing as bordering on magic'.

Protective charms and amulets bearing Arabic script have been encountered archaeologically in sub-Saharan Africa. At Gao (Mali) a *kankarey* pot with an ink-drawn Arabic inscription running around it was recovered from an undated context during building work at a depth of 3 m (Insoll 1996, 30). The copper case for a *higab*, itself apparently represented by a fibrous deposit inside the case, was also found in Gao and dated to the early fifteenth to late sixteenth centuries AD (Insoll 2000, 134–35).

As an alternative to outright abandonment of older practices, substances, shrines, and associated material culture, Islamic-derived elements such as geomantic signs written on cloth or engraved on pieces of calabash could be integrated into non-Muslim power objects such as the Tiv *kuraiyol* (Bergsma 1973, 149), or Bambara *boliv* (Colley 2009, 43). Both objects that were assembled from a range of materials – mineral, animal, botanical, human; and elements – textual, liquid, fats, powder, and solid. Bravmann (1974, 88–93) also describes the impact of Muslim charms amongst non-Muslim populations in west central Ghana and the adjacent Cercle de Bondoukou in the Ivory Coast, which included the embedding of Islamic talismans in mud shrine altars as at Agyekuah and Jakari (Bravmann 1974, 93), i.e. practical syncretism of efficacious materials and proven formulae.

Medicinal substances can also be spread via, and literally on, the person through the agency of amulets and charms (e.g. Reynolds 1963, 91; Bergsma 1973). Arkell (1926, 91) refers to meeting an *eruki* or 'root-man' in Dar Masalit in western Sudan wearing a protective double necklace formed of pieces of sheep rib bones, c.8 cm apart and c.3 cm in length with each containing vegetable powder or pieces of root. In other instances, medicinal substances could be encased in cloth, fibre, wood, or metal packets and containers (see Mendonsa 1982, 102), as among non-Muslim Bambara where the *tafo* or 'verbal formulas that are materialized' could be made of small pieces of bones or herbs sealed in leather and worn around the affected part of the body (Imperato 1977, 64). These would rarely survive in archaeological contexts but could be modelled on the types of figurines already considered. Fagg (1990, 38), for example, interprets one of the Nok figurines from the site of Jemaa as depicting just above the elbow a smooth object held by four plaited cords, 'very like the type of charm worn regularly to this day'. Koma Land figurines also seem

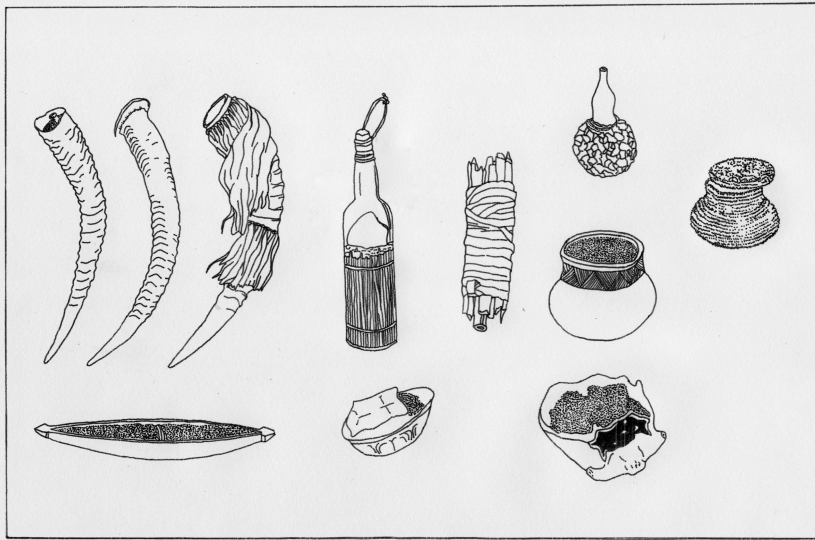


Figure 2. The diversity of Barotse medicine containers (not to scale; after Reynolds 1963, 71, 73, 75, 78, 82, 84, 87). Top (L–R): (1) and (2) Medicine horns (unspecified). (3) Medicine horn with cover. (4) Bottle. (5) Bundle of ‘medicinal roots and sticks’. (6, top) Gourd, seemingly with cover. (6, bottom) Clay pot. (7) Basket. Bottom (L–R): (1) Miniature canoe. (2) Tortoise shell. (3) Portion of human skull with beeswax and ‘lucky beans’ added to it.

to indicate charms having been worn on the body (see Kankpeyeng, Nukumbaan, and Insoll 2011).

The material culture associated with medicinal substance can be extremely diverse. Medicine containers, for example, can encompass the whole spectrum of available materials, reflecting the diversity of substances they contain. Reynolds (1963) (Figure 2) indicates the variety that can exist in his study of the Barotse (Zambia) where these containers included horns, snail and tortoise shells, skulls, sisal, cloth, and bark-cloth bags, skin wrappers, pots, gourds, and baskets, bottles, tins and enamelwares, and miniature wooden canoes, ‘aeroplanes’, and mortars. Unfortunately, accessing this diversity in the archaeological record would be problematic for reasons of preservation. Equally, the recurrent emphasis placed on the form, elemental association, texture, and colour of medicine recorded ethnographically (Table 7) would, for similar reasons, be elusive archaeologically.

Besides knowledge transfer the movement of substances often of precise provenance can be involved in establishing medicine shrines and in healing practices and treatments. This poses challenges for archaeological recognition through, for example, organic and geochemical analysis. Identifying medicinal substances in the archaeological record has rarely been done (Arnott 2002; Baker and Carr 2002), and never in sub-Saharan Africa. The difficulty of identification can be compounded where wholly natural materials, what Anderson and Kreamer (1989, 58) refer to as ‘containing nature’s power’, are used unaltered by anthropogenic action (see van Dongen, Fraser, and Insoll 2011). Further research on the analytical protocols and signatures is needed and the recent funding of relevant research by the Wellcome Trust is an indication that this might start to be achieved.

Table 7. Selected examples of medicines given importance according to texture and/or colour and/or form and/or elemental/association.

Ethno-linguistic group	Prominent features	Archaeological visibility
Chamba (Cameroon and Nigeria) (Fardon 1990, 175)	Form. Male cult medicine (<i>Cissus quadrangularis</i>), female cult medicine (<i>Amaryllidaceae</i>)	None
Shona (Zimbabwe) (Jacobson-Widding 1990, 67)	Elemental association. Ashes and salt as the end products of fire/ heat are used as medicines	None
Zulu (South Africa) (Berglund 1990, 270)	Colour and elemental association. Red iron ore/heat and black iron/cool. Forge 'dross' pounded as menstruation medicine and rust pounded as field medicine	None
Various (lower Congo) (Jacobson-Widding 1979, 177–8)	Colour. <i>Nkisi</i> Nkomina. Chalk (1), red or yellow ochre (2) and <i>tukula</i> -red dye if used for healing wounds and sores	None

Medicine and health in African archaeological contexts

It is possible to criticise both anthropological and historical approaches in their neglect of medicine shrines and especially their associated medicinal substances but this is more profound in sub-Saharan African archaeology. Recurrently, archaeologists have neglected medicine beyond, for example, physical indications of trauma or disease on skeletal remains (see Kankpeyeng, Nkumbaan, and Insoll 2011). This reflects general archaeological epistemology whereby palaeopathology, the study of past disease and injuries on skeletal materials, routinely neglects any possible connection with shrines, ritual, or religion (see for example Roberts and Manchester 1997; Mays 1998; Waldron 2001). This would seem to reflect the background from which such studies are generated, i.e. a Western empirical biomedical/scientific one where such factors might be abstracted (Singer and Baer 2007: 114–116; Fabrega 1980: 40, 89). In many archaeological contexts such a concern might be irrelevant, in others its omission could be central. A more accurate interpretation of past medicinal beliefs/practices/processes, at least in the African archaeological context, needs to embed an awareness of a possible ritual/religious/shrine dimension as either a direct or indirect, but certainly an implicit part of the healing process.

As noted, physical indications of trauma or disease on skeletal remains have been the focus of archaeological research in sub-Saharan Africa. In many contexts such a concern is warranted where a link with shrines, if at all relevant, would be impossible to reconstruct. Such is the case at Shum Laka rockshelter (Cameroon) where 18 human skeletons were excavated dated to between c.5000–1000 BC (De Maret 1996). Numerous palaeopathologies were recorded including dental diseases, unhealed trauma caused by an embedded stone arrowhead on a child of between 5–7 years age, joint diseases such as osteoarthritis, and stress indicators (Harris lines) on child skeletal material (Ribot, Orban, and de Maret 2001, 181).

Palaeopathology can and should be embedded, in research terms, in a medicine-based framework, and an example directly related to surgical procedures is skull trepanation. This has been recorded archaeologically in numerous contexts including African ones (Lisowski 1967, 652). Imperato (1977, 182) notes that trepanation was more common in East Africa than elsewhere in the continent and was possibly related to the prevalence of clubs – smashing – as opposed to stabbing and slashing weaponry, with trepanation accordingly employed for healing skull fractures. Schweinfurth (1874, 155), for instance, refers to the favourite weapon of the Dinka (Sudan) being a club or stick cut from *Balanites* or *Diospyrus mespiliformis*, and thus their neighbours, the Azande, called them ‘*A-Tagbondo*’ or ‘stick-people’. Margetts (1967, 691) does not make such a link but also stresses the commonplace nature of trepanation in East Africa. Tooth alteration, ‘dentistry’, for example tooth filing has also been recorded archaeologically, but in most instances this seems to be due to task-related wear (Haour and Pearson 2005, 431) or for ritual, initiation, or cosmetic, rather than medical purposes (Mower 1999, 40–42, 45–46; Reichart, Creutz, and Scheifele 2008, 54).

In some contexts, rock art can permit a potential insight into past healing and, to a lesser extent, medicinal practices. This is of relevance in two regions in particular, southern Africa and the Sahara. Lewis-Williams (1981, 76, 81), for example, describes various healing dances seemingly depicted in rock paintings in South Africa as at Fetcani Glen, Barkly East, and in the Natal Drakensberg (Lewis-Williams 1987, 167). The healing practices potentially represented, such as the ‘medicine man’ entering trance and nasal haemorrhaging, are interpreted via analogy with the ethnography of southern San groups such as the !Kung and /Xam (e.g. Marshall 1969; Katz 1982). On the very edge of the area considered here at Wadi Mineh in the Eastern Desert of Egypt there appears to be a childbirth scene represented in a rock engraving at site MLM1 (R. Simonis pers. comm. 29 April 2010). This depicts a standing female figure with outstretched arms and legs and with a smaller upside down human emerging from between her legs (see Judd 2009, 119).

Death has been a major focus of archaeological research in sub-Saharan Africa (e.g. De Maret 1985; Ribot, Orban, and de Maret 2001; Magnavita 2009), birth has not. Again, this is due to an absence of archaeological visibility, but beyond, theoretically, neonatal and perhaps mother and infant/neonatal burials, other indications might exist. Recurrent as a practice is placenta burial. Imperato (1977, 117) discusses various examples including amongst the Banyoro (Uganda) and Kababish (Sudan). He does not, however, specify the mechanisms for burial, i.e. if a container was used. The Talensi (see also Insoll 2011) bury umbilical cords in pots on the midden close to the family compound. Archaeologically, these pot burials were recorded during the excavation of a midden associated with a relatively recently abandoned compound in the Tamboog section of the Tong Hills (Insoll, MacLean, and Kankpeyeng 2008, 18). Sterner and David (2009, 8, 11) also describe placenta burial in upturned pots amongst the Sirak and Sukur of the Mandara Mountains (Cameroon and Nigeria).

Related directions for future research on medicine and health in African archaeological contexts could include, for instance, the incorporation of relevant genetic studies, thus reflecting the more general trend in palaeopathology identified by Singer and Baer (2007, 19). For instance, the investigation of genetic anaemia, in particular sickle cell anaemia, which is a disease with high rates of occurrence

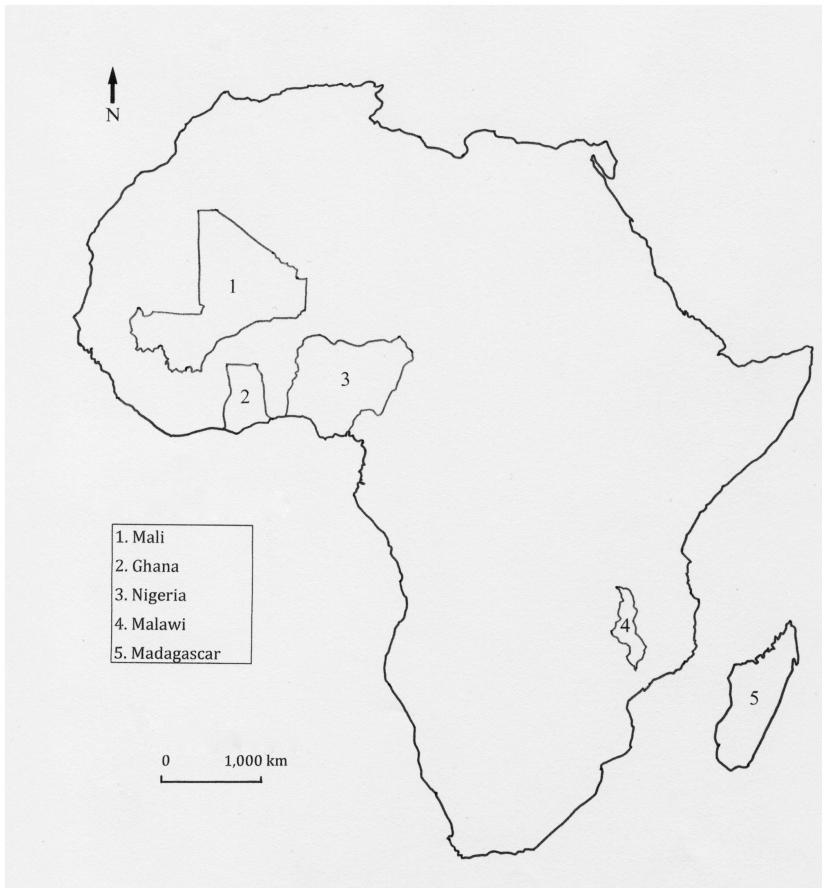


Figure 3. Map of Africa indicating the countries discussed (Brazil is obviously omitted).

today amongst populations in West, Central, and Eastern Africa. Roberts and Manchester (1997, 171) describe how anaemia precipitates two reactions in the skeleton. First, bone changes occur in the vertebrae, the skull, foot and hand bones, and pelvis, as a result of marrow enlargement and over-activity as the body attempts to produce more red blood cells, and second the death of the bone occurs as the blood vessels are blocked by the abnormal cells. Differentiating sickle cell from other anaemia in the archaeological record is also referred to as only rarely achieved, based on the similarity of cranial changes across anaemia types involved (Roberts and Manchester 1997, 171), although fossilized sickle cell anaemia cells seem to have been identified in the bone marrow of the skeleton of a young man excavated from a Hellenistic context (c.330–150 BC) on Failaka Island off Kuwait in the northern Arabian Gulf (Maat and Baig 1990, 271).

Conclusions

Medicinal substances and shrines can be vital in sustaining physical and mental wellbeing and in creating and defining personhood both dividualy and individually.

In seeking as far as possible to achieve an interpretive ‘thick text’ in the African context, medicine, shrines, and their substances must be acknowledged, explored, and analysed from a material perspective, past and present. It needs to be recognised that shrines, substance, and medicine are not peripheral but frequently central to exploring and understanding human ontology, society and belief in Africa, and that this can be addressed by adopting an interdisciplinary perspective such as that employed in this issue. The papers illustrate the diversity of approaches that can be employed in investigating shrines, substances, medicine, and healing in varied regions of sub-Saharan Africa (Figure 3). The contributors adequately contextualise their research so further introduction to the papers is unnecessary here.

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References

- Allman, Jean, and John Parker. 2005. *Tongnaab*. Bloomington: Indiana University Press.
- Almquist, A. 1991. Divination and the hunt in Pagibeti ideology. In *African divination systems*, ed. P.M. Peek, 101–11. Bloomington: Indiana University Press.
- Anderson, Martha G., and Christine M. Kreamer. 1989. *Wild spirits. Strong medicine*. New York: Centre for African Art.
- Apentiik, R. 1997. Balsa technologies and systems of thought. MA diss., University of Calgary.
- Arkell, A.J. 1926. Magic and medicine in Dar Masalit. *Sudan Notes and Records* 9: 89–94.
- Arnott, Robert, ed. 2002. *The archaeology of medicine*. BAR S1046. Oxford: Archaeopress.
- Baker, Patricia, and Gillian Carr. 2002. *Practitioners, practices and patients. New approaches to medical archaeology and anthropology*. Oxford: Oxbow Books.
- Berglund, A.I. 1990. Fertility as a mode of thought: Some Zulu examples. In *The creative communion*, eds. A. Jacobson-Widding and W. Van Beek, 250–70. Uppsala: Uppsala University Press.
- Bergsma, H.M. 1973. Tiv ‘Kuraiyol’ body protectors. *Africa* 43: 147–52.
- Blier, R. 1991. Diviners as alienists and annunciators among the Batammaliba of Togo. In *African divination systems*, ed. P.M. Peek, 73–90. Bloomington: Indiana University Press.
- Boston, J. 1971. Medicines and fetishes in Igala. *Africa* 41: 200–7.
- Bowie, Fiona. 2000. *The anthropology of religion*. Oxford: Blackwell.

- Boyd Christensen, J. 1959 (1968). The adaptive functions of Fanti priesthood. In *Continuity and change in African cultures*, ed. W.R. Bascom and M.J. Herskovits, 257–78. Chicago: University of Chicago Press.
- Bravmann, Rene. 1974. *Islam and tribal art in West Africa*. Cambridge: Cambridge University Press.
- Buxton, Jean. 1973. *Religion and healing in Mandari*. Oxford: Clarendon Press.
- Colleyn, Jean-Paul. 2009. *Bamana*. Milan: 5 Continents Editions.
- Colson, E. 1997. Places of power and shrines of the land. *Paideuma* 43: 47–57.
- Cory, Hans. 1956. *African figurines*. London: Faber and Faber.
- Courtright, P. 1987. Shrines. In *The encyclopedia of religion*, ed. M. Eliade, 299–302. London: Macmillan.
- Dawson, A.C. 2009. Introduction. In *Shrines in Africa*, ed. A.C. Dawson, vii–xvii. Calgary: University of Calgary Press.
- De Maret, Pierre. 1985. *Fouilles Archéologiques dans la Vallée de Haut-Lualaba, Zaïre*. Tervuren: Musée Royal de l’Afrique Centrale.
- De Maret, P. 1996. Shum Laka (Cameroon): Human burials and general perspectives. In *Aspects of African archaeology*, eds. G. Pwiti and R. Soper, 275–79. Harare: University of Zimbabwe Publications.
- Devisch, Rene. 1993. *Weaving the threads of life*. Chicago: Chicago University Press.
- Drewal, H.J. 1988. Beauty and being: Aesthetics and ontology in Yoruba body art. In *Marks of civilization*, ed. A. Rubin, 83–96. Los Angeles: Museum of Cultural History.
- Drewal, H.J. 1997. Art or accident: Yoruba body artists and their deity Ogun. In *Africa’s Ogun*, ed. S.T. Barnes, 235–60. Bloomington: Indiana University Press.
- Drewal, H.J., and J. Mason. 1997. Ogun and mind/body potentiality. In *Africa’s Ogun*, ed. S.T. Barnes, 332–52. Bloomington: Indiana University Press.
- Evans-Pritchard, Edward Evan. 1976. *Witchcraft, oracles, and magic among the Azande*. Oxford: Clarendon Press.
- Fabrega, Horatio. 1980. *Disease and social behaviour. An interdisciplinary perspective*. Cambridge, MA: MIT Press.
- Fagg, Bernard. 1990. *Nok Terracottas*. London: Ethnographica.
- Fardon, Richard. 1990. *Between God, the dead and the wild*. Washington, DC: Smithsonian Institution Press.
- Field, Margaret. 1937. *Religion and medicine of the Gã people*. London: Oxford University Press.
- Foucher, E. 1994. The cult of Muslim saints in Harar: Religious dimension. In *Proceedings of the Eleventh International Conference of Ethiopian Studies*, eds. B. Zewde, R. Pankhurst and T. Beyne, 71–9. Addis Ababa: Institute of Ethiopian Studies.
- Garlake, P. 1974. Excavations at Obalara’s land, Ife: An interim report. *West African Journal of Archaeology* 4: 111–48.
- Glaze, A.J. 1981. *Art and death in a Senufo village*. Bloomington: Indiana University Press.
- Goody, J. 1967. *The social organisation of the Lo Wiili*. London: HMSO.
- Haour, A., and J.A. Pearson. 2005. An instance of dental modification on a human skeleton from Niger, West Africa. *Oxford Journal of Archaeology* 24: 427–33.
- Harley, George Way. 1970. *Native African medicine*. London: Frank Cass.
- Imperato, Pascal James. 1977. *African folk medicine*. Baltimore, MD: York Press.
- Insoll, Timothy. 1996. *Islam, archaeology and history. Gao region (Mali) ca. AD 900–1250*. BAR S647. Oxford: Tempus Reparatum.
- Insoll, Timothy. 2000. *Urbanism, archaeology and trade. Further observations on the Gao region (Mali)*. BAR S829. Oxford: British Archaeological Reports.
- Insoll, Timothy. 2003. *The archaeology of Islam in sub-Saharan Africa*. Cambridge: Cambridge University Press.
- Insoll, Timothy. 2004. *Archaeology, ritual, religion*. London: Routledge.

- Insoll, T. 2006. Shrine franchising and the Neolithic in the British Isles: Some observations based upon the Tallensi, Northern Ghana. *Cambridge Archaeological Journal* 16: 223–38.
- Insoll, T. 2008. Negotiating the archaeology of destiny. An exploration of interpretive possibilities through Tallensi shrines. *Journal of Social Archaeology* 8: 380–403.
- Insoll, T. 2010. Talensi animal sacrifice and its archaeological implications. *World Archaeology* 42: 231–44.
- Insoll, T. 2011. Substance and materiality? The archaeology of Talensi medicine shrines and medicinal practices. *Anthropology & Medicine* 18, no. 2: 181–203.
- Insoll, T., R. MacLean, and B. Kankpeyeng. 2008. Excavations and surveys in the Tongo Hills, Upper East Region, and Birifor, Upper West Region, Ghana. March–April 2008. A preliminary fieldwork report. *Nyame Akuma* 69: 11–22.
- Jacobson-Widding, Anita. 1979. *Red-white-black as a mode of thought*. Uppsala: Uppsala University Press.
- Jacobson-Widding, A. 1990. The fertility of incest. In *The Creative Communion*, eds. A. Jacobson-Widding and W. Van Beek, 47–73. Uppsala: Uppsala University Press.
- James, B.T. 2009. Broadening interpretive perspectives on indigenous healing: The case of Bori spirit possession amongst the Hausa. MA Thesis, University of Manchester.
- Janzen, John. 1992. *Ngoma. Discourses of healing in central and southern Africa*. Berkeley, CA: University of California Press.
- Judd, Tony. (2009). *Rock art of the eastern desert of Egypt*. BAR S2008. Oxford: Archaeopress.
- Kankpeyeng, B.W., S.N. Nkumbaan, and T. Insoll. 2011. Indigenous cosmology, art forms and past medicinal practices: Towards an interpretation of ancient Koma Land sites in Northern Ghana. *Anthropology & Medicine* 18, no. 2: 205–216.
- Katz, Richard. 1982. *Boiling energy*. Cambridge, MA: Harvard University Press.
- Lebeuf, Jean-Paul, and A. Masson Detourbet. 1950. *La Civilisation du Tchad*. Paris: Payot.
- Lebeuf, Jean-Paul, Françoise Treinen-Claustre, and Jean Courtin. 1980. *Le Gisement Sao de Mdaga*. Paris: Societe d'Ethnographie.
- Lentz, C. 2009. Constructing ritual protection on an expanding settlement frontier: Earth shrines in the Black Volta region. In *Shrines in Africa*, ed. A.C. Dawson, 121–52. Calgary: University of Calgary Press.
- Lewis Wall, L. 1988. *Hausa medicine*. London: Duke University Press.
- Lewis-Williams, J. David. 1981. *Believing and seeing*. London: Academic Press.
- Lewis-Williams, J.D. 1987. A dream of Eland: An unexplored component of San shamanism and rock art. *World Archaeology* 19: 165–77.
- Lienhardt, Godfrey. 1961 (1987). *Divinity and experience*. Oxford: Oxford University Press.
- Lisowski, F.P. 1967. Prehistoric and early historic trepanation. In *Diseases in antiquity*, eds. D. Brothwell and A.T. Sandison, 651–72. Springfield, IL: Charles C. Thomas.
- Little, William, Henry Watson Fowler, and Jessie Coulson. 1973. *The shorter Oxford English dictionary*. Oxford: Clarendon Press.
- Maat, G.J.R., and M.S. Baig. 1990. Microscopy electron scanning of fossilized sickle-cells. *International Journal of Anthropology* 5: 271–6.
- Magnavita, S. 2009. Sahelian crossroads: Some aspects on the Iron Age sites of Kissi, Burkina Faso. In *Crossroads/Carrefour Sahel*, eds. S. Magnavita, Koté, P. Breunig and O.A. Idé, 79–104. Frankfurt: Africa Magna Verlag.
- Margetts, E.L. 1967. Trepanation of the skull by the medicine-men of primitive cultures, with particular reference to present-day native East African practice. In *Diseases in antiquity*, eds. D. Brothwell and A.T. Sandison, 673–701. Springfield, IL: Charles C. Thomas.
- Marshall, L. 1969. The medicine dance of the !Kung bushmen. *Africa* 39: 347–81.
- Mather, C. 1999. An ethnoarchaeology of Kusasi shrines, upper east region, Ghana. PhD Thesis, University of Calgary.

- Mather, C. 2009. Shrines and compound abandonment: Ethnoarchaeological observations in northern Ghana. In *Shrines in Africa*, ed. A.C. Dawson, 95–120. Calgary: University of Calgary Press.
- Mays, Simon. 1998. *The archaeology of human bones*. London: Routledge.
- Meek, Charles Kingsley. 1931. *A Sudanese kingdom*. London: Kegan Paul.
- Mendonsa, Eugene. 1982. *The politics of divination*. Berkeley: University of California Press.
- Mercader, J. 2003. Foragers of the Congo. In *Under the canopy. The archaeology of tropical rain forests*, ed. J. Mercader, 93–116. Brunswick, NJ: Rutgers University Press.
- Mower, J.P. 1999. Deliberate ante-mortem dental modification and its implications in archaeology, ethnography and anthropology. *Papers from the Institute of Archaeology* 10: 37–53.
- Nevadomsky, J. 1988. The apothecary shop in Benin City. *African Arts* 22: 72–83, 100.
- Ngubane, Harriet. 1977. *Body and mind in Zulu medicine*. London: Academic Press.
- Nutor, B.K. 2010. An archaeology of indigenous religion at Dzake-Peki, Volta region. MPhil Thesis, University of Ghana, Legon.
- Ogundiran, Akinwumi. 2002. *Archaeology and history in Ilàrè district (central Yorubaland, Nigeria) 1200–1900 AD*. BAR S1090. Oxford: Archaeopress.
- Park, Mungo. 1807. *Travels in the interior districts of Africa, 1795, 1796, and 1797*. London: W. Bulmer.
- Peek, P.M. 1991. Introduction. The study of divination past and present. In *African divination systems*, ed. P.M. Peek, 1–22. Bloomington: Indiana University Press.
- Pemberton, John, ed. 2000. *Insight and artistry in African divination*. Washington: Smithsonian Institution Press.
- Phillips, Tom, ed. 1995. *Africa. The art of a continent*. London: Royal Academy of Arts.
- Reichart, P., U. Creutz, and C. Scheifele. 2008. Dental mutilations and associated alveolar bone pathology in African skulls of the anthropological skull collection, Charité, Berlin. *Journal of Oral Pathology and Medicine* 37: 50–5.
- Rekdal, O.B. 1999. Cross-cultural healing in east African ethnography. *Medical Anthropology Quarterly* 13: 458–82.
- Reynolds, Barrie. 1963. *Magic, divination and witchcraft among the Barotse of northern Rhodesia*. London: Chatto and Windus.
- Ribot, Isabelle, Rosine Orban, and Pierre de Maret. 2001. *The prehistoric burials of Shum Laka rockshelter*. Tervuren: Musée Royal de l'Afrique Centrale.
- Roberts, Charlotte, and Keith Manchester. 1997. *The archaeology of disease*. Stroud: Sutton.
- Rupp, N., J. Ameje, and P. Breunig. 2005. New studies on the Nok culture of central Nigeria. *Journal of African Archaeology* 3: 283–90.
- Saako, M.M. 2009. An archaeological perspective of the culture history of Birifoh-Sila Yiri, upper west region, Ghana. MPhil thesis, University of Ghana, Legon.
- Samuelsen, H. 2001. Infusions of health: The popularity of vaccinations among Bissa in Burkina Faso. *Anthropology and Medicine* 8: 163–75.
- Schoffeleers, J. Matthew, ed. 1979 (1999). *Guardians of the land*. Gweru: Mambo Press.
- Schweinfurth, Georg 1874. *The heart of Africa*. London: Sampson Low, Marston, Low, and Searle.
- Sheridan, M.J. 2008. The dynamics of African sacred groves. In *African sacred groves*, eds. M.J. Sheridan and C. Nyamweru, 9–41. Oxford: James Currey.
- Singer, Merrill, and Hans Baer. 2007. *Introducing medical anthropology*. Lanham: Altamira.
- Staugård, Frants. 1985. *Traditional healers*. Gaborone: Ipelegeng Publishers.
- Sterner, J., and N. David. 2009. Pots, stones, and potsherds: Shrines in the Mandara mountains (North Cameroon and Northeastern Nigeria). In *Shrines in Africa*, ed. A.C. Dawson, 1–39. Calgary: University of Calgary Press.

- Taylor, M.E., and J. Fox. 1992. The fetish market, Lomé, Togo. *The Nigerian Field* 57: 119–25.
- Tonkin, E. 2004. Consulting Ku Jlople: Some histories of oracles in West Africa. *Journal of the Royal Anthropological Institute (N.S.)* 10: 539–560.
- Udvardy, M. 1990. *Kifudu*: A female fertility cult among the Giriama. In *The creative communion*, eds. A. Jacobson-Widding and W. Van Beek, 137–52. Uppsala: Uppsala University Press.
- Van Binsbergen, W.M.J. 1979 (1999). Explorations in the history and sociology of territorial cults in Zambia. In *Guardians of the land*, ed. J.M. Schoffeleers, 47–88. Gweru: Mambo Press.
- van Dongen, B.E., S.E. Fraser, and T. Insoll. 2011. The composition and origin of Ghana medicine clays. *Anthropology & Medicine* 18, no. 2: 285–302.
- Waldron, Tony. 2001. *Shadows in the soil. Human bones and archaeology*. Stroud: Tempus.
- Werbner, Richard, ed. 1977. *Regional cults*. London: Academic Press.
- Willett, Frank. 1967. *Ife in the history of West African sculpture*. London: Thames and Hudson.