Anthropology & Medicine
Vol. 18, No. 2, August 2011, 205–216

Routledge
Taylor & Francis Group

Indigenous cosmology, art forms and past medicinal practices: towards an interpretation of ancient Koma Land sites in northern Ghana

Benjamin W. Kankpeyeng[a]*, Samuel N. Nkumbaan[a] and Timothy Insoll[b]

[a]*Department of Archaeology and Heritage Studies, University of Ghana, PO Box LG3, Legon, Accra, Ghana;* [b]*Archaeology, School of Arts, Histories, and Cultures, University of Manchester, UK*

(*Received 1 June 2010; final version received 1 January 2011*)

The ancient cultural tradition in the middle belt region of northern Ghana, with its stone circle and house mounds, contains varied material culture. The unique contextual arrangements of the material culture within the stone circle mounds and the diverse ceramic art forms, as well as their ethnographic analogues in West Africa, indicate the mounds' association with past shrines that have multiple functions, including curative purposes. The archaeology of the mounds and ethnographic associations related to past indigenous medical practices is reviewed and discussed. This paper will also consider how some of the figurines through which the Koma tradition has achieved 'fame' possibly functioned as physical representations of disease, perhaps underpinned by intentions of transference from afflicted to image. The notions of protection and healing are also examined with reference to the resorted and disarticulated human remains sometimes recovered from the sites.

Keywords: Koma; figurines; cosmology; shrines; medicine; Ghana

Introduction

Archaeologists attempt to reconstruct and interpret the past through material remains. The task of attempting to understand past peoples, their behaviours and minds, has compelled archaeologists to rely on approaches associated with many disciplines. However, crucial to any archaeological interpretation for the revelation of past behaviour dynamics is the structure of the archaeological record (Hodder 1992, 1999). Archaeological sites are complex matrices. Archaeological research is vital for understanding the internal structure, formation, and relationships between site sediments, depositional processes, and artefacts in the matrix. Artefacts are not best understood when considered independent of the context from which they were recovered. Therefore much archaeological reasoning is dependent on context, and in attempting to reconstruct past medicinal practices context is similarly vital.

Context is where meaning is located and is central to its interpretation, for as Beaudry, Cook, and Mrozowski (1996, 281) note, 'recovery of meaning is predicated on recovery of context because context not only frames meaning by tying it to actual

*Corresponding author. Email: bkankpeyeng@ug.edu.gh

ISSN 1364–8470 print/ISSN 1469–2910 online

DOI: 10.1080/13648470.2011.591197
http://www.informaworld.com

situations and events but it is inextricably bound up with meaning. The existence of context implies the presence of meanings functioning within it and conversely meanings cannot exist in the absence of context'. In some situations, unusual or unexpected contexts assist the archaeologist in locating renegotiated or redefined meanings, especially where artefacts have been used for purposes other than those related to their original meaning. Therefore, the analysis of cultural texts, context and artefacts, gives us insights into past peoples' attitudes toward the world, as Groleau (2009, 399) notes, 'while some objects are purpose-made for sacrifice and appear to be treated as animated beings, other mundane artefacts are routinely transformed both through associations with restricted objects and through their incorporation in ritual practices'. Both categories of objects appear to be represented contextually in the Koma Land materials.

Consequently, the semiotic aspects of material culture are reliant on the contexts in which these objects are found, and deciphering the multiple meanings embedded in these artefacts and their contexts entails cosmological reasoning. Reconstructing past belief systems or cosmologies is crucial for understanding people's association with different artefacts (Insoll 2004), and their production and disposal. Cosmology can be far broader than religion, for according to some observers religion and ideology are subsets within cosmology (Flannery and Marcus 1996, 352–6). As has been frequently noted (e.g. Saliba 1976; Bowie 2000), the use of the term 'religion' is of comparatively recent origin, even if it is debatable as to when (Insoll 2004, 6–7). Additionally, it has to be acknowledged that 'the separation of religion and science is a modern development that emerged in the west in the enlightenment period. Before then there was no rivalry or separation between religion and science as perceived today' (arap Chepkwony and Kiplangat 2005, 2)

Archaeology, African cosmology and African medicine

African medicine and African religion are intricately linked, and inseparable (Chavunduka 2009; arap Chepkwony 2003; Tasie 2003). This relationship can be explained by noting, first, that African general theories of illness are very broad, and includes 'African theology' that 'attempts not only to explain illness and disease but also the relations between God and the universe' (Mbiti 1990, 43; Chavunduka 2009, 1). Second, many traditional healers are also religious leaders and vice versa. The intricate nature of the relationship partly explains the failure of early Christian Missionaries to convince converts to the Christian faith to abandon their African religious practices, as well as their condemnation of indigenous African religions. The continuing and increasing patronage of African rites and ritual practices further demonstrates the indigenous attitudes and their views that many indigenous practices are not against Christian faith and morality. Similarly, Islam in Africa has had to embrace some rites and rituals from indigenous religions to succeed (Insoll 2003), and thus was able to win significant converts in some areas, as in the Western Sahel of Mali (Insoll 1996). Christianity in recent times has incorporated African modes of worship, and some are even calling for the Africanization of worship practices, notably the Catholic Church under the Second Vatican Council or 'Vatican II' (Isichei 1995, 327–31).

In modern healthcare, the 'physician performs two indivisible, but distinguishable central tasks: understanding disease and understanding the patient'

(McWhinney 1976, 98; Singer and Baer 2007). Understanding a patient as a person helps in fully understanding a patient's disease. The art of medicine is the process by which a patient is known or understood. The science of medicine refers to the art of understanding a patient's disease (Fabrega 1980; Singer and Baer 2007). The practice of traditional African medicine is not different. To understand disease, traditional medicine takes into account social and psychological factors, because the healers are interested in a whole range of social factors (Twumasi 2005, 29). The potentiality of traditional medical practice is derived from the supernatural assumptions underlying the practice (Twumasi 2005, 24), and the potentiality of herbal treatment is sought in terms of the spiritual world. Disease or illness is frequently considered as associated with ancestor spirit anger (Okpako 2006, 239), particularly the non-adherence to strict moral laws. Therefore, healing requires the identification or diagnosis of the cause of sickness before the prescription or application of vegetable, animal, and mineral substances or cultural methods. Divination and incantation also plays a crucial role in indigenous African medicine and healing practices (e.g. Burton 1991, 46).

Clay sculptural figurines, such as some of those recovered from the Koma Land excavations (see for example Anquandah 2003; Kankpeyeng and Nkumbaan 2008, 2009) usually lack naturalistic features and can only be explained in terms of having philosophical, religious or cosmological underpinning, and may relate to indigenous medical practice as shown below. The nature of diseases, either contagious or simple headaches or stomach-aches may be attributed to a number of spiritual issues. It is believed that one gets susceptible to various forms of sicknesses – i.e. the breakdown of the immune system – when the perceived ancestral protection is lacking or weak; a state resulting from offending the ancestral spirits. The anger of the ancestors manifests itself in misfortune, including attacks by witches and illnesses. The healing of such diseases requires the intervention of ancestral spirits through shrines. The witches transform themselves into various animals – as birds, cats, and so on – and attack the soul of the weakened individual. The diagnosis of diseases is done through consultations with diviners, who determine the causes, and prescribe the ritual and herbs for treatment. This act of diagnosing the form of sickness may be similar to general medical practice where a physician attempts to understand his or her patients by taking their histories, and – possibly together with chemical tests – diagnoses the relevant disease(s) or illness(es) and prescribes medication. In instances where the bad spirits or malevolent forces are perceived as strong enough to endure all the hardships wrought by the healer, it is believed that they can be lured elsewhere by sorcery to take their abode in a scapegoat or an inanimate object, usually sculptural pieces (Twumasi 2005, 39). Representations of this practice can make such sculptural pieces assume unnatural or stylistic forms.

Much healing in Africa associated with indigenous belief systems occurs in shrines with the disposal of the associated materials at the shrines or other designated areas by shrine operators or the healers. Some aspects of indigenous African medicine are thus associated with discard behaviour, which might involve the entire assemblage of material culture used in such practices, and these discard behaviours can be accompanied by rituals, including sacrifices that may entail the shedding of blood of living animals.

The archaeological visibility of some aspects of past medicinal practices has been established from skeletal remains, for example dental procedures such as tooth filling

(Roberts and Manchester 1997, 62), amputation (Roberts and Manchester 1997, 90), or trephination (Waldron 2001, 115–16). In addition, it is now possible to identify various diseases, such as tuberculosis (Waldron 2007, 200–4) and leprosy (Waldron 2001, 101) from human skeletal remains. Ethnographic examples show that both organic and non-organic materials are used in healing processes as in the Talensi case study discussed by two of the contributors to this issue (see Parker 2011, and also Insoll 2011b). Unfortunately, organic materials only rarely survive in the archaeological record. However, substantial evidence for healing practices can be recovered archaeologically (see Insoll 2011a, introduction to this issue). African medicinal practices can be understood archaeologically through the recovery of artefacts used in the diagnosis of various ailments, processing of medicinal substances, and material representations of the treatment process such as figurines.

Central to understanding and interpreting aspects of the assemblage of artefacts or equipment that might have been used in indigenous medical practices are African perceptions of the comparative concept of 'art'. The term 'art' is seemingly only associated with European languages, being derived from the old French *ars* or 'skill' (Morphy 2002, 649). In fact, the Western ideas of art and aesthetics are difficult to transfer cross-culturally (MacClancy 1997, 4; Morphy 2002, 653). The term art or its synonyms is unknown within most African indigenous languages. The notion of African art for purely aesthetic and gallery purposes is an imposed one (Ravenhill 1987, 34). Westerners have merely reduced many African ritualized objects to the status of 'art' and commodities (McIntosh 1989, 76). In reality, 'artistic' objects in Africa are functional, and associated with rituals tied to indigenous cosmology or worldview. The continued and consistent use of well-designed and carefully created objects has been an essential ingredient in recipes for healing in sub-Saharan Africa, an aspect of alchemy probably in much the same way as objects were used by their Islamic or European peers in the pre-modern era (Ghent 1994, 9).

The major feature distinguishing African alchemy from similar practices of other areas of the world is its association with figurative sculpture, paintings, or masks (e.g. MacGaffey 1993). Many body scarifications in sub-Saharan Africa are erroneously considered as beauty symbols, rather than associated with rituals of medicinal practices or linked with cosmology. Scarification of the body can be for medicinal or healing purposes rather than for beautification, and it can be both. It can also be a means for establishing corporate, group, or ethnic identity. For curing, the skin near the affected part is lightly incised and appropriate medicine, usually of plant origin, rubbed in or applied (see Insoll 2011a, introduction, this issue). Medicinal incisions might leave no mark or merely a faint scar, whereas cosmetic scars generally take the form of a small keloid bump or large scars (see David, Sterner, and Gavua 1988, 370; Bohannan 1988, 79). Archaeological sites with past sculptural traditions, therefore, have the potential to enrich our knowledge on past ritual practices, especially medicinal ones, through looking for such features in association with other categories of material culture such as figurines.

Koma Land archaeology

Within the basins of the Sisili and Kulpawn rivers – two major tributaries of the Volta River – is an extensive archaeological region covering some 9000 km^2 within which are numerous mounds containing anthropomorphic and zoomorphic

terracotta figurines together with human remains, grinding stones and querns, and copious quantities of ceramic sherds and vessels (Anquandah 2003; Kankpeyeng and Nkumbaan 2008, 2009). Preliminary survey and excavation were conducted in Komaland in 1985 and the mounds were initially identified as burial mounds, and a research focus was placed on the village of Yikpabongo (Anquandah and van Ham 1985). Renewed and expanded surveying has been undertaken from 2006 to the present, and this has resulted in the identification that the mounds in fact consist of two forms – house mounds and stone circle mounds containing pottery. The configuration of the stone circle mounds consists of small stones, grinding stones, figurines, and large quantities of pottery. House mound surface configurations vary and are composed of scatters of pottery and, in rare cases, grinding stones. They are also much larger than the stone circle mounds. Elaborate burials containing grave goods and with ceramic sherds covering the skeletal remains have been recorded in house mounds. For example, one burial at Yikpabongo (YK10-4) had iron bracelets around the lower legs, and another at Tando Fagusa, 24 km southeast, was recovered with twisted brass and glass beads around the neck and bracelets around the arms.

The burial identified in the house mound in Yikpabongo in January 2010 was approximately 170 cm from the surface and has been radiocarbon dated to Cal AD 540 to 650 (Table 1). An additional 11 burials were recorded in two house mounds at Tando-Fagusa (nine burials were recovered from Tando Fagusa within a house mound designated TDF-HM12 in 2008, and two burials from a test unit 2 designated TDF-TP2 in 2010). These, based on the completeness of skeletal representation and the recurrent posture with the head placed to the southwest seem to correlate with regular oriented patterned burials as found within northern Ghana. The type, distribution and contextual material arrangements within the stone circle mounds are typical of those associated with ancient shrines with potentially multiple functions (Kankpeyeng and Nkumbaan 2009). For example, the manner of deposition of the human remains encountered within two different stone circle mounds at Yikpabongo and the contextual arrangements of the associated material culture, both horizontally and vertically, is probably indicative of secondary burial, and akin to ritual

Table 1. Radiocarbon (C14) and thermoluminescence (TL) dates from Koma Land (2006–2010).

Type	Site	Sample No.	Date
C14	Yikpabongo	YK10-3-N-10-L2 (Beta-274104)	Cal AD 1010 to 1170 (970 ± 40 BP)
C14	Yikpabongo	YK10-4-10-B (Beta-274105	Cal AD 540 to 650 (1470 ± 40 BP)
TL	Yikpabongo	K1 – KLR-6975a-d	AD 1317 ± 24 (Average date reported)
TL	Yikpabongo	K2 – KLR-6976a-d	AD 1012 ± 40 (Average date reported)
TL	Yikpabongo	K3 – KLR-6977a-d	AD 979 ± 39 (Average date reported)
TL	Yikpabongo	K5 – KLR-6979	AD 1287 ± 39 (Average date reported)
C14	Tando Fagusa	Beta 08/T1(S)/165	Cal AD 680 to 890 (1230 ± 40 BP)
C14	Tando Fagusa	Uppsala*	Cal AD 535 to 652 (1475 ± 35 BP)

*Three other C14 dates have been obtained from Tando Fagusa but these are currently embargoed as they are a key element of a PhD thesis.

action in ancient shrines. In January 2007, a single skull was recovered from unit designated YK07-2-D2 without traces of any other human skeletal remains. The skull seems to have been placed facing the ground. In January 2010, a second skull was encountered on a different stone circle mound (YK10-3) with the teeth removed and placed to the East of the skull and the jaw to the South. The long bones were placed beneath the jaw. This has been radiocarbon dated to Cal AD 1010 to 1170 (Table 1). Above the skull were clay figurines of humans and animals, large quantities of pottery, and rock querns and grinders.

The material culture assemblage and contexts within the stone mounds portray strong elements of a complex belief system that was practised from the sixth to twelfth centuries AD, as indicated by the radiocarbon dating of organic materials and thermoluminescence dating of ceramics (Table 1). The terracotta figurines potentially relate to elements of spirituality (Anquandah 2003; Dagan 1989), but the use of the figurines and some of the other associated artefacts seems to also relate to African medicinal and healing practices.

Koma sites as representative of past curative practices

The role of sculptured pieces in African alchemy suggests that the terracotta figures within the mound complexes could be associated, in part, with healing and related rituals within the communities that occupied Koma Land in its high point of occupation between the sixth to twelfth centuries AD (Kankpeyeng and Nkumbaan 2009, 200). The variations in style between figurines from the different sites of Yikpabongo and Tando-Fagusa portray, besides some difference in chronology, difference in functions, differences in worldviews of the contiguous communities, or different experiences or curative practices, such as, for example, in the more abstract figurine forms evident at Tando Fagusa.

Ethnographic collections illustrate the application of organic substances to figurines associated with African alchemic traditions (Ghent 1994; MacGaffey 1993; Biebuyck and Herreman 1995), and it is possible that ancient Koma Land populations would have utilized such forms of substances for similar purposes. Proving this archaeologically, however, is difficult (see van Dongen, Fraser, and Insoll 2011). Visual examination has identified stains on some figurines that might provide clues to the organic substances, including medicinal ones that might have been utilised. The recurrence of libations holes on some of the figurines might yield the remains of the substances applied inside the figurines. Organic and non-organic residue and element analysis is ongoing at the Ghana Atomic Energy Commission and the University of Manchester, so this remains hypothetical at present.

The presence of phallic objects, and motifs on the heads and bodies of the human figures that portray female and male genitalia, are potentially also connected with fertility rituals and related healing processes (Figure 1). Conical shaped objects, some paired were perhaps reflections of horns that provided transformative and healing powers to the shrines. Antelope and buffalo horns, for example, have been recorded as being used as containers for medicinal and 'magical' substances in West Africa (e.g. Glaze 1981, 137). It is likely the holes in the clay objects were filled with strong substances that helped in the magico-ritual functions performed. Generic conically-shaped fired clay objects have also been recovered from elsewhere in Ghana at the

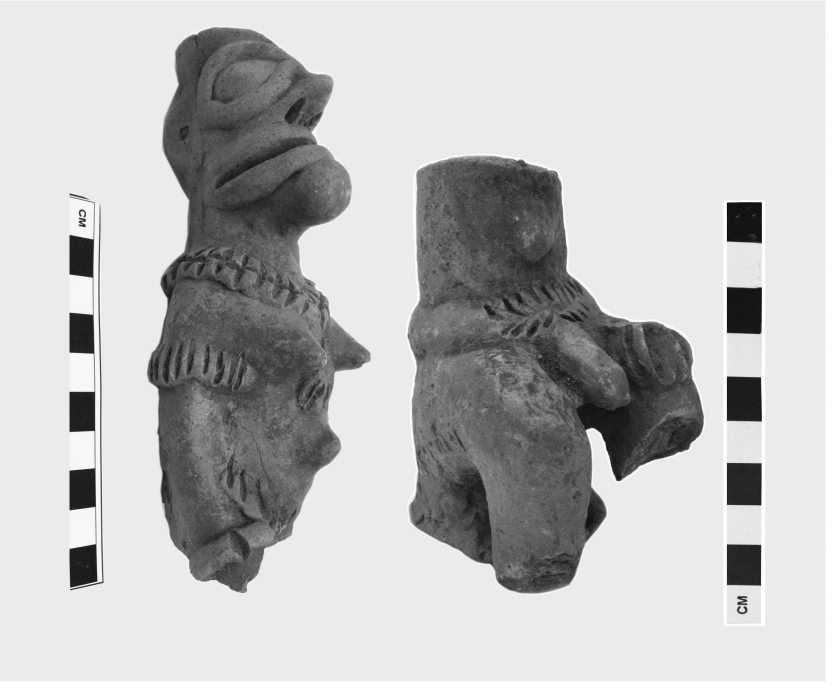

Figure 1. Phallic ceramic figurine (right) and a female figurine (left) recovered from 2007 excavations in Yikpabongo.

Nyoo shrine, in first millennium AD contexts, at Tengzug (Insoll, Kankpeyeng, and MacLean 2009, 55; see Insoll 2011b), and at Kliwor (W. Gblerkpor personal communication).

In addition, the abundance of querns and grinding stones within features containing figurines may reflect the processing of medicinal plants, mostly made up of roots, herbs and tree bark. Ethnographically, it is known that some of these are carbonized and ground using grinding stones and querns into powder. This is either applied directly to the affected parts of the body or mixed with water or locally brewed drinks for the sick persons to take (see Insoll 2011b). Food processing artefacts used for medicinal purposes can then be discarded together with all the other associated objects used in the healing process. Within the stone mounds at Yikpabongo were clusters of material culture that included food processing equipment such as grinding stones and querns (Figure 2), and the discard of these objects and their entering the archaeological record may relate to the completion of such rituals. In the extant Kilorisi shrine at Yikpabongo, cultural materials have been recorded as potentially identified with the processing of medicinal substances include grinding stones and querns, broken pots, a calabash; clay objects moulded to resemble stones, and a metal pot (Ampofo Manu 2008, 19).

Two of the figurines recovered from the Yikpabongo excavations depict birds with human faces (Kankpeyeng and Nkumbaan 2008, 97; 2009, 6–7). The figurines depicting birds may relate to exorcising witchcraft from witches or healing people

Figure 2. Two distinct clusters of material culture exposed in the 2008 excavations at Yikpabongo.

Figure 3. Crocodile figurine with appliqué spots on its back recovered from the 2008 excavations in Yikpabongo.

that have been haunted by them. The belief in witchcraft and its operation is common in West Africa. In particular, witches assume animal forms such as birds, bats, or reptiles and, over periods of time, devour a victim's organs, as is believed, for example, among the Bambara (Imperato 1977). Two complete and one fragmentary figurine resemble crocodiles with spotted backs, represented by appliqué, rather than scales, perhaps paralleling examples known from certain West African societies where inanimate objects are produced and diseases or powerful demons cast/transferred onto them from afflicted human beings (Kankpeyeng and Nkumbaan 2009, 10) (Figure 3). There are also human figures with multiple heads and faces represented, as, for instance, with 78 single heads, six double headed and three

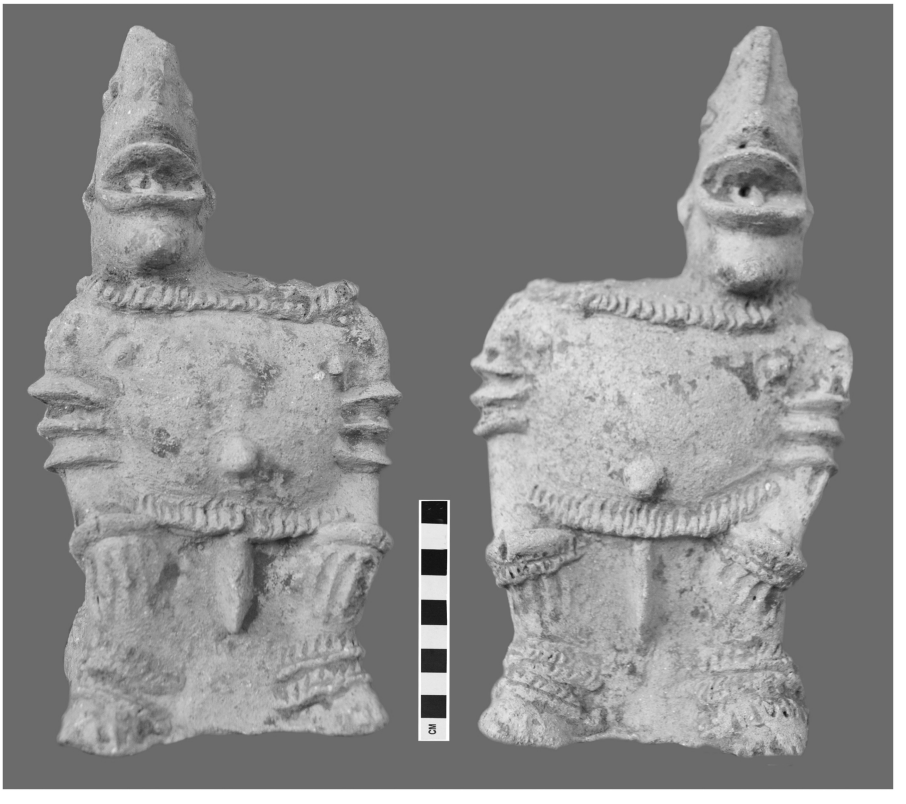

Figure 4. Four-faced human figurine recovered from the 2008 excavations in Yikpabongo.

four-faced figures recorded in the total 368 human-like figurines and figurine fragments recovered in the 2007 season (Figure 4).

Conclusion

The artefact assemblage recovered, and the features and contexts examined during the archaeological research at Yikpabongo and Tando Fagusa in Koma Land have been interpreted, in part, via ethnographic analogy with indigenous beliefs and practices within West Africa and, to a lesser extent, Africa more generally. This method has facilitated the reinterpretation of the Koma stone circle mounds to include, as a partial interpretation, purposes related to medicinal practices. Human beings have always asked for divine intervention in health matters throughout the world. The separation of religion and science is only a recent phenomenon (Bowie 2000, 246–7; arap Chepkwony 2003; arap Chepkwony and Kiplangat 2005, 2). The archaeological record of many cultures and sites would include aspects related to medicinal practices. Therefore, it can be suggested that the incorporation of spirituality in healing processes is potentially archaeologically recoverable. Archaeological interpretation is subjective since the past can never be completely recovered but this should not stop archaeologists from aspiring to recover fragments

of the past, of which those related to medicine form a part. The application of appropriate methodology and modern technology might enhance archaeological interpretations of the past in relation to curative practices, but this is still work in progress so remains to be established.

Acknowledgements

The authors acknowledge with profound gratitude the support from the GDARCH project funded by DANIDA, the School of Research and Graduate Studies and the Faculty of Social Studies of the University of Ghana, the Ghana Museums and Monuments Board, and the Cultural Initiatives Support Project (CISP) funded by a European Union Grant for the fieldwork at Yikpabongo. We are also grateful to the chiefs and people of Koma Land for their continued support and hospitality that have contributed to the success of the research so far in a difficult terrain. The Ghana Museums and Monuments Board (GMMB), the state agency with responsibility for Ghanaian archaeological heritage provided the legal permission for the archaeological survey and excavation of the sites in Koma Land. In addition, the National Commission on Culture, for Ghana convened series of meetings that led to the renewed archaeological research in Koma Land from 2006 to 2011. The authors are grateful to the two agencies with the acknowledgements provided. In addition, an official of the GMMB was present at every season of work to ensure the authors complied with the National Museum Act 1967 (previously NLCD 387). There are no conflicts of interest.

Notes on contributors

Benjamin Warinsie Kankpeyeng is a Syracuse University alumni and a senior lecturer at the Department of Archaeology and Heritage Studies, University. He has published 18 papers. Prior to his present job at the University of Ghana he worked at the Ghana Museums and Monuments Board, during which period he curated one permanent and three temporary exhibits for the Upper East Regional Museum, Bolgatanga Ghana. His academic interests cover a broad range of issues on Ghanaian Archaeology, including culture contact, public archaeology, heritage and ritual archaeology.

Samuel Nkumbaan is a Doctoral Candidate in Archaeology and a Lecturer at the Department of Archaeology and Heritage Studies, University of Ghana. He has published four papers with two others in press. His research interests are in the general archaeology of Ghana, particularly issues of social complexity associated with the Terracotta Sites of Koma Land, and the history of the Konkomba of northern Ghana.

References

Ampofo Manu, J. 2008. An ethnographic study of the forms and functions of shrines in Yikpabongo, Northern Region, Ghana. Unpublished BA Long Essay. Department of Archaeology, University of Ghana.

Anquandah, J. 2003. The arts of Koma-Bulsa. In *Ghana yesterday and today*, 135–49. Paris: Musée Dapper.

Anquandah, James, and Laurent van Ham. 1985. *Discovering the forgotten civilization of Komaland, Northern Ghana*. Rotterdam: Ghames Foundation.

arap Chepkwony, A.K. 2003. African religion and science. In *African culture, modern science and religious thought*, ed. P. Ade Dopamu, 152–62. Ilorin: ACRS.

arap Chepkwony, Adam Kiplangat. 2005. Religion and science: Living 'double' lives in Africa. Paper prepared for Science and Religion: Global Perspectives June 4–8. Metanexus Institute, Philadelphia, PA, USA (www.metanexus.net).

Beaudry, M.C., L.J. Cook, and S.A. Mrozowski. 1996. Artifacts and active voices: Material culture as social discourse. In *Images of the past. Readings in historical archaeology*, ed. C.E. Orser Jr., 272–310. Walnut Creek: AltaMira Press.

Biebuyck, D., and F. Herreman. 1995. Central Africa. In *Africa. The art of a continent*, ed. T. Phillips, 231–325. London: Royal Academy of Arts.

Bohannan, P. 1988. Beauty and scarification amongst the Tiv. In *Marks of civilization*, ed. A. Rubin, 77–82. Los Angeles, CA: Museum of Cultural History.

Bowie, Fiona. 2000. *The anthropology of religion*. Oxford: Blackwell.

Burton, J.W. 1991. Nilotic cosmology and the divination of Atuot philosophy. In *African divination systems*, ed. P.M. Peek, 41–52. Bloomington: Indiana University Press.

Chavunduka, G.L. 2009. Christianity, African religion and African medicine. World Council of Churches, http://www.wcc-coe.org/wcc/what/interrreligious/cd33-02.html.

Dagan, Esther. A. 1989. *Spirits without boundaries. Twenty-six single heads from Komaland, Ghana*. Montreal: Galerie Amrad African Arts.

David, N., J. Sterner, and K. Gavua. 1988. Why pots are decorated. *Current Anthropology* 29: 365–89.

Fabrega, Horacio. 1980. *Disease and social behaviour. An interdisciplinary perspective*. Cambridge, MA: MIT Press.

Flannery, K.V., and J. Marcus. 1996. Cognitive archaeology. In *Contemporary archaeology in theory: A reader*, eds. R.W. Preucel and I. Hodder, 350–63. Oxford: Blackwell.

Ghent, Gregory. 1994. *African alchemy: Art for healing in African societies*. Moraga, CA: Heart Art Gallery.

Glaze, Anita. 1981. *Art and death in a Senufo village*. Bloomington: Indiana University Press.

Groleau, A.B. 2009. Special finds: Locating animism in the archaeological record. *Cambridge Archaeological Journal* 19: 398–406.

Hodder, Ian. 1992. *Theory and practice in archaeology*. London: Routledge.

Hodder, Ian. 1999. *The archaeological process. An introduction*. Oxford: Blackwell.

Imperato, Pascal James. 1977. *African folk medicine: Practices and beliefs of the Bambara and other peoples*. Baltimore: Fork Press.

Insoll, Timothy. 1996. *Islam, archaeology and history. Gao region (Mali) Ca. AD 900–1250*. BAR S647. Oxford: Tempus Reparatum.

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. 2011a. Introduction. Shrines, substances and medicine in sub-Saharan Africa: Archaeological, anthropological, and historical perspectives. *Anthropology & Medicine* 18, no. 2: 145–66.

Insoll, T. 2011b. Substance and materiality? The archaeology of Talensi medicine shrines and medicinal practices. *Anthropology & Medicine* 18, no. 2: 181–203.

Insoll, T., B. Kankpeyeng, and R. MacLean. 2009. The archaeology of shrines among the Tallensi of Northern Ghana: Materiality and interpretive relevance. In *Shrines in Africa: History, politics and society*, ed. A.C. Dawson, 41–70. Calgary: University of Calgary Press.

Isichei, Elizabeth. 1995. *A history of Christianity in Africa*. Grand Rapids, MI: William B. Eerdmans.

Kankpeyeng, B.W., and S.N. Nkumbaan. 2008. Rethinking the stone circles of Komaland. A preliminary report on the 2007/2008 fieldwork at Yikpabongo, Northern Region, Ghana. In *Current archaeological research in Ghana*, ed. T. Insoll, 95–102. Oxford: Archaeopress.

Kankpeyeng, B.W., and S.N. Nkumbaan. 2009. Ancient shrines? New insights on the Koma Land sites of Northern Ghana. In *Crossroads/Carrefour Sahel. Cultural and*

technological developments in first millennium BC/AD West Africa- Monograph Series Volume 2, eds. S. Magnavita, L. Koté, P. Breunig and O.A. Idé, 3–12. Frankfurt: Africa Magna Verlag.

MacClancy, Jeremy. 1997. Anthropology, art and contest. In *Contesting art: Art, politics and identity in the modern world*, ed. J. MacClancy, 1–25. Oxford: Berg.

MacGaffey, W. 1993. The eyes of understanding: Kongo Minkisi. In *Astonishment and power*, eds. W. MacGaffey and M.D. Harris, 21–103. Washington, DC: National Museum of African Art.

Mbiti, John. 1990. *African religions and philosophy*. Oxford: Heinemann.

McIntosh, R.J. 1989. Middle Niger terracottas before the Symplegades Gateway. *African Arts 22, no*. 2: 74–83, 103–4.

McWhinney, I.R. 1976. Medicine as an art form. *CMA Journal* 114, no. 2: 98–99, 101.

Morphy, H. 2002. The anthropology of art. In *Companion encyclopedia of anthropology*, ed. T. Ingold, 648–85. London: Routledge.

Okpako, D. 2006. African medicine: Tradition and beliefs. *The Pharmaceutical Journal* 276: 239–40.

Parker, J. 2011. Earth and shadow: Substance, medicine and mobility in the history of Ghana's Tongnaab shrines. *Anthropology & Medicine* 18, no. 2: 257–70.

Ravenhill, P 1987. The past and the future of museology in Sub-Saharan Africa. *ICCROM Newsletter* 13: 34–36.

Roberts, Charlotte, and Keith Manchester. 1997. *The archaeology of disease*. Stroud: Sutton.

Saliba, John A. 1976. *'Homo Religiosus' in Mircea Eliade*. Leiden: Brill.

Singer, Merrill, and Hans Baer. 2007. *Introducing medical anthropology*. Lanham: Altamira.

Tasie, G.O.M. 2003. African religion and science. In *African culture, modern science and religious thought*, ed. P. Ade Dopamu, 83–94. Ilorin: ACRS.

Twumasi, Patrick A. 2005. *Medical systems in Ghana*. Accra: Ghana Publishing Corporation.

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.

Waldron, T. 2007. Hidden or overlooked? Where are the disadvantaged in the skeletal record? In *The archaeology of identities. A reader*, ed. T. Insoll, 195–210. Abingdon: Routledge.