

Internal Meanings

Computed Tomography Scanning of Koma Figurines from Ghana

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all scans by the authors

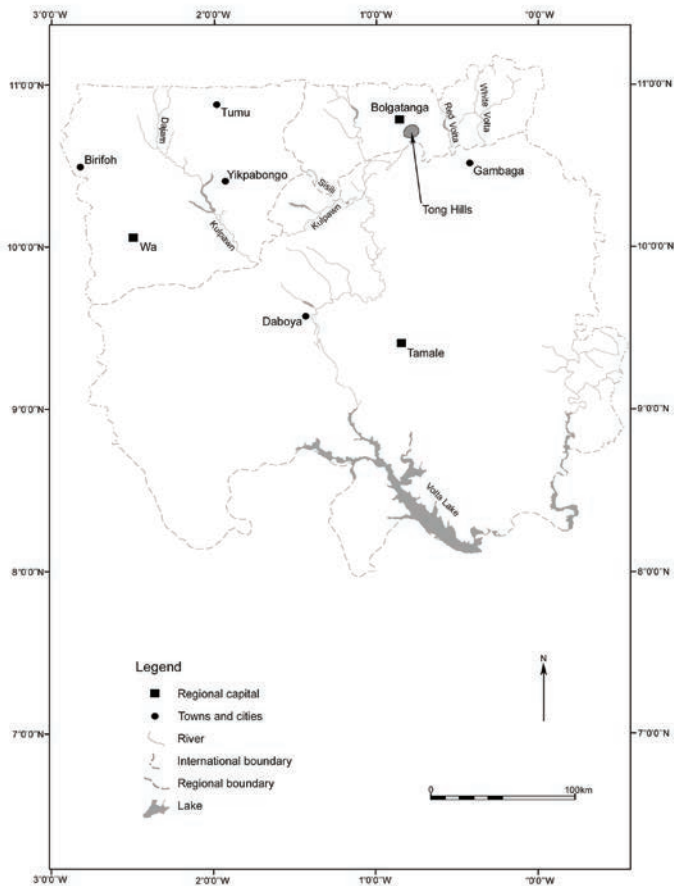
Since the 1980s art historians and archaeologists have been aware of the terracotta figurines from Koma Land in northern Ghana (Kröger 1988; Anquandah 1987, 1998). The pioneering excavation and publications by James Anquandah (Anquandah and van Ham 1985; Anquandah 1987, 1998) established their provenance, and unprovenanced figurines from illegal excavations have subsequently increased known numbers. The dominant focus in publication of the Koma Land corpus has been upon what the figurines depict externally (e.g., Anquandah 1987, 1998; Kankpeyeng and Nkumbaan 2008, 2009; Insoll and Kankpeyeng 2014; Insoll in press a). Following the successful trial use of lower resolution Computed Tomography black scanning which produced black-and-white images of five figurines in May 2010 (Insoll, Kankpeyeng, and Nkumbaan 2012:31–32), a further sample of eight terracotta figurines was CT scanned and color images produced in 2013. These are the focus here. All the figurines were from archaeological excavations at Yikpabongo in Koma Land, and the CT scanning indicated that all eight had deliberately made cavities running from their surface into the body of the figurine. This suggests that the importance of some of the figurines was potentially greater than their external appearance and that part of their significance might have been derived from their internal meanings as well.

This paper reports on the renewed research in Koma Land that led to the retrieval of the figurines, and on the scanned figurines themselves. Why the cavities were made is unknown, but various possibilities are explored. This is considered with reference to the Koma figurines and through wider comparison with other archaeological terracotta figurines from West Africa that have evidence for cavities.

HISTORY OF ARCHAEOLOGICAL RESEARCH IN KOMA LAND

Koma Land spans the borders of three modern administrative regions of Ghana—Upper West, Upper East, and Northern—where it covers an area of approximately 100 km² and is drained by tributaries of the White Volta such as the rivers Sisili and Kulpaw (Anquandah 1998:21; Kankpeyeng et al. 2013:477) (Fig. 1). The name “Koma” is derived from that of one of the current ethnolinguistic groups in the region. The contemporary Koma are not connected with the makers of the terracotta figurines (Anquandah 1987:177), having settled in the region c. 130 years ago (Kröger and Saibu 2010:1). The disconnection between present populations and the figurine makers is also indicated by the name given the figurines by the Koma, *kronkronbali*, meaning “progeny of the ancestors” or “olden days children” (Anquandah 1998:13, 15).

The Koma Land figurines were first recorded by anthropologist Franz Kröger, working in neighboring Bulsaland, who was told about them by a missionary (cf. Kröger 1988:132). Kröger reported the discovery of the figurines to the Archaeology Department at the University of Ghana, and James Anquandah completed the first excavation in Koma Land in 1985 (Kröger 1988:132; Anquandah and van Ham 1985; Anquandah 1998). During Anquandah’s research, 105 mounds were identified, ranging in size from 35 to 4 m in diameter, and four were excavated in the village of Yikpabongo (Anquandah and van Ham 1985; Anquandah 1998:76; Kankpeyeng et al. 2013:479). Anquandah (1987, 2003) interpreted the mounds as burial mounds where the personal possessions of the deceased, including terracotta figurines, were deposited. Parallels were drawn with the “Senegambian and Malian megalithic tombs” (Anquandah 1987:179) and initially the mounds were dated by Thermoluminescence (TL) dating techniques to between the fifteenth and seventeenth cen-



1 The location of Yikpabongo in northern Ghana.

2 YK08-AB9-L7. Male horse rider. The horse was modelled separately and the two were attached. The rider is bearded and wearing a cap with straps running under his chin. He also has an amulet around his neck, multiple bracelets on both his ankles and arms, is wearing a waistband, and possibly has a dagger on his left arm. H. 26 cm, W. 17.5 cm, L. 6.6 cm. Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

turies AD.¹ The chronology was subsequently extended to the period c. AD 1200 to 1800 (Anquandah 1998:82).

Anquandah (1987, 1998) put the framework of our understanding of Koma Land in place. The figurines attest social complexity (Kankpeyeng and Nkumbaan 2009:201) and were made by sedentary farmers living in village communities who also produced pottery and iron, as both slag and finished iron objects such as knives and bracelets indicate (Insoll, Kankpeyeng, and Nkumbaan 2012:27–28). Faunal remains from cattle, sheep, and fowl indicate animal rearing (Anquandah 1998:92). The recovery of numerous grinding stones (Anquandah 1998:93–94; Kankpeyeng, Nkumbaan, and Insoll 2011:211) demonstrates plant processing, and some must have been used for foodstuffs such as millet (Insoll, Kankpeyeng, and Nkumbaan 2012:27).²



Although stylistically unique and unconnected with other terracotta figurine traditions such as those of the Inland Niger Delta (cf. McIntosh and Keech McIntosh 1979; McIntosh 1989), the Koma figurines were not produced in a vacuum. Horse- and camel-rider figurines attest awareness of long-distance trade by the inhabitants of Koma Land (Fig. 2) (Kankpeyeng and Nkumbaan 2009:201). It is also indicated by the frequent depiction of cowry shells modelled on figurines as items of adornment (e.g. Anquandah 1998:48, 2003:139). These were items obtained by trade (Lovejoy 1985:669; Insoll 2003:251–52), and *Cypraea moneta* and *Cypraea annulus* cowry shells and glass beads, other trade items, have also been recovered from excavation in Yikpabongo (Anquandah 1998:77; Insoll, Kankpeyeng, and Nkumbaan 2012:28).

With the termination of Anquandah's research in the 1980s, Koma Land became the focus of looters' attention, with many figurines illegally removed and decontextualized (Kröger 1988:142). Efforts by the Ghana Museums and Monuments Board (GMMB) over the last fifteen years have radically reduced the scale of looting as the local community has become sensitized to the cultural value of the figurines (e.g., Kankpeyeng and DeCorse 2004). A significant factor in reducing looting and increasing public understanding of heritage in Koma Land has been renewed archaeological research by a team from the GMMB and the University of Ghana that has taken place in the area under the direction of Benjamin Kankpeyeng since 2006. The primary focus of this research has also been upon Yikpabongo. Timothy Insoll was involved in



the excavations in 2010 and 2011 with the remit of assisting in the interpretation of figurine function. Sharon Fraser completed the subsequent CT scanning.

THE CONTEXT OF THE CT SCANNED FIGURINES

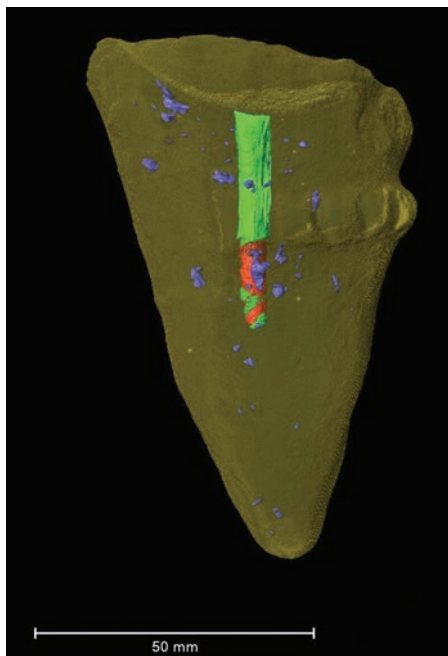
The figurines were recovered from two mound sites in Yikpabongo, given the codes YK07/08 and YK10-3/YK11 (YK = Yikpabongo, followed by the year of fieldwork [cf. Kankpeyeng and Nkumba 2009; Kankpeyeng et al. 2013]).

YK07/08. YK07/08 is a low mound measuring 10 m east to west and 8 m north to south (N10.14449°, W001.33562°). It was excavated using arbitrary levels of 10–20 cm depth where natural levels were not readily recognizable and a 1-m grid reference recording system. Sterile deposits were reached at a maximum depth of 170 cm. Ceramic figurines, potsherds and other artifacts (e.g., iron bracelets and utilitarian artifacts such as knives, grinding stones, small numbers of glass beads and cowry shells) were frequently recovered in repeat patterns superimposed on each other, “from the upper level of the excavated unit to the bottom” (Kankpeyeng and Nkumba 2009:196). These patterns

were formed of “contextual spreads of local potsherds above or in association with figurines” (Kankpeyeng and Nkumba 2009:196), and other items such as pieces of muscovite-biotite-schist, quartz querns, and ceramic discs made from potsherds chipped into a circular shape (Kankpeyeng and Nkumba 2008:99). The latter were probably stoppers from gourds or horn containers,³ which had disintegrated over time (Insoll, Kankpeyeng, and Nkumba 2012:36). The artifact concentrations had been laid in pits dug into the natural lateritic gravel. The site has been dated by four TL samples to between the mid-tenth and early fourteenth centuries AD (cf. Kankpeyeng and Nkumba 2009:198; Kankpeyeng, Nkumba and Insoll 2011:209).⁴

YK10-3/YK11. YK10-3/YK11 is another low mound measuring approximately 18 m east to west and 15 m north to south (N10.14480°, W001.34052°). It was excavated using an L-shaped grid measuring 10 m x 5 m x 10 m x 5 m, extended in 2011 to form an overall grid of 10 m x 10 m (Kankpeyeng et al. 2013: 481). The same excavation methodology as for YK07/08 was employed. The mound stratigraphy was simple with an inconsistent depth of archaeological material of between 20 and 30 cm depth overlaid by a thin layer of modern dust and rubbish (c. 1–3 cm), and below this by sterile or nearly sterile soil (c. 10 cm) before the natural red gravel filled deposits were reached at a depth of between 40–50 cm from the surface (Insoll, Kankpeyeng, and Nkumba 2012:28).

Similar contextual arrangements of artifacts to those described for YK07/08 were recorded with recurrent patterning of spherical stone (quartz and granite) grinding stone, lower querns, and pottery disks overlying the layer containing figurines, and the figurines’ being “sometimes ‘nested’ within arrangements of potsherds and associated with what are possibly libations structures” (Insoll and Kankpeyeng 2014:34–35) (Fig. 3). The latter are clay structures made of daub (low-fired clay) and arranged in a circular pattern interwoven with potsherds (Insoll, Kankpeyeng, and Nkumba 2012:36). YK10-3/YK11 was dated by radiocarbon to the eleventh to twelfth centuries AD (Kankpeyeng, Nkumba, and Insoll 2011:209).⁵



3 Example of arrangement of pot sherds, stones, and figurines as excavated, context YK11-H13/H14/I13/I14.

Photo: T. Insoll

4 YK10-3-N11. Broken seated anthropomorphic figurine indicating the pin and socket joint used to attach the leg. H. 18 cm, width at shoulders 7.5 cm.

Photo: T. Insoll

5 YK07-2-C31. Purple colors are unintentional voids made as a result of manufacture. Green and red highlights the deliberately made cavity in this cone figurine. Central cavity from the top of the figurine: 3.9 cm deep.



MOUND INTERPRETATION AND CHRONOLOGY

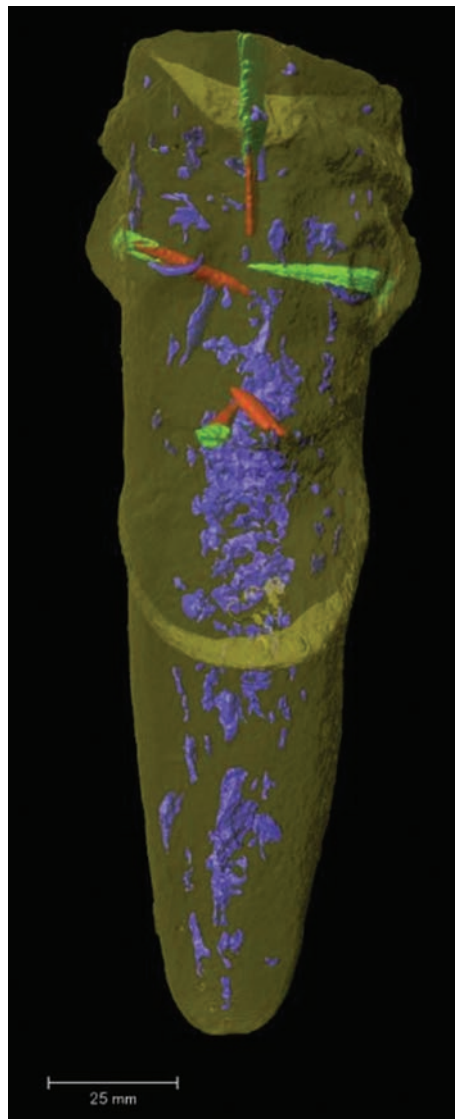
Human and animal remains were largely absent from both mounds (Kankpeyeng et al. 2013:483). Notable exceptions were provided by a single human skull recorded in YK07/08 (Kankpeyeng and Nkumbaan 2008:97–99), and an arrangement of human remains from YK10-3/YK11. The skull in YK07/08 seemed to have been placed facing the ground and no other human remains were present (Kankpeyeng, Nkumbaan, and Insoll 2011:210). The skeletal remains in YK10-3/YK11 consisted of a fragmentary human skull placed facing into the earth, with fragments of human long bones southeast and southwest of the skull. A human jawbone was also recorded along with a separate pile of twenty-seven human teeth, the latter east of the skull. These teeth were from two individuals, a younger adult of about 20 years age, two of whose nineteen teeth present had been filed, and the other eighteen teeth were from an older adult (Insoll, Kankpeyeng, and Nkumbaan 2012:38).⁶ In both YK08/09 and YK10-3/YK11 it is clear that the human remains had been deliberately selected and arranged.

Although these selected human remains were found, it is apparent that the figurine-filled mounds, contrary to Anquandah's (1987:179; 1998:82–83; 2003:138–39) interpretation, are not burial mounds. Reexamination of Anquandah's (1998:87) data likewise indicates that the human remains he found were fragmentary, demonstrating that the mounds were not for primary burial purposes but instead loci for processes of fragmentation, selection, curation, and deposition (Insoll in press a). Complete burials have only been recorded below floors in house mounds, as with one in mound YK10-4 at Yikpabongo (Kankpeyeng, Nkumbaan, and Insoll 2011:209).⁷ This is a different type of site, being much larger in size than the figurine mounds, at 91 m

east-west and 28 m north-south, and composed of the residue of domestic occupation. The house mound was radiocarbon dated to between the mid sixth and mid seventh centuries AD⁸ and did not yield any figurines (Asamoah-Mensah 2013:165; Kankpeyeng et al. 2013:492).

Based on the contextual evidence and artifacts from the figurine mounds, it has been suggested that the mounds and their contents might have been shrines that served multiple functions in relation to healing, protection, fertility, ancestral veneration, and possibly witchcraft exorcising (Kankpeyeng and Nkumbaan 2008:101, 2009:201; Kankpeyeng, Nkumbaan, and Insoll 2011:209). Whether the figurines and associated material culture were utilized for ritual purposes prior to their deposition in the mounds is unknown. However, the repeat contextual arrangement of the figurines also suggests that “we are viewing the in-situ residue of ritual action” (Insoll and Kankpeyeng 2014:35), and what this might have related to is considered below.

The renewed research has also allowed reappraisal of the Koma Land chronology. The C₁₄ and TL dates from Yikpabongo allied with two C₁₄ dates obtained from the site of Tando-Fagusa, 25 km southeast of Yikpabongo in Koma Land (Kankpeyeng and Nkumbaan 2009:200),⁹ suggest the society that produced the

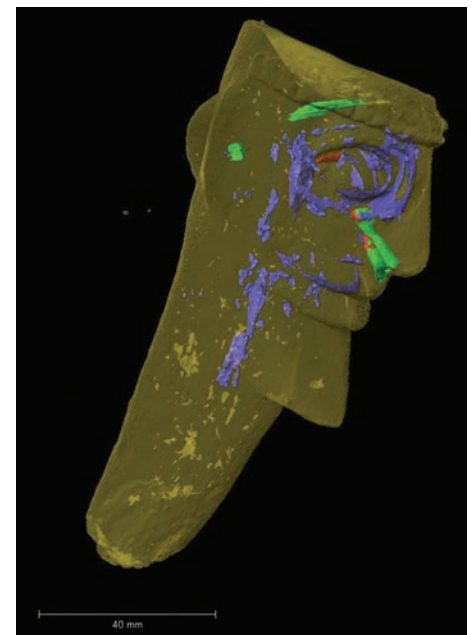


6 A group of cone figurines. Cone figurine YK07-2-C31 is the second figurine from the left in the upper row. It has a pointed base and raised ridge of clay decorated with vertical incisions forming a decorated band around the cone body 3 cm from the top. The top has a shallow bowl shape with a central cowry shell or vulva motif modelled in clay within it. H. 9.4 cm. Max W. 5.9 cm.

Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

7 YK08-AB9-L5. Cavities are incised from the top (4.2 cm max), nostrils (1.7 cm max), and ears (2.9 cm max).

8 YK07-2-D1-3. Cavities are incised from the top (2.3 cm max), nostrils (2 cm max), and ears (2.6 cm max).





figurines can be dated to between the sixth/seventh and thirteenth/fourteenth centuries AD. Why the production of figurines ended and Koma Land was depopulated is not known. Various possible reasons have been suggested, including climatic change, disease, migration, or slave raiding (Insoll, Kankpeyeng, and Nkumbaan 2012:28).

THE FIGURINE ASSEMBLAGES

Recovered from YK07/08 were 923 figurines and figurine fragments. Of these, 55 were complete and 868 were fragments. From mound YK10-3/YK11, 251 figurines and figurine fragments were recovered. This assemblage comprised 238 fragments, 6 largely complete and 7 complete figurines (Insoll, Kankpeyeng, and Nkumbaan 2012:29). The figurines were made either as solid objects, as with all the examples scanned, or from different parts. Arms and legs were occasionally modelled separately and then attached using joints of a ball or pin and socket type (Insoll et al. 2013:13) (Fig. 4). Orange clay was typically used, containing large particles of quartz. Only one figurine had a noticeably different grey clay fabric (YK08-AB9-L7). Traces of a pinkish or red outer slip are sometimes evident. The skill involved in producing the figurines suggests it was a specialist occupation, but whether this was by the same people who made the pots that were found, and if males, females, or both, produced figurines, is unknown

It is not the purpose of this paper to provide a typology of the Koma Land figurines, a couple of attempts at which have been made (e.g., Anquandah 1987:177, 1988:125–29, 2003:140; Kröger 1988:136). A revised typology is currently under construction (Kankpeyeng in preparation) and at present contains more than forty forms (Kankpeyeng et al. 2013:494). The broad figurine groups identified are human (stylized and realistic), animals and birds (mythical and actual), combined human and animal forms, cone forms (anthropomorphic and nonanthropomorphic), and objects modelled in clay such as gourds (Insoll et al. 2013), or stools (e.g., Anquandah 2003:140).

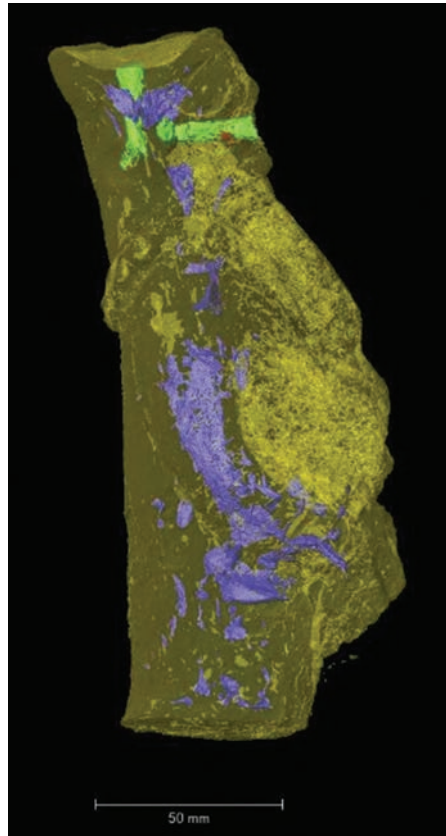
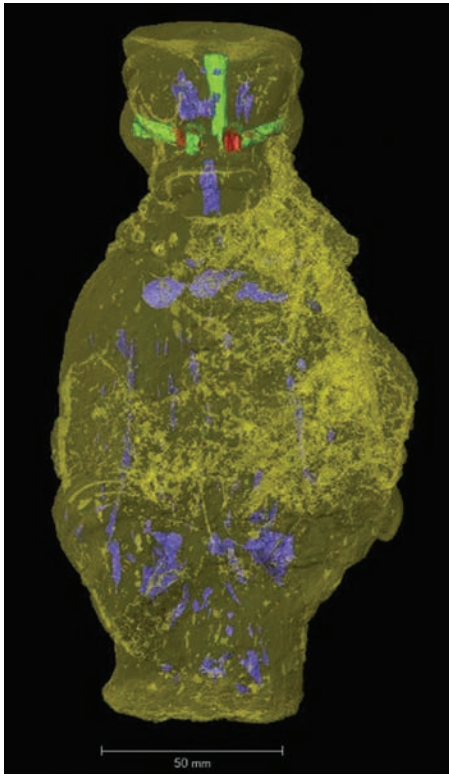
Various interpretations have also been previously ascribed the figurines. It has been suggested that the figurines might represent ancestors (Anquandah 1987:176) or anthropomorphic spirits (Kröger 1988:136). Animal figurines have been suggested as “clan totems” (Anquandah 1987:176). The results of the recent research suggest that the figurines, like the mounds, served varied purposes within an overall framework of healing, medicine, and protection, and this is further discussed below.

9 Group of anthropomorphic cone figurines. YK08-AB9-L5 is 2nd left. It represents a stylized bearded male head wearing a cap. The top has a shallow bowl shape with a central cowry shell or vulva motif modelled in clay within it. H. 15.9 cm, W. 4.7 cm, L. 5.6 cm. YK07-2-D1-3 is on the far right and represents a smiling, androgynous cone figurine wearing a cap. The top has a shallow bowl shape with a central cowry shell or vulva motif modelled in clay within it. H. 14.4 cm, W. 5.5 cm, L. 5.1 cm
Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

10 YK08-AB9-L7(B). Cavities from top (1.2 cm max) and ears (1.9 cm max).

11 YK08-AB9-L7(B). Anthropomorphic cone figurine with highly stylized facial features and a prominent chin. Made from different grey clay. H. 13.7 cm, W. 4.6 cm, L. 5.7 cm.
Photo: courtesy Manchester Museum/University of Manchester/University of Ghana





12a–b YK10-D11-3. Left. Showing cavities from ears and top. Right. Showing cavities from nostrils and top. Scanned prior to cleaning, hence the yellow material (earth) adhering to the front of the figurine. Cavities from top (2.7 cm max), ears (2 cm max), and nostrils (2.7 cm max).

13 YK10-D11-3. Seated female figurine, wearing a skirt, bracelets on the lower wrists, and a necklace and pendant. H. 19 cm, W. 9.5 cm, L. 6 cm.
Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

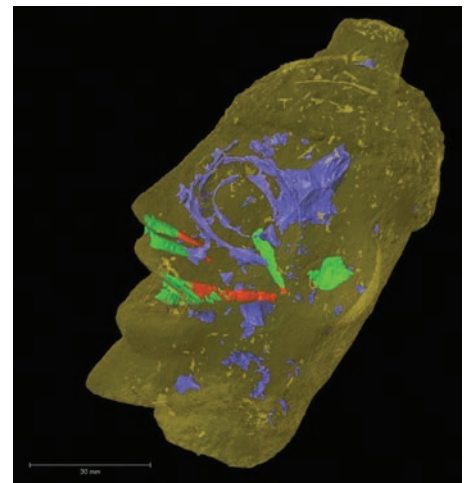
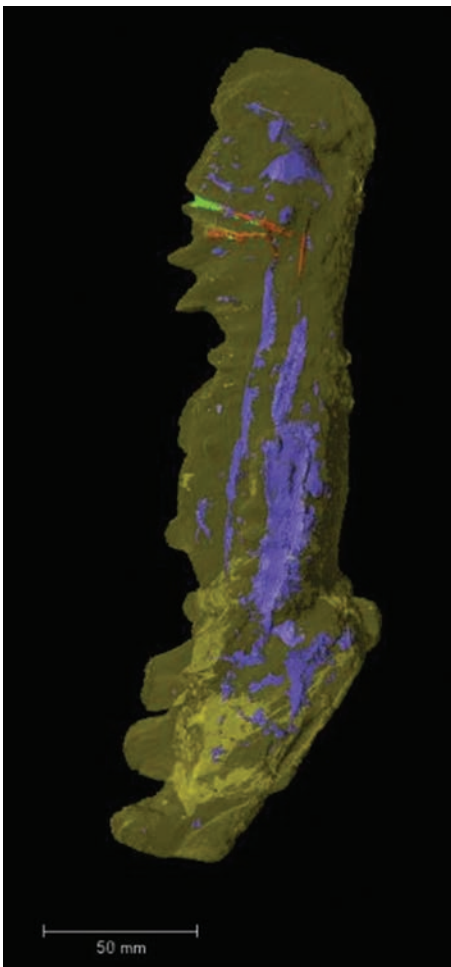
CT SCANNING OF THE FIGURINES

The CT sampling strategy in September 2013 was connected to the availability of figurines in the University of Manchester prior to the installation of the “Fragmentary Ancestors” exhibition at the Manchester Museum.¹⁰ Budget limits for machine and personnel time restricted the sample size to eight figurines. All fifty-two figurines brought to the UK were visually examined on arrival in Manchester Museum and the eight were chosen on the basis of three criteria. First, as this was a small-scale project, it was decided to give priority to cone and human figurines and not animal representations, as these will form part of a subsequent expanded phase of research. Second, all the figurines chosen had surface indications suggesting some cavities were present, and third, they represented different categories of figurines within the human and cone groups, i.e., male, female, realistic, stylistic, janus head, anthropomorphic and plain cone, and multipart (i.e., a rider from a two-part horse-and-rider figurine).

The CT scanning was carried out in the Henry Moseley X-Ray Imaging Facility at the University of Manchester.¹¹ Unlike medi-

cal CT scanners, analytical instruments have a fixed x-ray source and the object being scanned is moved. Each figurine was placed on a foam mat on a rotating sample stage and was rotated 360°, producing 3142 projections. These were then reconstructed.¹² The reconstruction stacks all the radiograph images collected and creates a 3D image that can then be manipulated further in other software programs. Voids that are present in the figurines could be seen as black, compared to the clay matrix which appears in shades of grey depending on the density of the material. Voids were then colored in manually depending on their type/origin, so that natural voids created whilst the clay was formed into a figurine or pore spaces within the clay were colored purple, and cavities which were deliberately added by the manufacturer of the figurines, such as holes in the tops of heads, through ears, mouth or nostrils, were colored red and green. Red was used to distinguish where deliberately made holes were partially filled with sediments during burial. Employing these colors allowed the original shapes of the voids to be shown.

The details of the figurine cavities revealed by CT scanning are presented in the figure captions. There is seemingly no significant variation in the number of cavities dependent on gender or figurine type except for the only example that does not have an anthropomorphic form (YK07-2-C31), which has a single top cavity (Figs. 5–6). All the anthropomorphic cones (YK08-AB9-L5; YK08-AB9-L6; YK08-AB9-L7[B]; YK10-D11-3) and the seated female figurine with a flattened head have top cavities (Figs. 7–13). These top cavities are usually surrounded by a small, raised clay decoration variably resembling either a cowry shell or female genitalia (Kröger 1988:135) (Fig. 6).¹³



14 YK08-AB9-L7. Cavities from mouth (2.2 cm max) and nostrils (3.4 cm max).

15 YK08-A9/B9-L7. Depiction of a human head wearing a cap. Realistically modelled except for the exaggerated pointed chin. The cap appears to be woven or knotted from fibre or perhaps, less likely, snake or crocodile skin. H. 11.2 cm, W. 6.2 cm, L. 6.4 cm.

Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

16 YK08-A9/B9-L7. Cavities are incised from the ears (2.4 cm max), nostrils (1.7 cm max), and mouth (3 cm max).

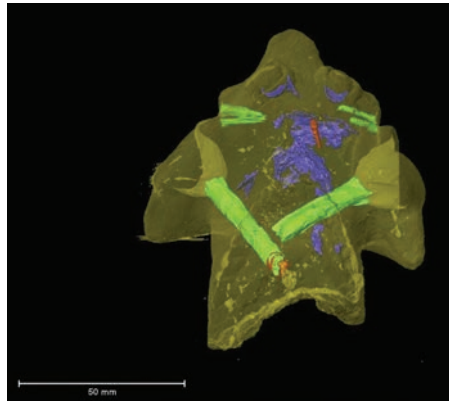
The remaining figurines that lack the flat top or head, such as the horse rider (YK08-AB9-L7) (Figs. 2, 14), head with cap (YK08-A9/B9-L7) (Figs. 15–16), and janus head (YK07-2-O2-1) (Figs. 17–18) lack top cavities, but as with the preceding group have multiple cavities incised from features such as ears, nostrils, and mouths. The ears and nostrils are the most frequently incised facial features and evident on six figurines. The anthropomorphic cone figurines lack mouth cavities.

Whether any meaning was ascribed the variable depth of the cavities is unknown. All the cavities are within the depth range of 1.2 cm and 3.9 cm. The deepest cavity is incised into the smallest figurine (YK07-2-C31) (Fig. 5). It would appear that incising into the clay when it was wet was the technique used to make the cavities.¹⁴ What tool(s) were used is unknown, although suggestions based on the cavity forms can be advanced. The maximum cavity diameter is 0.77 cm. The slightly rounded end profile of some of the cavities suggests the quill of a bird's feather¹⁵ or a porcupine's quill might have been used to make some cavities (e.g., nostrils on YK07-2-O2-1 [Fig. 18], or top cavity on YK07-2-C31 [Fig. 5]). Sharpened sticks or stiff grass or reeds might have been used for other more pointed cavities (e.g., right ear cavity on YK08-AB9-L5 [Fig. 7]). It is possible that some of the cavities were made by leaving the stick or feather in-situ to be burnt out during firing (Insoll et al 2013:13). Why the cavities might have been made is considered below.

COMPARATIVE FIGURINE SCANNING AND CAVITIES

The existence of cavities has been recorded within other West African archaeological figurines, but this has been almost wholly by visual identification and CT scanning appears to have been only rarely used (Insoll in press a). Van Dyke (2008:76–85) provides an exception in discussing the application of CT scanning to terracotta figurines from the Inland Niger Delta of Mali. Unfortunately these are unprovenanced examples, so the discussion is of limited utility. The CT scans indicated abdominal cavities, open—as through the vagina of a woman giving birth to a serpent—or closed with clay plugs. An example of the latter, a kneeling female figurine, had unidentified substances placed within the abdominal cavity (Van Dyke 2008:83). The presence of the cavities was interpreted as nonfunctional.

Some examples of Fali figurines from northern Cameroon also have evidence for cavities. These are evident visually (Insoll in press a). For example, three stylized human figurines from the Hou and Dolu Tibinta burial sites (c. seventeenth century AD) had circular holes incised either in the base of the throat or upper chest (cf. Jansen and Gauthier 1973:Figs. 51–52). Their location suggests that it is possible that these cavities were linked into perceptions of the Fali figurines as having agency, life, or personhood of some form (Insoll in press a), perhaps connected with what Gauthier (1979:146) describes as *nyamta faw*, or the vital breath. Cavities have also been recorded on some of the fig-



17 YK07-2-O2-1. Janus head with open mouths and a prominent topknot. There is an applied clay ridge formed of twisted clay pieces forming a V-shape on the neck perhaps representing a rope or necklace. H. 12.2 cm. W. 4.9 cm, L. 8.4 cm.

Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

18 YK07-2-O2-1. Cavities are incised from the single pair of ears (1.8 cm max), two pairs of nostrils (1.4 cm max) and two mouths (3.5 cm max). The striations on the walls of the mouth cavities suggest they were made by pressing a tool into the wet clay.

urines from the Twifo sites in southern Ghana dated to between the mid-seventeenth and mid-eighteenth centuries AD (Insoll in press a). A technical reason for these cavities is advanced by Bellis (1982:16), i.e., that they supported the head during firing if at the back of the head, and released air pressure during firing if from the nostrils or ears. However, the existence of other perforations in the occipital region of some figurines for the insertion of actual hair (Bellis 1982:16), suggests that the other cavities may equally have served less functional, though unknown purposes (Insoll in press a).

Soapstone *nomoli* figurines from Sierra Leone sometimes also have cavities visually evident (Insoll in press a). Allison (1968:38) refers to cavities in the top of the head of some *nomoli* and suggests that they may have been “for the insertion of certain substances designed to endow the figure with increased power.” Unfortunately, most *nomoli* have been chance finds during farming or activities such as grave digging (Allison 1968; Lamp 1983; Hart and Fyfe 1993) rather than from excavation, thereby limiting interpretation (Insoll in press b). Cavities are also visually apparent on some of the Nok figurines from central Nigeria (Insoll in press a), dated to between c. 500 BC and AD 500. These can be from the eyes, mouth, nostrils, or ears (e.g., Breunig 2014: 102, 109, 113, 231, 242), or the sides or back of the head (Bitiyong 1993:408). Fagg (1990:21) proposed that these helped the clay dry and thus facilitated firing, but again whether this is adequate to explain all the Nok figurine cavities is questionable (Insoll in press a), for Fagg (1990:81) also refers to a circular hole on the crown of one figurine as “an unusual feature.”

Radiography has also revealed internal cavities in ethnographic figurines and related objects (Insoll in press a). Hersak (2010:43) has described how x-rays indicated internal cavities in the head, anus, and abdomen of wooden *mankishi* power objects made by the Songye of eastern Kasai (Congo) were interconnected with channels. These cavities could contain “magical substances” (Hersak 2010:43) such as the parts of wild animals selected because of characteristics such as their speed, venom, strength, alertness, or odor. X-rays also facilitated understanding of a stylized cow-form Bamana *boliv* power object (Insoll in press a) by showing that a hole pierced the length of the *boliv* running parallel to a bamboo frame or backbone which could be fed through sacrifice at one end and flushed with water out of the “anus” (Brett-Smith 1983:47,

51). These examples of figurines and their cavities differ from the Koma Land examples and as such are not directly comparable but do indicate that the intentional addition of cavities was not unique to the Koma Land figurine assemblage.

INTERPRETATION OF THE KOMA FIGURINE CAVITIES

As with the cavities on the figurines from the Inland Niger Delta, Fali, Nok, Twifo, or the *nomoli*, the cavities on the Koma figurines were made for a purpose. However, it does not seem that they were made for technical reasons (Insoll in press a). Not all the figurines have cavities, so it is unlikely that they were made to allow gases to escape during firing as has also been suggested for some cavities on figurines from the Inland Niger Delta (Van Dyke 2008:80). If the cavities on the Koma Land figurines were made to facilitate firing, it might be expected that all figurines would have cavities. The cavities were also not made to allow the attachment of separately modelled body parts. These exist, but differ being in the form of a joint as indicated in Figure 4 and the cavities are also in the wrong position (head) to serve such a purpose.

Although technical reasons can be seemingly discounted, it is not clear for what purpose the cavities were made and used, but various possibilities exist. The top cavities could have been utilized for the offering of libations of substances as yet unidentified (Insoll and Kankpeyeng 2014:38). To facilitate this, the cone figurines could have been inserted directly into the ground (Insoll and Kankpeyeng 2014:38), or perhaps into a small mound of earth (Kröger 1988:133). Freestanding figurines with top cavities (e.g., YK10-D11-3) might have been similarly used but without being inserted into the ground. The cavities might also have been packed with substances, again of unknown form. Research is in progress using DNA analysis to assess what, if any, substances might have been poured or inserted into the cavities.¹⁶ It is less likely, considering their positions, perhaps excluding the top cavities, that the cavities had secondary materials such as feathers, straw, grass, or sticks inserted in them as a form of ornament or decoration.

Alternatively, the cavities might have been left open. Comparative ethnographic analogies do not exist (Insoll and Kankpeyeng 2014:34), but the material presented by Devisch from southwestern Congo on Yaka sensory concepts is of interest in thinking



19 YK07-2-D5.1. Anencephalic head. This would appear to have been modelled from life as it is a realistic depiction of this fatal birth defect. H. 5.9 cm. W. 6.4 cm. L. 6.3 cm.

Photo: courtesy Manchester Museum/University of Manchester/University of Ghana

about why the figurines might have been pierced. For the Yaka listening was perceived as “a horizontal movement from outer to inner” and smelling was “the olfactory mediation between inner and outer” (Devisch 1991:295, 297). As noted elsewhere, “when surfaces—inner and outer—are deliberately pierced to access the inner core, as on some of the figurines, it is enticing to think of these deliberately produced cavities as more than an aesthetic or technical choice” (Insoll and Kankpeyeng 2014:34). Moreover, if some of the figurines were considered as “ancestors,” then the presence of the cavities might have been significant so that they were perceived as hearing, smelling, and seeing (Insoll, Kankpeyeng, and Nkumba 2012:32). The cavities may also attest the belief that the figurines were considered as having agency (Insoll in press a). They may have been thought of as powerful objects and as such were venerated by the individuals and communities that made and curated them (Insoll, Kankpeyeng and Nkumba 2012:39–41).

Proposing a single interpretation for the cavities on the Koma Land figurines that lack supporting historical or ethnographic sources is not possible but, overall, perhaps they functioned to enhance the healing, medicinal, and protective aspects of the fig-

urines. This is potentially lent support by other elements of the figurine assemblage that seem to reference such interests. The Sisili Valley was an area of endemic onchocerciasis (Anquandah 1998:25). Perhaps the recurrent stylistic element of bulging eyes modelled on the figurines reflects concerns with eye disease, while realistic depictions of individuals with chronic conditions such as an anencephalic head from YK07/YK08 (Fig. 19) might also relate to healing, medicine, and protection. It has also been suggested that some of the figurines, could have been considered scapegoats and used for disease transference purposes (Kankpeyeng and Nkumba 2009).

INTERNAL MEANINGS

The presence of the cavities strongly suggests that some of the Koma Land figurines had an importance beyond what they physically depict and both the internal and external figurine form could potentially be significant (Insoll in press a, b). This challenges the notion that they were “art” (Kankpeyeng, Nkumba, and Insoll 2011:208), but the prehistoric contexts from which they derive makes their interpretation difficult. For example, it is not possible to infer if they were “statement images” described by Hersak (2010:40) as “formal, fixed, and timeless,” or were they “process images,” which were “subservient to a didactic or therapeutic system.” This caveat on interpretive limits acknowledged, the cavities do suggest that the figurines, rather than just representing ancestors, spirits, or agents, were, to use a point made by Willis (1991:278) in relation to Tabwa wooden figurines, “such spirits, and hence objects imbued with magical power.”

Looking inside the figurines suggests that they constituted an ontological and cosmological element, a way, to adapt the words of Douny (2011:176), for “dealing and interacting with the world through spiritual beings and ritual practices.” The cavities may also have served to enhance the “remarkable,” “manipulatable,” and performative possibilities of miniaturization that the figurines afforded, and as such reflect complex understandings of materiality (Stewart 1993:44, 69; Bailey 2005:32–39; Insoll in press a). Although the interpretations proposed for what these internal meanings might have been are currently somewhat conjectural it is hoped that the next phase of excavation, detailed examination of figurine context, CT scanning, and DNA and lipid residue analyses will permit greater understanding of these important and enigmatic artefacts.

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Notes

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1 Two TL dates are reported as obtained from terracotta figurines found on the surface of burial mounds (Anquandah 1987:179).

2 Archaeobotanical research has not been undertaken in Koma Land to date. This will form a key element of the next phase of research.

3 Akamasi Williams, personal communication.

4 The Laboratory of the Department of Physics and Chemistry, University of Southern Denmark processed the TL dates which were AD 1317+/-24 (K1 - KLR-6975a-d), AD 1012+/-40 (K2 - KLR-6976a-d), AD 979+/-39 (K3 - KLR-6977a-d), and AD 1287+/-39 (K4 - KLR-6979a-d).

5 The C14 date obtained from YK10-3/YK11 was Cal AD 1010-1170 (970+/-40 BP; YK10-3-N-10-L2, Beta-274104).

6 P. Burrows, personal communication.

7 An MPhil student, Hannah Asamoah-Mensah, in the Department of Archaeology and Heritage Studies, University of Ghana, completed the house mound excavation in January 2010 as part of dissertation work.

8 The C14 date obtained from the house mound was Cal AD 540-650 (1470+/-40 BP, Beta-271050).

9 The Tando-Fagusa C14 dates obtained from two charcoal samples were Cal AD 680-690 (1230+/-40 BP, Beta 08T1[So/165]) and Cal AD 535-652 (1475+/-35 BP, Uppsala).

10 This was held between October 2013-May 2014 and the exhibition has now transferred to the National Museum, Accra, Ghana.

11 The scanning was completed using an X-tec 225/320 kV Nikon Custom Bay. The source was 225 kV, with a tungsten target and a 2k x 2k x 16-bit amorphous silicon flat panel detector. The voltage was 160 kV and the current 120 µm. A copper filter with a thickness of 1 mm was used with an exposure time of 1000 ms. The total acquisition time was 53 minutes per figurine.

12 Reconstruction was carried out using X-tec CT Pro with a voxel size of 112.4 µm, and Avizo was used for the visualisation of the images.

13 A postgraduate student at the University of Manchester, Holly Atkinson (2014:17), has made the interesting suggestion that the cowry motif might have been the catalyst "which ensured the efficacy of the medicinal substances placed within." This is unproven, but is a viable option considering the ubiquity of the motif on the cone figurines.

14 Andrew Chamberlain, personal communication.

15 The striations evident in some of the illustrations (e.g., mouth of figurine in Fig. 18) are likely to be artifacts of the post-scanning coloring process, done layer by layer, rather than of tool original use.

16 Heather Robinson is completing the DNA analysis as part of a doctoral research project under the supervision of Professor Terry Brown of the Manchester Institute of Biotechnology.

References cited

- Allison, P. 1968. *African Stone Sculpture*. London: Lund Humphries.
- Anquandah, J. 1987. "The Stone Circle Sites of Komaland, Northern Ghana, in West African Archaeology." *African Archaeological Review* 5:171-80.
- _____. 1998. *Koma-Bulsa: Its Art and Archaeology*. Rome: Istituto Italiano Per L'Africa e L'Oriente.
- _____. 2003. "The Arts of Koma-Bulsa." In *Ghana. Yesterday and Today*, ed. C. Falgayrettes-Leveau and C. Owusu-Sarpong, pp. 135-49. Paris: Musée Dapper.
- Anquandah, J., and L. Van Ham. 1985. *Discovering the "Forgotten" Civilisation of Komaland, Northern Ghana*. Rotterdam: Ghames Foundation.
- Asamoah-Mensah, H. 2013. *Ceramics as Product of Technology: A Case Study of Archaeological Remains at Yikpabongo*. MPhil Thesis, University of Ghana.
- Atkinson, H. 2014. *Beyond Counting: Reassessing the Importance of Cowries in the West African Iron Age*. MA Essay, University of Manchester.
- Bailey, D.W. 2005. *Prehistoric Figurines: Representation and Corporeality in the Neolithic*. London: Routledge.
- Bellis, J.O. 1982. "The 'Place of the Pots' in Akan Funerary Custom." Unpublished paper, Africana Studies Program, Indiana University.
- Bitiyong, Y.I. 1993. "Culture Nok, Nigeria." In *Vallées du Niger*, ed. J. Devise, pp. 393-415. Paris: Réunion des Musées Nationaux.
- Breunig, P. (ed.). 2014. *Nok: African Sculpture in Archaeological Context*. Frankfurt: Africa Magna Verlag.
- Brett-Smith, S. 1983. "The Poisonous Child." *RES: Anthropology and Aesthetics* 6:47-64.
- Devisch, R. 1991. "Symbol and Symptom among the Yaka of Zaire." In *Body and Space: Symbolic Models of Unity and Division in African Cosmology and Experience*, ed. A.B. Jacobson-Widding, pp. 283-301. Uppsala: Almqvist and Wiksell.
- Douny, L. 2011. "The Role of Earth Shrines in the Sociosymbolic Construction of the Dogon Territory: Towards a Philosophy of Containment." *Anthropology and Medicine* 18:167-79.
- Fagg, B. 1990. *Nok Terracottas*. London: Ethnographica.
- Gauthier, J-G. 1979. *Archéologie des Pays Fali: Nord Cameroun*. Paris: CNRS.
- Hart, W.A., and C. Fyfe, C. 1993. "The Stone Sculptures of the Upper Guinea Coast." *History in Africa* 20:71-87.
- Hersak, D. 2010. "Reviewing Power, Process, and Statement: The Case of Songye Figures." *African Arts* 43 (2):38-51.
- Insoll, T. 2003. *The Archaeology of Islam in Sub-Saharan Africa*. Cambridge: Cambridge University Press.
- _____. In press a. *Material Explorations in African Archaeology*. Oxford: Oxford University Press.
- _____. In press b. "Chapter 8: West Africa." In *The Oxford Handbook of Prehistoric Figurines*, ed. T. Insoll. Oxford: Oxford University Press.
- Insoll, T., and B. Kankpeyeng. 2014. "Reconstructing the Archaeology of Movement in Northern Ghana: Insights into Past Ritual, Posture, and Performance." In *Materialities, Meanings, and Modernities of Rituals in the Black Atlantic*, ed. A. Ogundiran, and P. Saunders, pp. 28-46. Bloomington: Indiana University Press.

Insoll, T., B. Kankpeyeng, and S. Nkumba. 2012. "Fragmentary Ancestors? Medicine, Bodies and Persons in a Koma Mound, Northern Ghana." In *Archaeology of Spiritualities*, ed. K. Rountree, C. Morris, and A. Peatfield, pp. 25-45. New York: Springer.

Insoll, T., B. Kankpeyeng, S. Nkumba, and M. Saako. 2013. *Fragmentary Ancestors: Figurines from Koma Land, Ghana*. Manchester: Manchester Museum.

Jansen, G., and J.G. Gauthier. 1973. *Ancient Art of the Northern Cameroons: Sao and Fali*. Oosterhout: Anthropological Publications.

Kankpeyeng, B. In preparation. *Koma Land Clay Figurines Typology*. University of Ghana.

Kankpeyeng, B., and C. DeCorse. 2004. "Ghana's Vanishing Past: Development, Antiquities and the Destruction of the Archaeological Record." *African Archaeological Review* 21:89-128.

Kankpeyeng, B.W., S.N. Nkumba, and T. Insoll. 2011. "Indigenous Cosmology, Art Forms and Past Medicinal Practices: Towards an Interpretation of Ancient Koma Land Sites in Northern Ghana." *Anthropology and Medicine* 18:205-16.

Kankpeyeng, B. and S. Nkumba. 2008. "Rethinking the Stone Circles of Koma Land: A Preliminary Report on the 2007/2008 Fieldwork at Yikpabongo, Northern Region, Ghana." In *Current Archaeological Research in Ghana*, BAR S1847, ed. T. Insoll, pp. 95-102. Oxford: Archaeopress, pp. 95-102.

_____. 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*, ed. S. Magnavita, L. Koté, P. Breunig, and A. Idé, pp. 193-202. Frankfurt: Africa Magna Verlag.

Kankpeyeng, B., N. Swanepoel, T. Insoll, T., S. Nkumba, S. Amartey, and M. Saako. 2013. "Insights into Past Ritual Practice at Yikpabongo, Northern Region, Ghana." *African Archaeological Review* 30:475-99.

Kröger, F. 1988. "Die Terrakotta-Funde des Koma Gebeites (Nord Ghana)." *Paideuma* 34:129-42. English translation available at <http://www.kroeger1937.homepage.t-online.de/komaland/Paideuma-Koma.htm>

Kröger, F., and J.B. Saibu. 2010. *First Notes on Koma Culture*. Berlin: Lit Verlag.

Lamp, E.J. 1983. "House of Stones: Memorial Art of Fifteenth Century Sierra Leone." *The Art Bulletin* 65: 219-37.

Lovejoy, P. 1985. "The Internal Trade of West Africa Before 1800." In *History of West Africa*, ed. J. Ajayi and M. Crowder, Vol. 1, pp. 648-90. Harlow: Longman.

McIntosh, R.J. 1989. "Middle Niger Terracottas before the Symplegades Gateway." *African Arts* 22 (2):74-83, 103.

McIntosh, R.J., and S. Keech McIntosh. 1979. "Terracotta Statuettes from Mali." *African Arts* 12 (2):51-53, 91.

Stewart, S. 1993. *On Longing: Narratives of the Miniature, the Gigantic, the Souvenir, the Collection*. Durham, NC: Duke University Press.

Van Dyke, K. 2008. "Ceramic Traditions in the Inland Niger Delta and Beyond." In *African Terra Cottas: A Millenary Heritage*, ed. F. Morin and B. Wastiau, pp. 38-94. Geneva: Barbier-Mueller Museum.

Willis, R. 1991. "The Body as Metaphor: Synthetic Observations on an African Artwork." In *Body and Space: Symbolic Models of Unity and Division in African Cosmology and Experience*, ed. A. Jacobsen-Widding, pp. 271-81. Uppsala: Almqvist and Wiksell