



EDITORIAL

This will be my final issue of *Nyame Akuma*. Having served as editor for five years, I feel the time has come for an infusion of "new blood" in shepherding this bulletin. Dr. Pamela Willoughby (Department of Archaeology, University of Alberta, Edmonton, Alberta, Canada T6G 2H4), has graciously agreed to assume the editorship of *Nyame Akuma*, and all correspondence regarding publication in the bulletin should be addressed to her, effective immediately. For my part, I would like to express a vote of thanks and my very best wishes for success to Dr. Willoughby.

In terminating my five-year editorial responsibility for *Nyame Akuma*, I also want to extend heartfelt thanks to the many contributors without whose assiduous—and often recurrent—efforts the bulletin would not exist. Generally during my tenure, but particularly the past couple of years, there has been a very gratifying (and even reasonably steady!) flow of articles. Please continue the good work.

In closing, I should mention it has lately been confirmed that the forthcoming Panafrican Congress, originally scheduled for autumn, 1995, is now going to be held June 18–23, 1995, at the University of Zimbabwe, Harare. For details, please contact the organizing secretary, Professor Gilbert Pwiti, History Department, University of Zimbabwe, P.O. Box MP167, Mount Pleasant, Harare, Zimbabwe.

Good luck, Pam.



ARTICLES

■ **BENIN**

**Recent Excavations at Savi:
An Eighteenth-Century
West African Trade Town**

*Kenneth G. Kelly
Department of Anthropology, UCLA
405 Hilgard Avenue
Los Angeles, CA 90024
U.S.A.*

This paper reports on archaeological research conducted during 1992 and 1993 at the site of Savi, in the Republic of Bénin, West Africa (Fig. 1). Savi was the capital of the Hueda kingdom, a small coastal state located in the vicinity of the modern town of Ouidah, about 40 km from Cotonou, the principal city of Bénin. The Hueda state was actively trading with Europeans for slaves and other commodities from about 1660 until its conquest and destruction by Dahomey in 1727. However, prior to its fall, the capital of Savi was host to a considerable European trading presence. Indeed, the Hueda kingdom was the port of primary importance on the historic Slave Coast for European traders seeking to obtain slaves to transport to the Western Hemisphere.

When Savi was destroyed completely by Dahomey in 1727, the historic site was not reoccupied. This provides an excellent opportunity to investigate town life in one region of West Africa at a time before the European industrial revolution began significantly impacting African material culture. Research goals at Savi have included an archaeological survey delimiting the boundary of the ancient town, attempting to identify the commercial and administrative center of the capital town,

and conducting excavations to recover indications of architectural or other structural remains. Artifacts recovered from the excavations were analyzed in order to gain a better understanding of the local material culture in this archaeologically little known region of West Africa. Once a database of local material traditions was established, it was contrasted with imported trade items to determine the extent to which the indigenous culture had embraced non-African goods. A further avenue of investigation has attempted an archaeological understanding of the social and demographic effects of the slave trade upon trading societies (Fig. 1).

The results of the survey program at Savi showed the ancient town site to have been much larger than was anticipated. Archaeological materials recovered in controlled surface collections and shovel tests indicated that the habitation area extended over an area about 5 km in diameter (Fig. 2). This large size demands reinterpretation of past town life, suggesting the conclusion that the town may have had a larger population than contemporary observers implied, or that the town was considerably more dispersed than modern and historic towns in the area. This change in settlement density may indicate significant transformative impacts resulting from the slave trade.

Next, excavations at seven hypothesized house areas and two features were begun (Fig. 3), with excavations ranging from a single 1 x 4 m trench to four 1 x 4 m and 1 x 3 m trenches. Five of the seven house areas, although yielding substantial numbers of artifacts, contained inconclusive evidence of structures, and the remaining two yielded clearly defined features that were partially excavated. The two features, a trash pit apparently dating to the late seventeenth and early eighteenth centuries, and a 2 m deep pit resembling a well, although of insufficient depth, were also excavated.

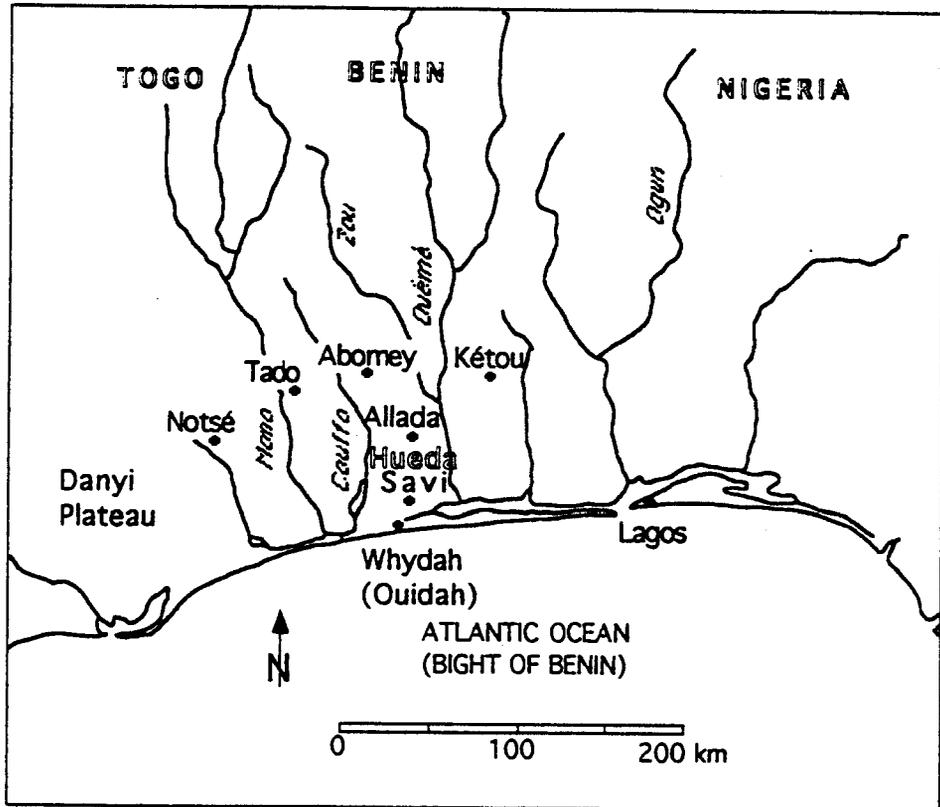


Fig. 1. Map of project area with project location, **Savi**, in bold. Hueda Kingdom shown in open letters, and modern nation names depicted in open capital letters.

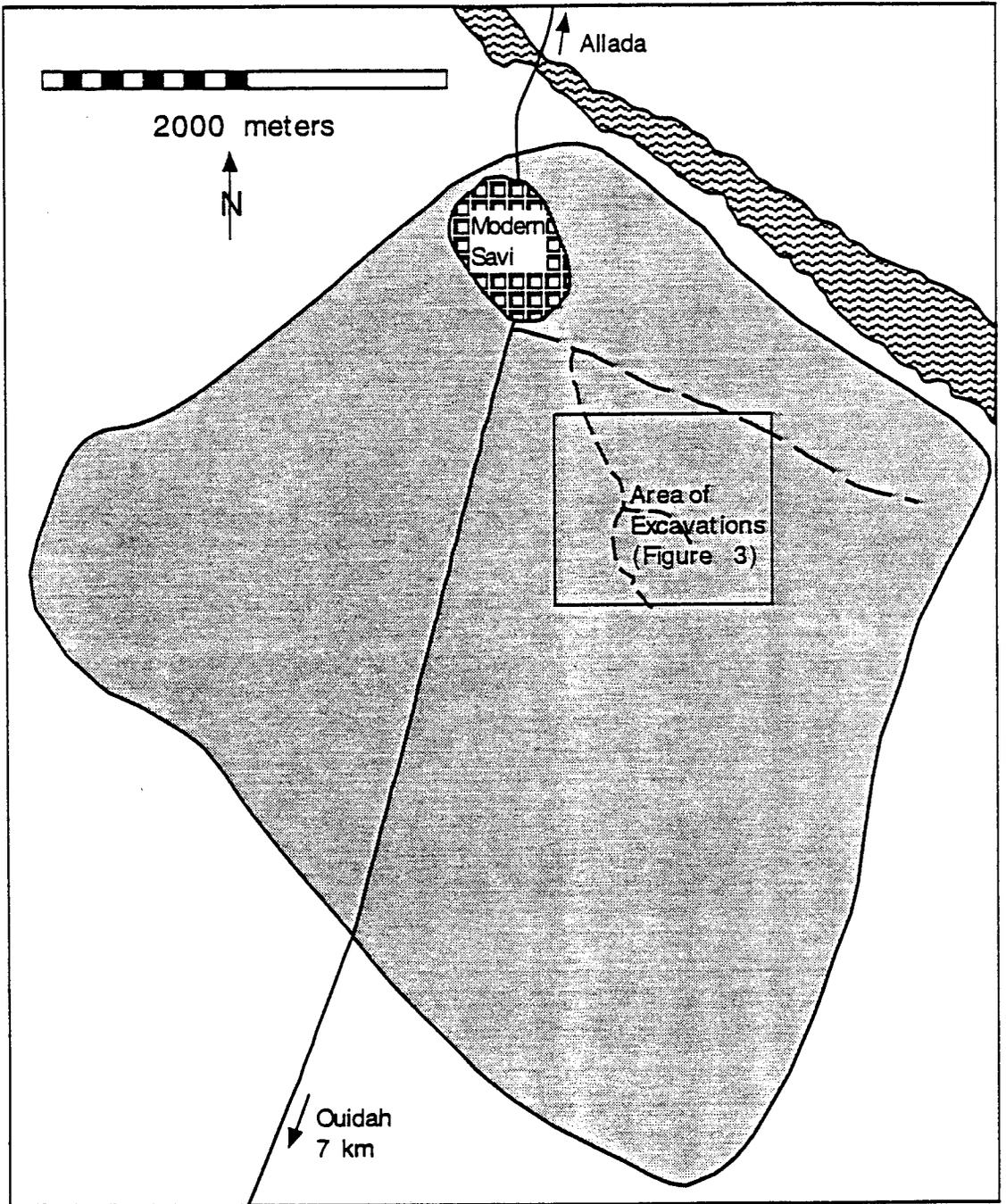


Fig. 2. Area of ancient Savi as determined by transect survey.

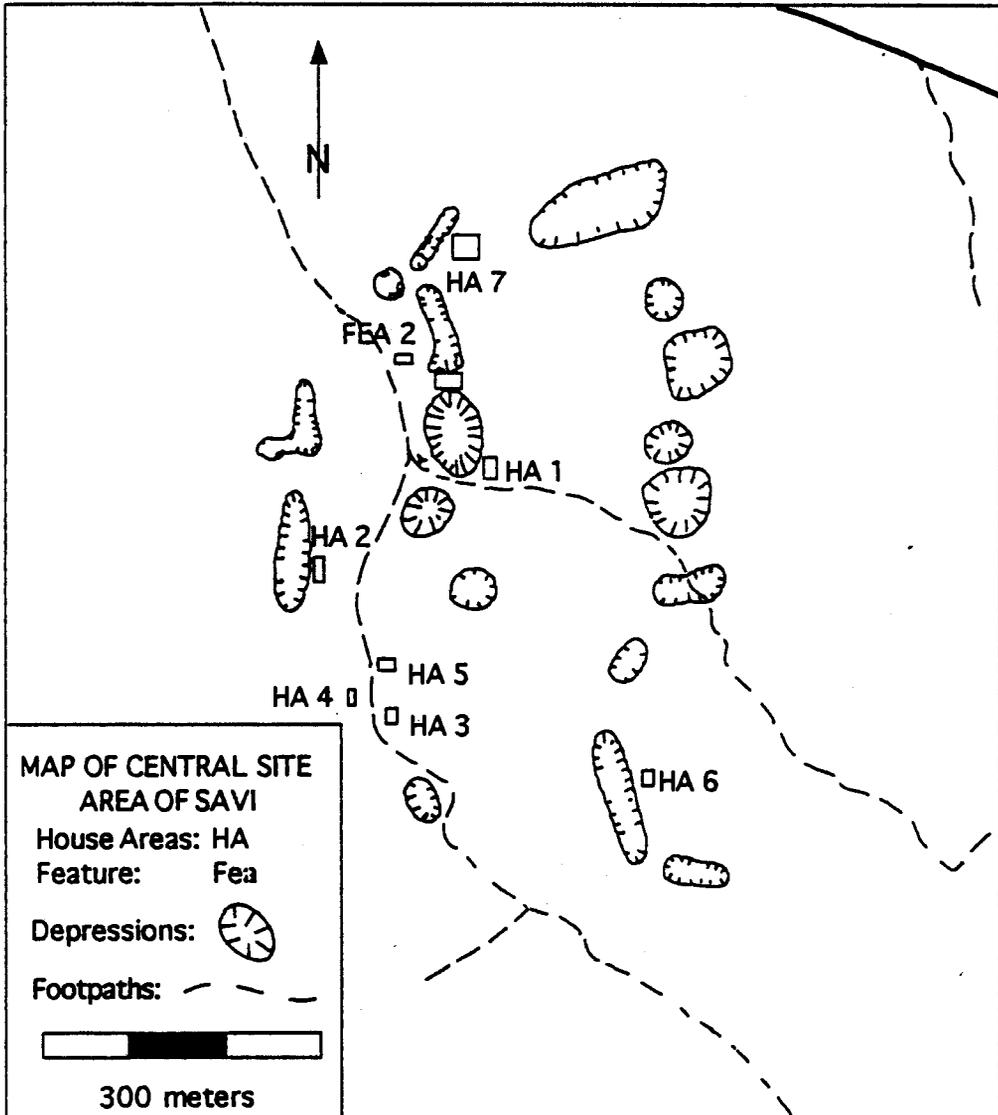


Fig. 3. Central area of excavations at Savi.

Artifacts Recovered from Survey and Excavations

Artifacts of local, African-trade, and European origin were recovered during the course of investigations. Locally produced materials were most common, and included local ceramics, locally manufactured smoking pipes, and a variety of less common local products such as terra cotta figurines and copper ornaments. African products of more distant origin included items as utilitarian as milling stones, and as rare as several carnelian beads similar to the products of workshops in northern Mali (Gaussen n.d.) Local ceramics numbered in excess of 100,000 sherds, and were found over the entire ancient town, although the vast majority were broken into relatively small sherds. The ceramics were minimally decorated; roughly 90% were plain wares, and the decorated sherds were minimally elaborated with impressed or painted designs. Rims suggest the majority of ceramics fell into one of several categories of slightly restricted cooking pots, storage jars, and small, rather flat bowls or plates.

Locally manufactured artifacts of particular importance and interest include tobacco pipes and terra cotta figurines. The pipes are among the most interesting artifacts recovered from the site, firstly for the wealth of decoration present, but more importantly for their ability to complement and contribute to the refinement and improvement of the local pipe chronologies and typologies already well established in Ghana (Afeku 1976, Ozanne 1976). Pipe fragments number in excess of 250 and largely complete pipes are fairly common. Several baked clay figurines were excavated at Savi. These anthropomorphic figures, no more than 10 cm tall, were excavated from the refuse pit that yielded such a diversity of artifacts. Similar figurines have not been reported in reference to Southern Bénin. Other local materials include beads, of which only four locally manufactured beads were recovered from excavations, two of which were made of fired clay, the other two of carnelian. Of the stone beads, one was a flaked and ground carnelian disc, and the other was a ground and polished carnelian

cylinder. Both stone beads were biconically perforated.

Imported Materials

European imports make up the other main category of artifact finds from Savi. Of the range of imported materials found, beads and tobacco pipes of European manufacture are by far the most numerous. Beads number in excess of 800 and reflect a wide range of types, including large (3 cm) clear-modeled faceted examples, "chevron" beads, and various drawn and wire-wound beads. The largest assemblage of beads was excavated from among the burned material in a feature identified as a trash pit. Large numbers of clear, faceted beads in this deposit may have originated from a store or other stockpile of beads, perhaps belonging to a trader. Beads recovered from other locations at Savi were more generally intact, possibly reflecting their accidental loss during daily activities, as opposed to their entering the archaeological record as a result of a building's destruction.

The other commonly recovered items of European trade are pipe stem and bowl fragments. Intact pipe bowls and marked heels were found at many locations throughout ancient Savi, both in excavated house areas and during the boundary survey. Stem bores were measured for all pieces collected, and all marked pieces were illustrated. Significantly, the marked pieces were almost exclusively of Dutch origin (Duco 1982), indicating that despite the permanent presence of English and French traders at Savi, the French and British pipe industries were not getting their product exported to all trading spheres.

Imported ceramics and glass were recovered in considerably smaller quantities. The limited numbers of ceramics can be contrasted with the wide variety and great numbers of imported ceramics recovered by DeCorse at Elmina, Ghana (DeCorse 1992), which implies a very different intercultural dynamic at Savi than that prevailing on the Gold Coast. Those recovered were all very fragmentary, but despite their condition, a number of wares and forms were recognizable. Most numerous were tin-

glazed earthenwares and coarse yellow-green lead-glazed storage vessels. Tin glazed wares of indeterminate origin exhibited blue floral motifs, although occasionally purple or other colors were also present. Forms represented included coffee cups, plates, bowls, and other larger vessels, possibly chamber or storage pots. Coarse ware storage vessels were present, as were a few examples of Chinese porcelain teacups and bowls.

Glass was limited to a very few bottle bases and several stemware fragments. Archaeological indications of architecture or structural remains were present, although limited. The mud wall construction practiced in the region leaves few archaeologically recoverable traces; however, other structural elements may be preserved or indicated. Excavation at one location provisionally identified as a Dutch trading establishment revealed a threshold constructed of imported brick and a brick doorway arch supported with an iron plate. The other primary indicator of a structure's presence was the occurrence of burned clay daub that preserved the shape of the palm-frond ceilings.

Discussion

The materials, spatial relationships, and associations recovered from Savi are currently being used to address a series of questions focusing on the changes and transformations that occurred in coastal Bénin as a result of trade with Europeans. The establishment of trade relations with European nations created new opportunities for trade and the management and distribution of economically important goods. Increased access to, and control over, the technologies of firearms created new opportunities to exercise political will and power. Individuals who could monopolize access to firearms controlled the technology of acquiring wealth in the form of war captives, who could then be exchanged with Europeans for yet more of the technology of predation. Furthermore, the coastal trade upset the previous balance by bringing access to wealth items and trade to groups that previously were peripheral to existing African trade routes. This created powerful

states where before there had been none. By investigating the archaeological record of this early trade period, we learn more about the social, economic, and political processes that caused, and were resistant to, change. Additionally, the role of trade in precipitating social and political change can be evaluated.

Acknowledgments

The historic archaeological research at Savi and Ouidah could never have taken place without the permission and encouragement of individuals including Merrick Posnansky, Alexis Adand, François Dannou, Maire of Savi, Madame Noëlie Apithy, Chef du Circonscription, Ouidah, and the people of Savi and Ouidah. The research has been supported in part by the Department of History and Archaeology of the Université Nationale du Bénin; the University Research Expeditions Program (UREP), University of California; the International Institute of Education Fulbright Research Abroad program; the UCLA Department of Anthropology; the Fowler Museum of Culture History, UCLA; the UCLA Friends of Archaeology; the International Studies and Overseas Program (ISOP), UCLA; and Sigma Xi, the Scientific Research Society.

References

Afeku, I. K.
 1976 *A Study of Smoking Pipes from Begho.* University of Ghana.

DeCorse, C. R.
 1992 Culture contact, continuity, and change on the Gold Coast: AD 1400-1900. *The African Archaeological Review* 10: 163-96.

Duco, D. H.
 1982 *Merken van Goudse Pijpenmakers 1660-1940.*

Gaussen, J.
 n.d. *Perles Néolithiques du Tilemsi et du Pays Ioullemedene (Ateliers et Techniques).* Unpublished manuscript.

Ozanne, P.

1976 *Tobacco-pipes of Accra and Shai*. Accra, Ghana.

■ CAMEROON

An Ethnoarchaeological Approach to Understanding Archaeological Ceramic Assemblages from Gréa, Northern Cameroon

Claire Bourges
 Department of Archaeology
 University of Calgary
 Calgary, Alberta, T2N 1N4
 Canada

The community of Gréa is located along the foot of Gréa inselberg, 25 km to the northwest of the town site of Mora (see MacEachern and Garba, this volume, Fig. 1). During the 1992 field season of the Projet Maya-Wandala, 29 archaeological sites were found and recorded on and around Gréa inselberg and preliminary test excavations were carried out at two of these sites (MacEachern 1993) (Fig. 1). Gréa was found to be the location of a number of important Iron Age sites, with the materials from the two excavated areas producing very different assemblages. Today the hamlet of Gréa is home primarily to people who call themselves "Wandala," although they do share their village with Shuwa and Kanuri peoples (Islamic groups widespread in the research area), as well as Mafa and other *animist*, or non-Muslim, groups.

Between July 5 and August 1, 1993, as part of my M.A. thesis research I carried out a ceramic census in the hamlet of Gréa (Bourges 1993). The census resulted in the recording of information about almost 400 ceramic vessels, from 26 households. Each vessel was measured, drawn, and photographed. In addition, data about production, provenience, life span, and use

of the vessel were collected. The data collected will be studied to determine the amount of variability existing in the types, sizes, and uses of modern ceramics among the people of Gréa. The results will be used in a comparative analysis to gain information about the ceramics collected in excavations at the Iron Age sites at Gréa.

The Gréa "Wandala" are of interest because their oral traditions recount the times before they became Wandala. In contrast to traditions among neighboring Wandala groups, the people at Gréa have no memory of discord having existed between the Wandala and the Mafa. The Gréa "Wandala" have maintained oral traditions and "pagan" practices that recall pre-Wandala times. The people of Gréa claim to be, not Wandala, but *like* the Wandala. Through time they have managed to maintain a certain autonomy, never becoming fully assimilated. This is exemplified by the fact that the Tligréa, the Wandala chief ruling over Gréa, is not permitted to set foot there, but rather, lives in Kolofata, a small village seven kilometers to the west of Gréa. In addition, despite their adoption of Islam, the Gréa "Wandala" have maintained a magico-religious tradition involving sacrifices to bring rain. During my 1993 fieldwork I was assured this ritual was no longer practiced, and had not occurred for at least eight to ten years. I was told that the people of Gréa are now travelling more and coming into contact with "others" (that is "other Muslims" or "other Wandala") who warn the Gréa "Wandala" that they should not be practicing the customs of their ancestors; by doing so they are "forgetting the Koran." Shortly thereafter I was introduced to the man who, I was told, had formerly performed the rain rituals. When asked when he had last done these rituals, he answered that they had been performed only a few days before.

Further evidence of this maintained autonomy is seen in the way people identify themselves. Previous ethnographic work done among the Wandala claim that no clan system exists among the Wandala. At Gréa, clan names are known and used by most people. When asked about ethnic affiliation, most Gréa "Wandala" informants gave their

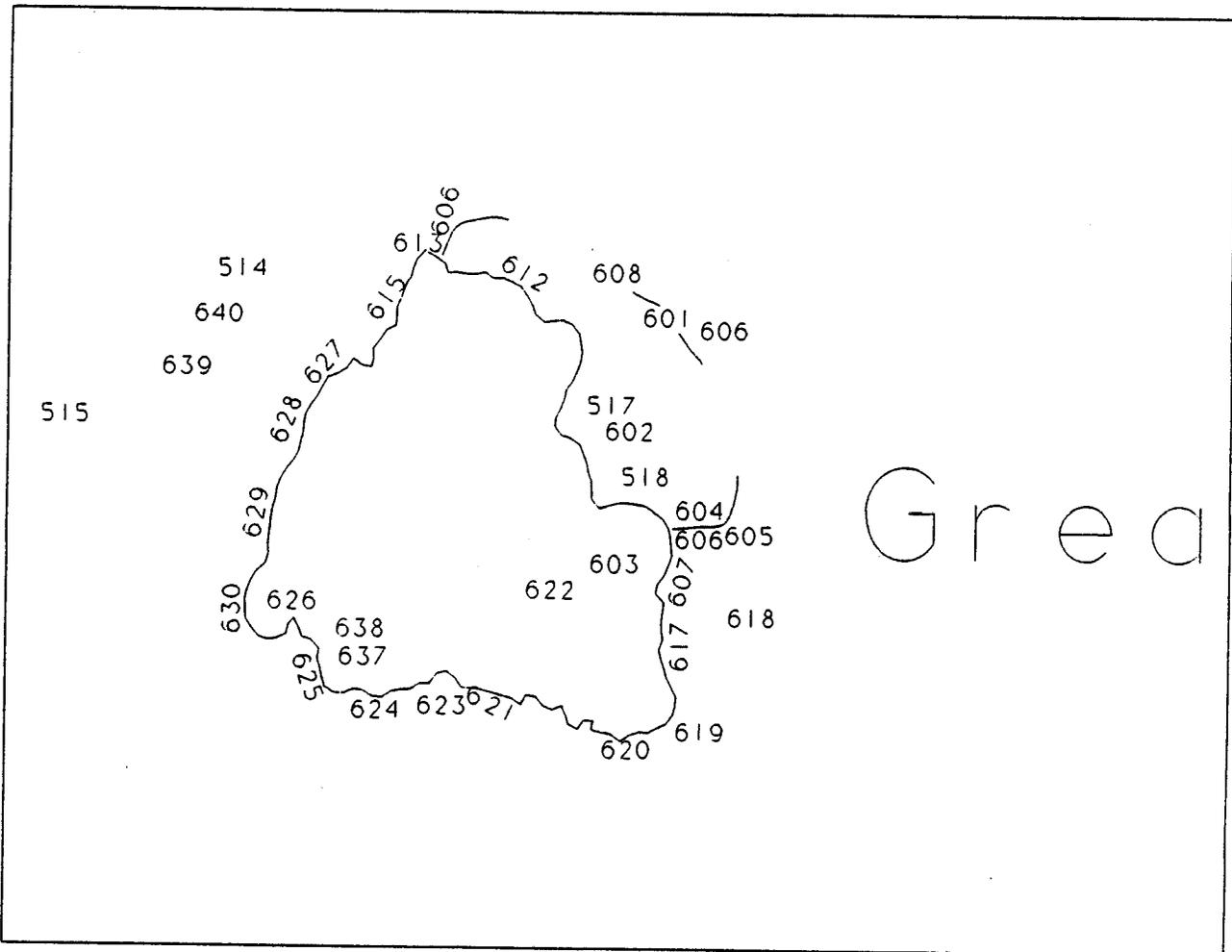


Fig. 1. Gréa sites.

clan name as their ethnic group, rather than calling themselves Wandala. One informant listed seven clans at Gréa and proceeded to tell me who or what each clan represented. During a similar survey at Kirawa, the original Wandala capital, similar clans' names were noted and used, suggesting that the Wandala at Kirawa are also not fully integrated into the Wandala kingdom, whose seat of power is presently at Mora.

I had expected to find that the Gréa "Wandala" had maintained some autonomy in their material culture (particularly the ceramic styles), just as there remains a certain autonomy in their myths and magico-religious practices. Contrary to my expectations, the Gréa "Wandala" ceramic style has fully incorporated the ceramic traditions of the Kanuri (Wandala do not at present make ceramic pots, but use Kanuri made vessels).

Preliminary results from the ceramic inventory indicate that there are two readily distinguishable ceramic traditions presently used at Gréa: (1) Kanuri pottery used by the Gréa "Wandala," Kanuri, and Shuwas (that is, the Muslim peoples), and (2) *kirdi* (the local designation for pagans) ceramics used by non-Muslim/animist groups, mainly represented by Mafa people at Gréa. The Kanuri pottery is represented by large-necked jars with inverted rims for storage of grains and water. These are generally decorated with knotted plait roulettes. The Mafa frequently brew millet beer, requiring the use of many large jars. These are generally neckless jars, decorated with twisted cord roulettes. The Mafa pot assemblages also have a high incidence of bottles associated with beer brewing, and ritualistic vessels represented by jar and bottle categories.

Within the village of Gréa, there exists a clear distinction in the ceramic assemblages of Muslim vs. non-Muslim groups. Within the different Muslim groups, this ethnic distinction is not highly visible in the vessels themselves, but rather in the ratios of certain vessel types, and their arrangement within the households. Thus, the Gréa "Wandala," who are primarily agriculturalists, own many large grain storage jars; these are not generally present in Shuwa households,

since the Shuwa are traditionally cattle pastoralists.

Analysis of ceramics from an archaeological site within the study area has revealed that ceramic traditions in the Mandara mountains area have tended to be conservative (David and Sterner 1987, Wahome 1989). Wahome (1989) studied the ceramic assemblages from Mehé Djiddere, a site where excavations suggested 1000 years of continuous occupation. Many of the decorative motifs and other ceramic attributes found in the Mehé Djiddere excavations used similar techniques to those used today. Chippendale (1986: 450) summarizes the work of several archaeologists, who have demonstrated that, contrary to comfortable assumptions, ceramic sequences do not always reflect political, religious, social, or cultural changes. He notes that the changes in ceramic assemblages that do occur often happen much later than other cultural changes. I think that the adoption of Kanuri ceramics by the Gréa "Wandala" reflects a desire to communicate to other Wandala that they subscribe to Wandala ideology of today, despite the fact that they have preciously maintained ties with their pre-Wandala ancestors in their nonmaterial culture.

If the Gréa Wandala are indeed descendants of a non-Muslim people who lived at the Gréa inselberg prior to being "Wandalized," there is little in their material culture, most notably in their ceramic assemblage, that would attest to this pre-Muslim past. On the other hand, oral traditions and cultural practices (nonmaterial/nonvisual ethnic markers) have maintained this separateness. There seems to be a clear dichotomy between what the "Wandala" at Gréa communicate with their material culture and what they verbalize about their culture and beliefs. Oral traditions and cultural practices, such as sacrifices, have a limited audience and are of a limited duration. Only the witnesses of these events are aware of their existence. Who these witnesses will be can be carefully controlled. Material culture will communicate messages about ethnicity and cultural beliefs for an extended period, as

well as to a potentially much wider audience. By communicating their "Wandala-ness" through their material culture, the "Wandala" at Gréa are able to articulate within the greater Wandala population, while maintaining a strong connection with their past at Gréa, a fact that is not readily communicated to outsider Wandala.

Through an in-depth analysis of the modern ceramics at Gréa, I hope to gain an understanding about the way that different groups, living side by side, reflect their ethnic affiliation through pottery. This understanding can then be used to interpret how the ceramics from excavations at Gréa, and from surrounding villages in the study area, have been used for signalling ethnic affiliation and the types of changes that have occurred in the perceptions of ethnic groups. At Gréa, the material culture has been manipulated in such a way as to reflect desired ethnicities, despite the fact that the ethnicities being reflected may not directly correspond to the ethnicities that are verbally expressed.

References

Bourges, C.
 1993 Unpublished Field Notes; Field Survey of Modern Ceramic Traditions. Gréa, Province Extreme Nord, Cameroon, July 1993.

Chippendale, C.
 1986 Archaeology, design theory, and the reconstruction of prehistoric design systems. *Environment and Planning B: Planning and Design* 1986: 445-85.

David, N., and Sterner, J.
 1987 The Mandara Archaeological Project 1984-87. *Nyame Akuma* 29: 2-8.

Wahome, E. Wachira
 1989 *Ceramics and History in the Iron Age of North Cameroon*. Master's thesis, Department of Archaeology, University of Calgary.

Histoire des Peuplements et de la Transformation des Paysages: État des Recherches Archéologiques dans la Province du Sud (Cameroun Méridional)

J. Paul OSSAH Mvondo
 E.N.S. Université Yaoundé I
 BP 47
 Yaoundé, Cameroon

Ce thème de recherche entre dans le cadre du programme général de l'ORSTOM-UR.5A associé au groupe Écofit dont je pris part en partenariat avec l'ORSTOM, dans l'espace limite forêt savane du sud Cameroun.

J'engageai par conséquent les premières recherches archéologiques dans la province du sud Cameroun, région forestière peuplée de Bantou. La première phase de la recherche consistait au repérage et identification des sites d'une part et d'autre part aux sondages et début de fouille des sites les plus accessibles. Ce travail préliminaire permet de situer les sites et les zones de recherche précis en vue de la résolution archéologique de la problématique du programme dans le sud forestier. La problématique générale du grand programme étant de savoir comment s'est faite la symbiose forêt et sociétés historiques de chasseurs collecteurs ou de producteurs en relation avec les migrations Bantu d'une part et d'autre part au contact des fluctuations des reculs et des avancées de la forêt? Il revient à l'archéologue de décrire les anciens paysages forestiers, leur évolution, et de déterminer les facteurs humains de leur transformation dans l'histoire.

Le partenariat avec l'ORSTOM vient aussi soutenir les premiers efforts individuels de recherche archéologique déjà engagée dans cette province depuis 1989.

Ce partenariat s'est manifesté par deux missions sur le terrain à Ebolowa, sur le site d'habitat de BITON (Oton Melen).

La première mission eut lieu en février 1992 avec le Pr. Jacque Evin du Centre de datation par le radiocarbone, Université Claude Bernard Pr Essomba, et la deuxième le 24 février 1993 sur le même site et à Alcan II, dans le cadre du programme ECOFIT, avec le Dr. Jean Maley, le Dr. Henry Robin, et Achundong. La mission avait des objectifs cette fois pédologiques, botaniques, et archéologiques.

Techniques de recherche

La première étape a été la prospection. Elle avait pour but de localiser les sites anciens de peuplement dans la forêt du sud Cameroun. Cette prospection a été une couverture des trois départements que comprend la province du sud Cameroun. Le repérage des sites permet donc d'engager les travaux de fouille pour répondre aux objectifs du programme. La technique de prospection fut les enquêtes orales qui consistaient à interroger les anciens sur les anciennes zones de peuplement dans la forêt les points de fluctuations de la forêt par l'action anthropique. La seconde méthode était la recherche des anciens villages dans la forêt en se référant sur le changement et les ruptures de continuité observée dans la forêt. L'utilisation des toponymes a permis aussi d'identifier les zones de peuplements anciens. Enfin l'utilisation de la carte au 200.00e a permis de repérer sur une grande échelle le sens de l'occupation des sols et de la forêt par les populations, et évolution de l'habitat et de l'espace forestier dans la province du sud Cameroun.

Certains sites découverts ont fait l'objet de sondage et de fouille pour vérifier l'importance du site et du matériel archéologique. La fouille fut effectuée sur les sites les plus accessibles.

Répartition des Sites Archéologiques

On distingue les sites des départements du Dja-et-Lobo, de la vallée du Ntem, et de la Mvilla.

Dja-et-Lobo

Il a livré les sites préhistoriques et ceux de l'âge du fer.

Les Sites Préhistoriques

L'Abris sous Roche de Nkooveng

Le site se localise à 1 km sur la route d'Edjom et à 12 km. du village de Fiebot. Les coordonnées sont 3 28' 02" de latitude nord et 11 57' 06" de longitude est. La façade a 140 m de long et la profondeur est de 21 m. Pas de vestige sur la surface peut-être à cause des activités culturelles de populations qui s'y déroulent.

Le Rocher de Nkolmegong

Ce site est situé à 3 km 4 de Fiebot sur la route d'Eboman. Les coordonnées sont 3 26' 03" de latitude nord et 11 35' de longitude est.

C'est un rocher de 690 m d'altitude. Ce rocher comprend les traces d'occupation humaine constituées d'un ensemble de trous circulaires ovales, dont 14 trous circulaires et 6 creux ovales. Les trous ont un diamètre variant entre 10 cm et 15 cm et une profondeur de 3 cm à 12 cm. Les trous ovales varient de 32 cm à 90 cm de longueur, pour 12 cm à 25 cm de largeur. Ces structures circulaires organisées à la surface du rocher témoignent d'une occupation ancienne du rocher.

L'Abris sous Roche de Akooveng

Il est situé au NE de Nkolmebong et se compose de trois cavités qui lui donnent une forme de demi-polygone. La première cavité a 2 m de haut et 9 m 50 de long, la deuxième cavité a une profondeur 6 m 02 et 8 m de haut. L'ouverture est de 19 m 7. Elle comprend des dépôts de 15 cm d'épaisseur. Le matériel se compose d'un tesson décoré, ne présentant pas de trace d'usure, ni de dégraissant de quartz. Deux autres tessons furent collectés à -10 cm de profondeur.

La 3e cavité a une ouverture de 13 m 40 de long et une profondeur maximale de 7 m 45. Le sol est incliné et aucun vestige ne fut trouvé sur le sol.

Les Sites de l'Âge du Fer

Le Site de Zoetélé Brousse (2BI-Locus A)

Le site est situé à 30 m à l'ouest, soit 12 NW de la ville de Zoetélé. C'est une butte anthropique de 52 cm de haut et 43 cm de diamètre. Le sondage effectué a livré la terre brûlée et du charbon de bois. Sur 90 cm de

profondeur le site présente des morceaux de charbon, et un fragment de tuyère à 90 cm de profondeur. Ces indices permettent d'avancer l'hypothèse d'un atelier de réduction du fer.

Le Site de Zoetélé Brousse (2B1)

Ce site fut repéré à partir des scories réparties en surface. Les scories sont dispersées sur 4 m de long et 1 m 50, pour une surface de 6 m². Les scories sont de petite taille. La proximité de la route permet de penser qu'il a été remanié par endroits.

Le Site d'Otetek (OTI)

Il est situé à 3 14 '06" de latitude Nord et 11 54 '05" de longitude est, soit à 3 km au sud-est de Zoetélé ville. Le site se trouvant à quelques mètres du carrefour Minkoumou-Nkoumadzap dans la cour de la mission chrétienne. Le matériel est varié et se compose des scories de petite taille, des fragments de tuyère, des poteries non décorées, du charbon de bois sur près de 100 m². La taille petite des scories indiquerait peut-être un atelier de forge.

Le Site de Kumu (KMI)

Il se trouve dans la cacaoyère de Jean Thomas Akoa. Le site selon l'informateur fut occupé par les ancêtres. Il se localise à 100 m de la rivière Kumu. Le site quelque peu remanié a en surface un matériel composé de briques brûlées, des scories de toutes les tailles, des morceaux de tuyère et de la céramique.

Les prospections, sondages, et fouilles furent menés aussi au sud de la grande forêt dans les arrondissements de Djoum et Mintom du même département. La particularité de ces arrondissements est qu'ils possèdent l'écosystème forestier qui se prolonge dans les pays voisins. En effet ils sont frontaliers et voisins du nord du Congo et du nord Gabon. Cet écosystème forestier est aussi appelé la réserve du Dja.

Le Site d'Ekoum (EK1)

Le site est actuellement colonisé par les arbres, les palmiers, et les cacaoyères. Le matériel recueilli après un sondage de 1 m² se compose de quelques morceaux de céramique, des scories et surtout d'une enclume en place. L'enclume et les scories attestent la pratique des activités

métallurgiques. L'enclume mesure 36 cm de large et une épaisseur de 25 cm. La partie droite a une largeur de 15 cm et une épaisseur de 10 cm. La longueur totale est de 68 cm. L'enclume présente des traces d'usure à plusieurs points.

Le Site de Ze (Z1)

Dans l'arrondissement de Mintom, le site se localise dans le village Ze à 1 km de Mintom ville, sur la route Mintom-Dja. Les sondages ont permis de découvrir les témoins d'une occupation ancienne de Ze. Quatre types de vestige composent le site: une fosse, des morceaux de céramique, une perle, et un éclat. La fosse de forme rectangulaire a une profondeur de 1 m 20, 1 m 50 de long, et 1 m 10 de large. Les tessons au nombre de dix-huit comprennent 14 du corps du vase, et quatre de l'ouverture.

La perle est bleue ciel perforée par un trou de 2 mm.

Le Site d'Alat Makay (AM1)

Il s'agit d'un site métallurgique situé sur la rive du Dja. Il se localise dans le village du même nom sur la piste reliant Bi à Lomié, à la cour de l'église EPC du village. Les pluies fortes ont provoqué une érosion du sol de 50 cm de profondeur, ce qui en lessivant la couche d'argile a mis en surface de nombreuses scories témoins de la métallurgie de fer. Le site a une structure spatiale circulaire, avec un diamètre de 4 m. Les objets de surface se composent de scories de petites dimensions, du charbon de bois, d'un outil en silex, aucun morceau de tuyère ne fut ramassé.

Département de la Vallée du Ntem

Ce département a livré deux sites: Mekomo et Biyan.

Le Site de Biyan

La prospection fut menée à Biyan, village situé sur la route Meyo-Centre-Maan en passant par Ebolowa. Les ramassages de surface ont permis d'identifier trois secteurs. Le premier secteur est Akoatan, il s'agit d'un abris sous roche de 3 cavités. La cavité ouest est profonde, la cavité centrale comprend des dômes internes, alors que la cavité est à une forme

de cuvette. Il n'a été trouvé aucun vestige dans l'abri, par contre à quelques mètres de l'abris sous roche au bord du cours d'eau, deux outils taillés et polis furent ramassés. Ces pierres sont à mettre en relation avec la grotte. La première hâche polie est rectiligne et plate, de forme triangulaire, mesurant 14 cm de long, et 1 cm d'épaisseur. La seconde hâche est ovoïde avec les deux extrémités arrondies. Le deuxième secteur Zookom a livré en surface des scories de formes arrondies, le dernier secteur Messeng a livré en surface 17 fragments de céramique. Dans l'ensemble le matériel de surface du site comprend des hâches, des scories, et de la céramique. Les fouilles restent à entreprendre.

Le Site de Mekomo

Il se localise à l'arrondissement d'Olamze à quelques kilomètres de la frontière gabonaise et équato-guinéenne. La répartition des tessons sur le sol et l'existence de la petite monticule indiquant le secteur à fouiller. Deux sondages furent organisés au sud-est pour vérifier l'étendue du site et sa composition. La fouille elle-même consista à installer un carroyage de 4 m² de surface avec quatre carrés de 1 m² chacun. La division du carroyage comprend les carrés A, B, C, D. Le carré A était localisé au nord-ouest, le B au nord-est, le D au sud-ouest, et le C au sud-est.

Les sondages C'1 et C' furent effectués à l'est du carroyage au prolongement de BC. L'analyse stratigraphique indique une première couche A1 à 14 cm de profondeur de coloration noire, contenant les vestiges, une deuxième couche entre 15 cm et 30 cm de profondeur, stérile, et argileuse de couleur jaune.

Le matériel récolté se compose de céramique, de métal, de noix de palme, du charbon de bois, des pièces de verre, des coquilles d'escargot. Le carré A a livré 13 coques de noix de palme, 27 tessons, 3 pièce de verre, et du charbon de bois. Le carré B livra 2 noix de palme, du charbon de bois, une pièce de verre, 13 tessons. Le carré C comporte une bague en métal, un objet perforé à plusieurs endroits, du charbon de bois, six coques de noix de palme, et 30

tessons. Le carré D ne livra que 31 tessons et du charbon de bois.

Le sondage C'1 comprend un couteau en métal, une coquille d'escargot, un fond plat d'objet en fer perforé, 6 noix de palme, et sept tessons.

Enfin le sondage C' a livré uniquement du charbon de bois. Plusieurs morceaux de charbon furent prélevés pour datation. A 30 m au nord-ouest de la fouille furent identifiées deux pierres à aiguiser, polies à la surface. Au total la fouille du site de Mekomo fut riche, les données quantitatives indiquent 144 pièces réparties en 4 morceaux de verre, 4 objets en métal, 1 coquille d'escargot, 27 noix de palme, et 108 tessons; la céramique et les tessons sont les plus abondants d site. L'étude de ce matériel permettra d'éclairer les relations entre l'homme et l'environnement dans cette partie de la province du sud.

Département de la Mvilia

Le Site de Biton

Ce site se situe à 50 km d'Ebolowa sur la route Ebolowa-Kribi. Les vestiges ont été repérés au lieu dit Oton-Melen. C'est un site riche au regard de la variété des vestiges. L'observation de surface indique une terre noire qui se retrouve dans les termitières indicatrices de sites anthropiques. Les vestiges importants se composent de nombreuses scories et de grandes tuyères, une enclume dans le secteur sud, et des amas de charbon de bois de grande dimension. Le secteur nord comprend des palmiers antiques étranglés par les grands arbres. Ce secteur permet d'observer l'évolution de la forêt avec la forêt primaire, la forêt secondaire, et la forêt taillée plusieurs fois remaniée par l'homme. Entre ces deux secteurs se trouve une meule en place. Le site est entouré par de petites fosses et une source dans un rocher. Le ramassage de surface a aussi livré un pot en céramique à moitié cassé. Les charbons furent prélevés pour tenter les premières datations avant la fouille et l'étude systématique du site, puis des analyses anthracologiques.

Le site de Mvamyetom

Il se situe dans le village du même nom à 20 km d Ebolowa sur la route Eholowa-Ma an. Le site fut découvert lors du creusement d une fosse 2 m de profondeur pour le prélèvement de la terre à brique. Dans la fosse, quatre morceaux de céramique furent ramassés, parmi lesquels, 1/3 de vase, deux tessons noirs, et un tesson marron. Ces éléments sont des indicateurs intéressants pour la fouille du site.

Après trois ans de recherche sur le terrain dans le cadre du programme, quatorze sites ont été découverts. Certains ont fait l objet de fouille et de sondage. Le matériel est abondant et varié. Le matériel obtenu jusque-là nécessite un début de traitement et d analyse, notamment les grandes quantités de charbon réparties sur les sites métallurgiques et dans la fouille, les séquences pédologiques des sites, et les tessons variés.

Au terme de quelques années de prospection, le bilan en terme de site et matériel archéologique est encourageant. Pour résoudre la problématique du programme il convient d engager des analyses de laboratoire sur le matériel déjà récolté, à travers la caractérisation physique et minéralogique des tessons, celle des séquences pédologiques, puis la composition, caractérisation et détermination des dégraissants végétaux et identification des végétaux contenus dans les tessons. La phase suivante verra la fouille systématique d un site et l analyse des vestiges des couches profondes en vue de saisir les paléoenvironnements, ces fluctuations de la forêt et les facteurs humains de leurs transformations.

■ **ETHIOPIA**

The B.I.E.A. Aksum Excavations, 1993

*David W. Phillipson
 Museum of Archaeology & Anthropology
 Cambridge University
 Downing Street
 Cambridge CB2 3DZ
 England*

This is a preliminary account of the research undertaken under my direction in the first year of renewed archaeological investigation of the ancient Ethiopian capital at Aksum. It follows campaigns directed in 1972-74 by the late Dr. Neville Chittick on behalf of The British Institute in Eastern Africa.

Work was conducted in Ethiopia during the period 21 October-23 December 1993. The project is sponsored by The British Institute in Eastern Africa, with additional support from The Society of Antiquaries of London, The McDonald Institute for Archaeological Research in the University of Cambridge, The British Academy, and The British Museum.

The 1993 excavation was planned as the first of five annual field seasons. The overall research design envisages continuing investigation of the main tomb-and-stelae complex (begun in 1973-74); research on the domestic economy and residential areas of ancient Aksum; and on the town's surroundings, including quarry sites, workshop areas, and peripheral settlements. In 1993 detailed work was concentrated on the first of these objectives, with reconnaissance towards the second and third.

The professional team totalled 12 persons, 5 of whom were Ethiopians. The locally employed labour force was steadily increased through the season to a total of 65 men.

Highlights of the season were the elucidation of the original setting of the

largest of the Aksumite stelae and its associated monumental tombs, together with the first archaeological demonstration of the importance of ivory in the ancient Aksumite economy.

The Mausoleum and East Tomb

These tombs, located but not excavated during Chittick's investigations of 1974, are both associated with the largest of the Aksumite stelae, Stela 1. The original plan for this stela is now apparent: it was intended to stand at the rear of a deep walled inlet or embayment set back from the front terrace wall of the stelae area, with entrances to a monumental tomb set in each side of the embayment (Fig. 1). There is increasing evidence to support the view that the stela, which would have been 30 m high and over 500 tonnes in weight, was never successfully set upright, but that it fell and broke whilst in process of erection.

The tomb on the west side of the embayment, designated the "Mausoleum" by Chittick, was entered through a monumental portal leading into a passage 16.65 m long and 1.90 m wide, roofed with massive dressed granite slabs in which were cut three square apertures connected to stone-lined shafts that originally led to the ground surface. Its excavation in 1993 was supervised by Mr. Michael Harlow. The passage has a height of 2.28 m, and its stone-flagged floor is 5.90 m below the modern surface. At its western end, the passage leads to a brick arch set upon massive slabs of dressed granite: no attempt was made to remove the earth blocking this arch, and what lies beyond it remains completely unknown. It is likely that a similar arch was originally located immediately inside the entry-portal; the brickwork has not survived, but the stone slabs from which it sprang have suffered only minor displacement. On each side of the passage is a series of five chambers, making ten in all, each 6.57 m long by 1.70 m wide (Fig. 2). At the entrance to each side-chamber, bordering the central passage, had originally been a brick arch springing from dressed stone slabs: none remains intact although the slabs and substantial remains of the brickwork survive (Fig. 3). The internal

walls of the Mausoleum, constructed of rough stones set in mud-mortar, had originally been thickly plastered with a coarse gritty render: careful examination of the substantial surviving areas failed to reveal any traces of painted or other decoration. This render is a previously unrecorded feature of Aksumite architecture.

The Mausoleum covers an area at least 16.65 m from east to west by 14.95 m from north to south. Its total known floor area is approximately 143.3 sq m and, when first entered, archaeological deposits extended to within 10–35 cm of the roof. It may thus be calculated that its total contained deposits comprised some 300 cu m, of which approximately one quarter was excavated in 1993, the whole of the central passage being cleared, together with the outer 1.0 m of two side-chambers. The greater part of the deposits in the central passage had clearly been introduced through the vertical shafts, and Dr. Jacke Phillips reports the presence of much late Aksumite or post-Aksumite material, including abundant faunal remains and (in the shaft-fill) some charred seeds. The lower levels overlying the flagged floor, however, showed less disturbance and the pottery that they contained was of classic "Red Aksumite" type. The excavations have so far revealed no incontrovertible evidence for primary burial deposits: it is possible that such will prove to be preserved in the side-chambers far from the vertical shafts, but the possibility must also be borne in mind that the tomb was never put to its intended purpose.

Exactly opposite the Mausoleum portal, in the east side of the embayment, is the entrance to the East Tomb (Fig. 4), excavation of which was supervised by Mr. Gavin Rees. This tomb lacks a monumental portal, but the two entrances are otherwise remarkably similar in style, construction, and position. It was only practicable to excavate the East Tomb to a distance of 2.4 m from the entrance: the main lintel and the first roof slab were both broken, the second roof slab appeared to be missing or seriously displaced, and the south wall had slumped. It was concluded that the tomb could only be excavated with safety by working down

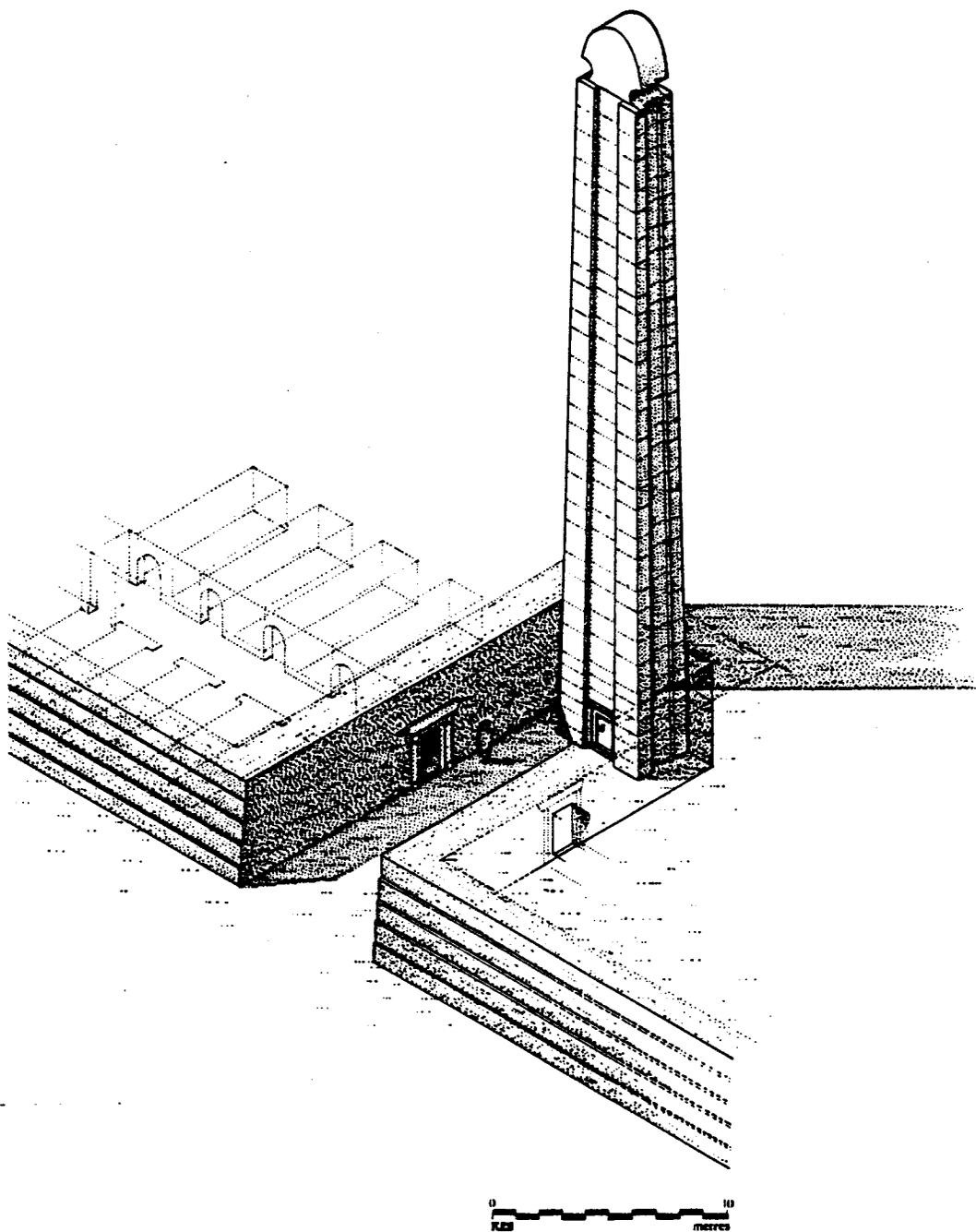


Fig. 1. Reconstruction of the possible original design for Stele 1, Mausoleum and East Tomb. The stele may have been intended to stand at a higher level, and the front of the embayment may have been walled in.

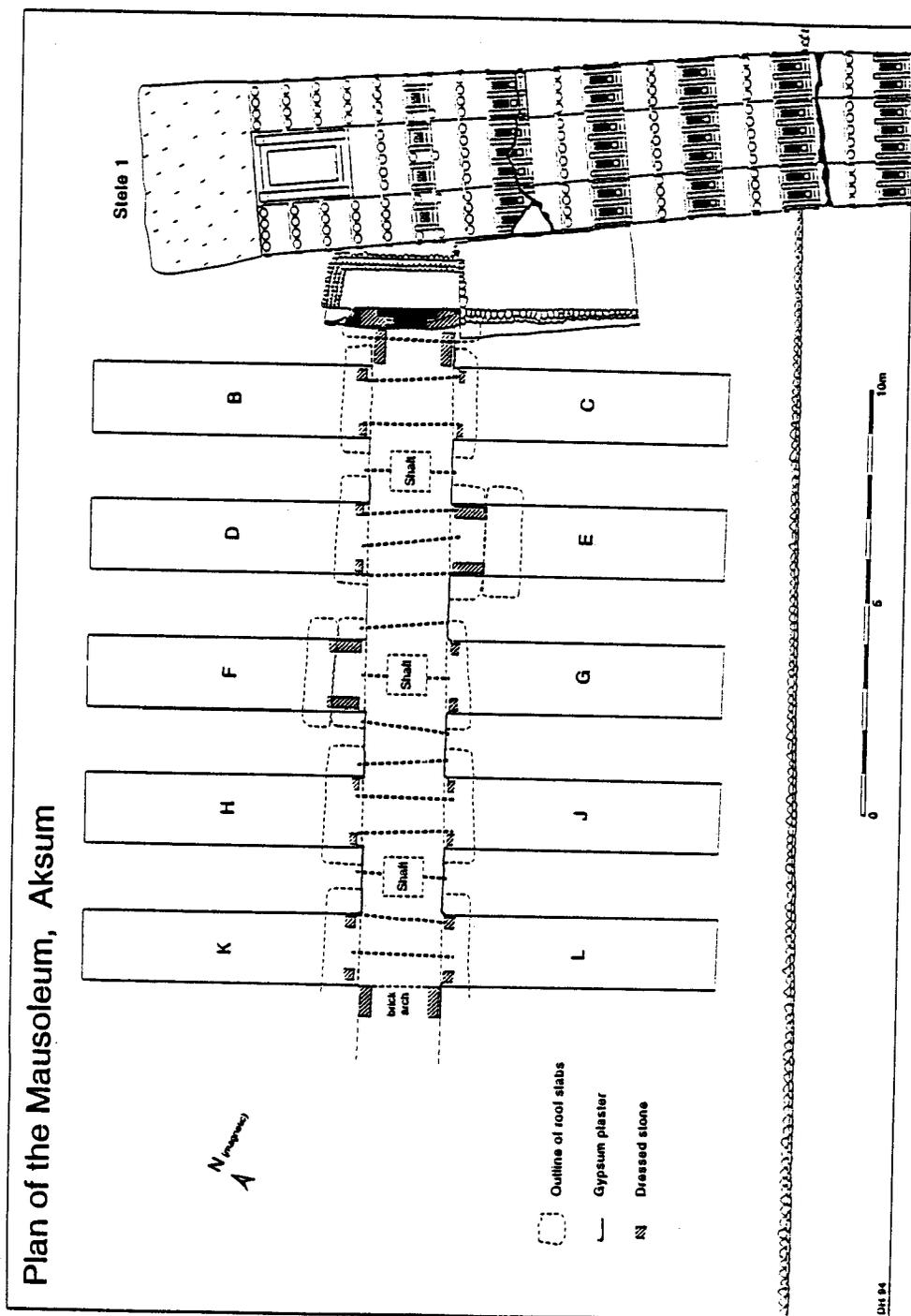


Fig. 2. Plan of the Mausoleum, as excavated in 1993.

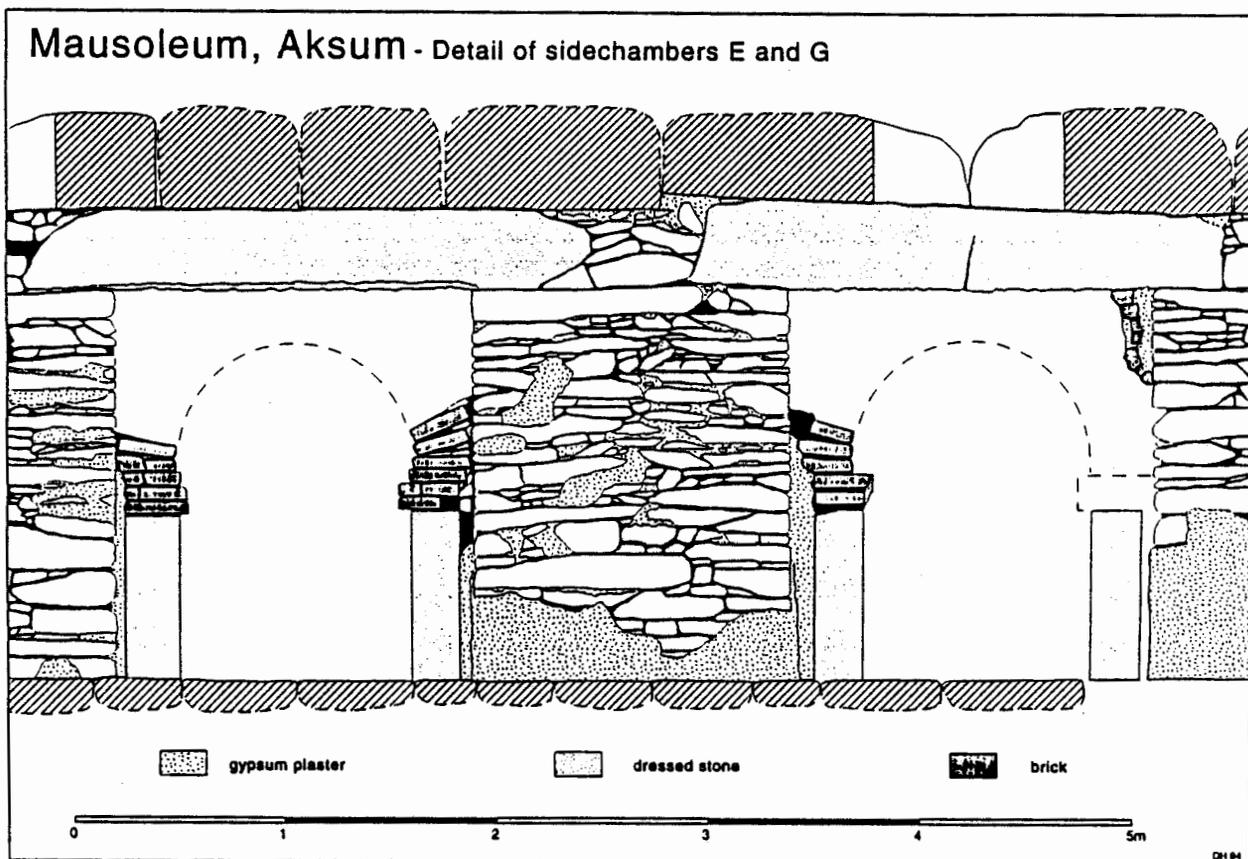


Fig. 3. Part of the Mausoleum's central passage, showing entrances to two side chambers not yet excavated.

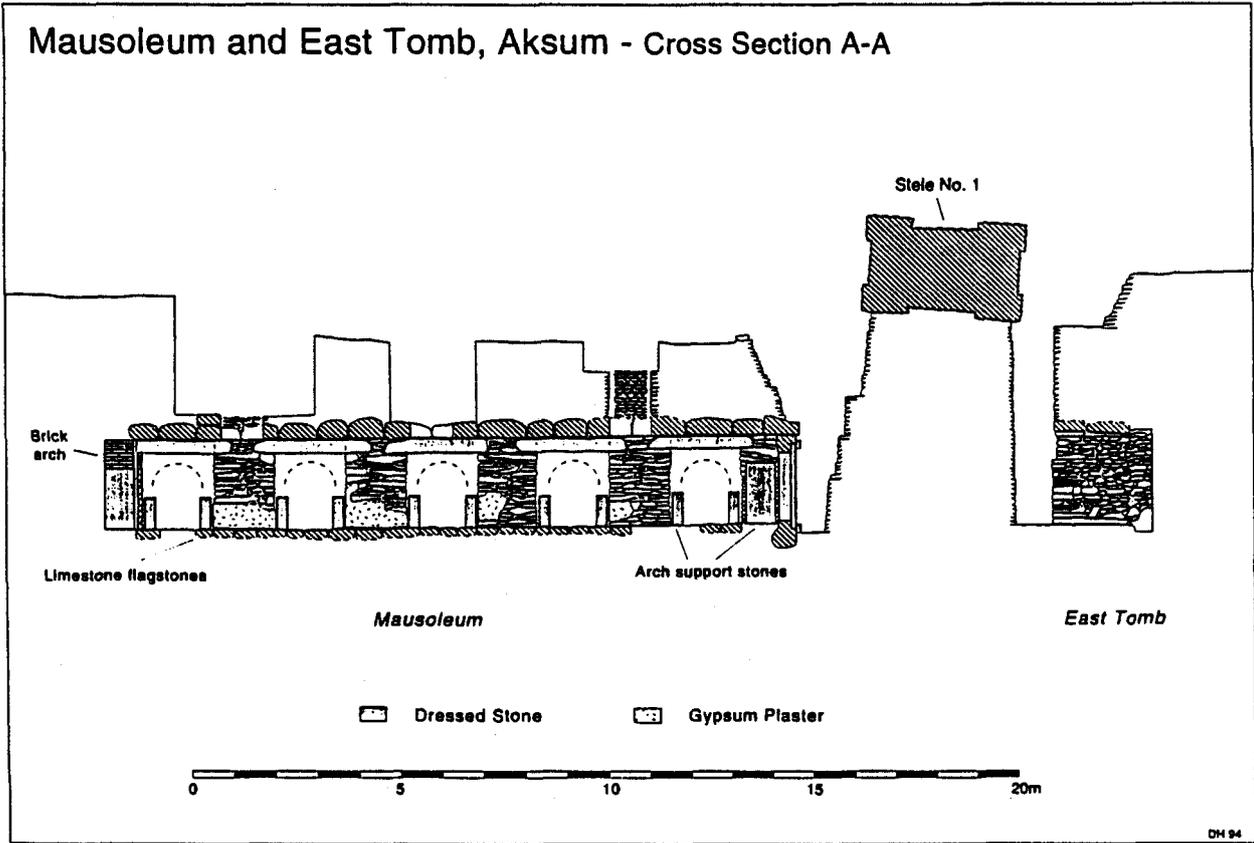


Fig. 4. Section through Mausoleum, Stele 1 and East Tomb.

from the modern surface. This will be a difficult and costly operation, because the ancient floor lies at a depth of 6.4 m and the extent of the East Tomb remains totally unknown. The tomb contents appear to be significantly less disturbed than those in the Mausoleum, and the pottery from most levels was exclusively of classic "Red Aksumite" type. Some doubt must remain, however, as to whether the East Tomb was ever completed: it appears to lack a stone flagged floor analogous to that in the Mausoleum. Furthermore, if the East Tomb entrance was originally designed to receive a portal, it seems more likely that this was never inserted than that it was subsequently removed. Clearly much further work will be needed before the East Tomb can be fully understood.

The complex of Stela 1, Mausoleum and East Tomb must now be viewed as a unitary design. As noted above, there is evidence that the stela fell and broke before it was successfully erected, and that the East Tomb may never have been completed. It is possible, therefore, that the complex was never put to its originally intended use. The complex's date of construction was estimated in 1974 as probably falling in the fourth century A.D.; further excavation will be necessary before any attempt can be made to refine this. It appears increasingly likely that the fall of Stela 1, broadly coinciding as it did with the adoption of Christianity at Aksum, led to the abandonment of the use of stelae as grave-markers. Interesting evidence for a change in symbolic meaning of Stela 1 following its fall is provided by the observation that the handle from the false door on its upper surface had been carefully chipped away in ancient times. Later elite tombs were of different types, as represented by the "Tomb of the False Door" and those traditionally attributed to Kaleb and Gebra Maskal.

The Tomb of the Brick Arches

This tomb is located some 25 m east of Stela 3, but does not appear to have been associated with any particular stela. It was entered in 1974 when its general plan was recorded and the first of its four chambers largely excavated. Its date was then

estimated as falling in the late third or early fourth centuries A.D.: it now seems possible that the true age is somewhat greater. The excavation was continued in 1993 under the supervision of Mr. Jess Tipper, with the assistance of Ato Getu Degefa.

The tomb is approached by means of an adit with 18 surviving stone steps (Fig. 5). The adit, 12.0 m long by 1.5 m wide, attains a depth of 6.2 m and was originally roofed horizontally with a series of rough stone lintels of which 7 survive in situ. The east side of the adit retains the original Aksumite stone wall to its full height in a remarkably fine state of preservation. At the foot of the steps, which are likewise well preserved, a horseshoe-shaped brick arch gives access to an antechamber, most of the contents of which were removed in 1974. A pit in the floor of the antechamber, not noted by previous excavators, was found to contain a very large quantity of bronze derived from one or more receptacles decorated with inlaid plaques.

The tomb itself comprises four rock-cut chambers, their floor being approximately 9.5 m below the modern ground surface (Fig. 6). It appears that the complex was roughly carved out as a whole, then subdivided by the insertion of cross-walls incorporating brick arches. Recesses in the walls of two chambers, not yet excavated, are provisionally interpreted as burial *loculi*.

Excavation in 1993 was concentrated in the second chamber, where a mass of archaeological material was preserved, despite having suffered some disturbance in ancient times. Complete and broken pots were mixed with disarticulated human bones, fragmented glass vessels, remains of elaborately decorated wood and metal boxes which had originally contained quantities of glass beads, and other metal items. Particular interest attaches to a substantial quantity of ivory, including two large plaques with fine carving of vines and animals (Fig. 7): the lifting and conservation of these unique but poorly preserved objects were accomplished through the skill of Ms Noel Siver, the project's Object Conservator. The complexity of this excavation necessitated meticulous work and slow progress: further conclusions about the

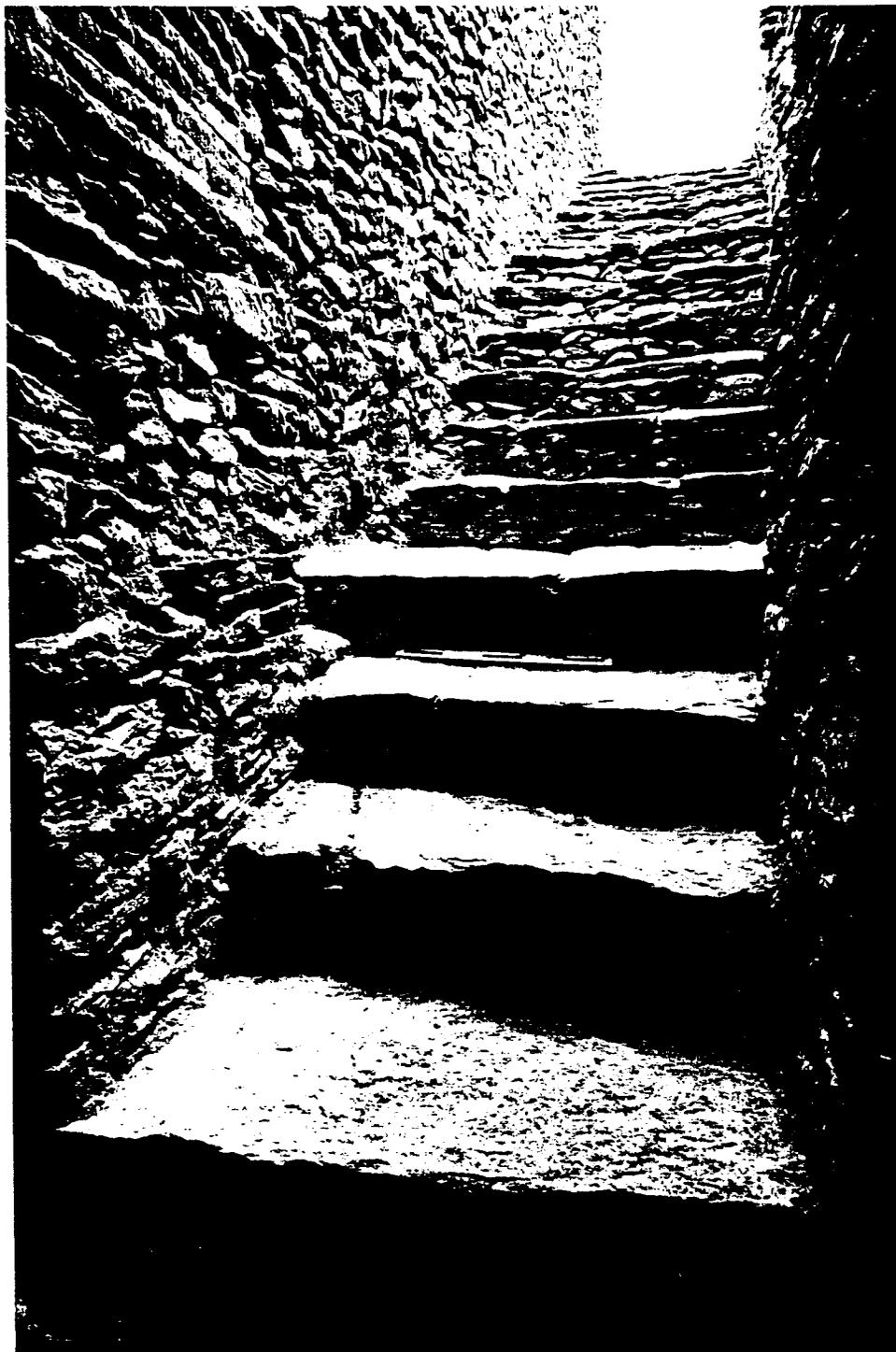


Fig. 5. The adit to the Tomb of the Brick Arches.

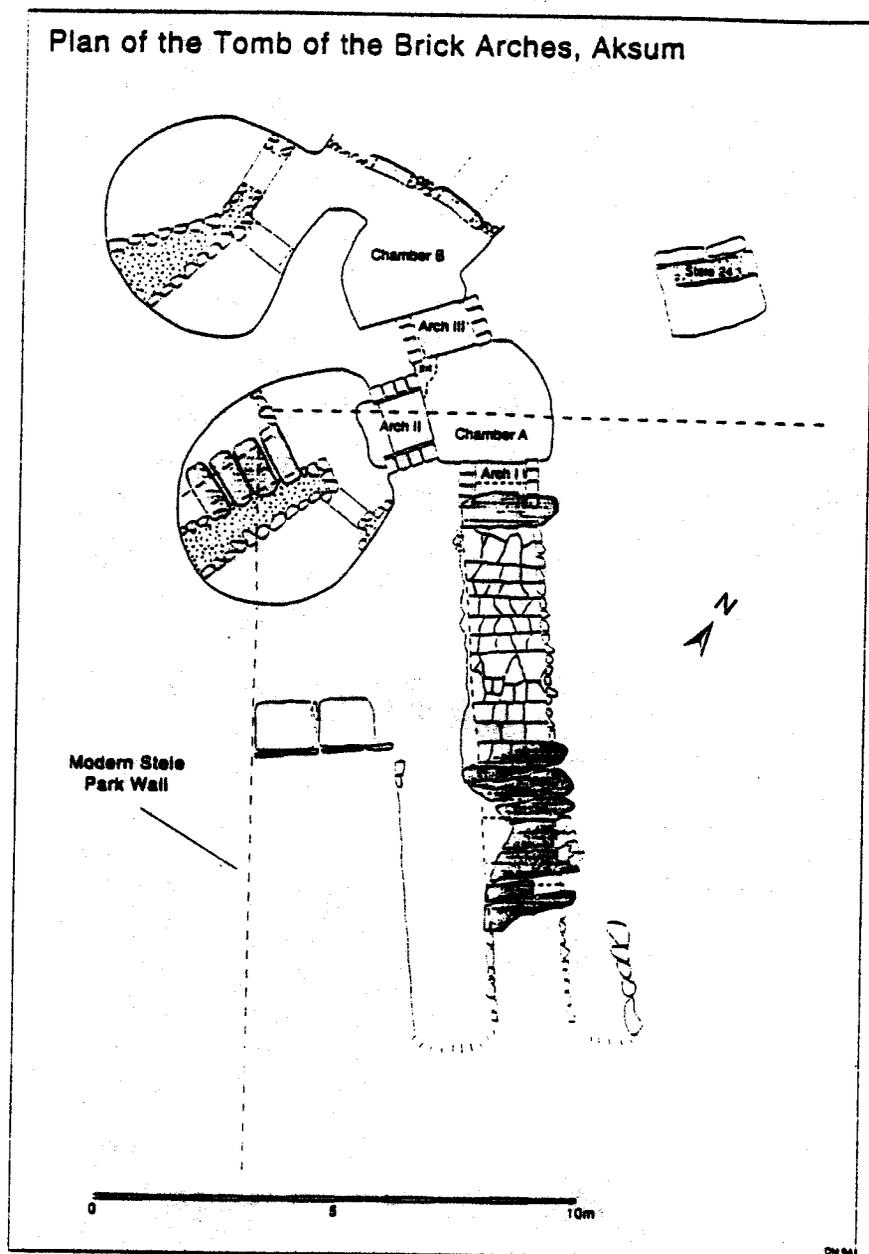


Fig. 6. The Tomb of the Brick Arches.

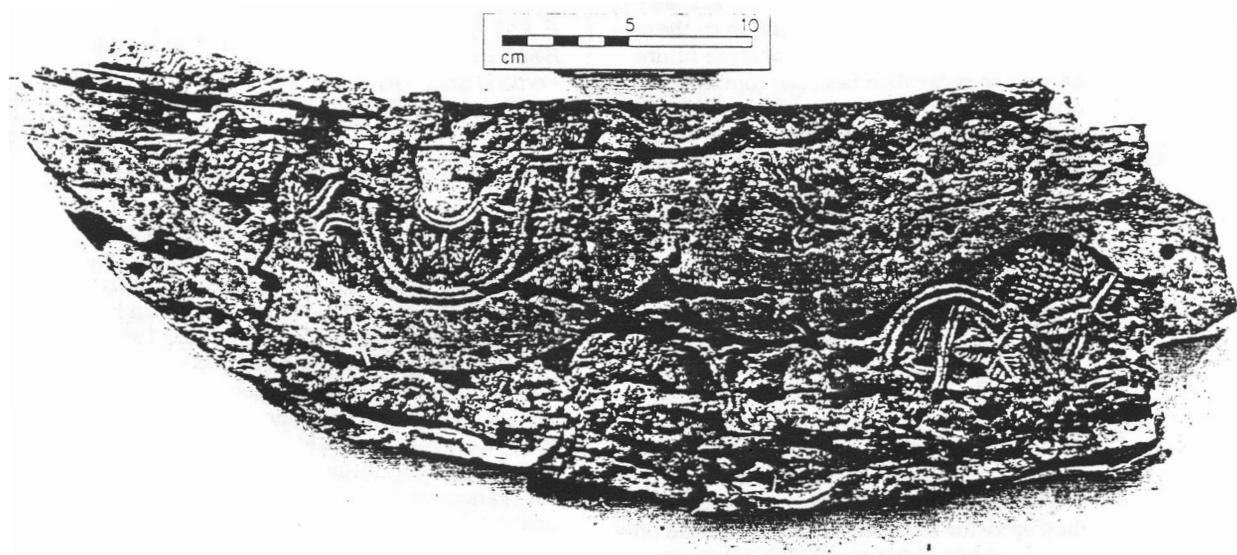


Fig. 7. Carved ivory plaque from the Tomb of the Brick Arches.

Tomb of the Brick Arches must clearly await the completion of further research.

Reconnaissance

Three areas of ancient quarrying were noted on Gobedra Hill, 3-4 km west of Aksum. Preliminary photographic recording was undertaken, but much more remains to be done when the vegetation can be cleared.

Preliminary reconnaissance was also conducted to locate areas suitable for the investigation of Aksumite domestic occupation, planned for 1994.

Monument Conservation

At the conclusion of the 1993 excavations, all areas investigated were left securely protected, the details being agreed in advance with officials from the Ministry of Culture. The intention is that these measures can, if it is decided at some future date when excavation has been completed to open the monuments to public view, be incorporated into a long-term conservation strategy. The entrances both to the Mausoleum and to the East Tomb were consolidated with retaining walls built in traditional Aksumite style, and roofed in such a way as not to impede general views of the area. The adit to the Tomb of the Brick Arches was likewise consolidated and roofed, its entrance and that of the tomb itself being securely sealed.

Acknowledgements

The research was supported at every stage, both in Addis Ababa and in Tigray by the Centre for Research and Conservation of the Cultural Heritage (CRCCH) in the Ethiopian Ministry of Culture and Sports. The interest, cooperation and assistance of very many people is warmly acknowledged. Among these are: H. E. The Regional President of Tigray, Ato Gebru Asrat; H. E. The Minister for Culture and Sports Affairs, Ato Leule Selassie Temamo; His Holiness The Patriarch; Her Britannic Majesty's Ambassador to Ethiopia, James Glaze Esq., CMG; Ato Masele Zeleke, Head of Culture and Sports Bureau, Makelle; Dr. Kassaye Begashaw, Head of CRCCH; the Director,

British Council, Addis Ababa, Michael Sargent Esq.; Ato Mabratu, Culture and Sports Bureau, Aksum; Dr. Merid Aregay, Addis Ababa University; Professor Tadesse Tamrat, Addis Ababa University; Dr. Bahru Zewde, Director, Institute of Ethiopian Studies, Addis Ababa University; and numerous other people, from all walks of life, in Aksum, Makelle, and Addis Ababa. Their contributions will be fully acknowledged in future publications.

■ **GHANA**

**Before the Flood:
The Golden Volta Basin**

*E. Kofi Agorsah
Black Studies Program
Portland State University
Portland, OR 97207
U.S.A.*

The Northern Volta basin has engaged the attention of major research projects in the last ten years with greater intensity than has been known in the history of research in the area (Agorsah 1983, 1985, 1986, 1988, 1990; Kense 1983, 1985; Stahl 1983, 1989). Explanation of the cultural development as well as connections or relationships between ethnic groups, their geographical distribution and settlement patterning, and the nature and mechanism of functional adaptation in the area are issues that appear to have been the main foci of investigation.

Between 1981 and 1985 the Volta Basin Archaeological Research Project (VBARP) has focused investigations on the geographical area currently inhabited by the eastern Gonja, Nawuri, Nchumuru, and the Krachi-speaking people. The initial focus, during the period, was on the Nchumuru settlements. Conclusions based on the data available emphasized the northern Volta Basin as an important area for the development of early cultural traditions in that part of West Africa. It was also

generalized that ecological, historical, and cultural variables of the study indicate two waves of human movements: a north-south one occurring several thousand years ago in the stone age; and a more recent and influential one in the opposite direction beginning in the second millennium A.D. These and other generalizations continue to require supporting evidence from other parts of the basin.

Several field trips undertaken between 1985 and 1990 to examine the location, distribution, and patterning of settlements as well as traditional building construction and their related decay patterns in the Krachi area are discussed in this presentation, in an attempt to give further support to some of the generalizations made in the earlier phase of the research of the VBARP and to continue the study of mud wall decay patterns in the southern section of the northern Volta basin and among a different ethnic group.

The 1985-90 period of study, therefore, shifted from the Nchumuru ethnic group area occupying the basin of the Volta and the Daka rivers to the basins of the Oti, Sene, and the Volta rivers inhabited solely by the Krachi who are one of the major Guang-speaking groups in the basin. Dadiase, Krenkuase Yabin, Kadengben, Ahinkro, Akroso Beposo, Aworoso (Aweresi), Gharee, Banka, and Begyamso are some of the well-known sites in the areas around Krachi. Unfortunately these and many other sites are now inundated by the expanding artificially built Volta Lake. More recently the VBARP has located the sites of Abokono, Akwankwakwae, Old Kajaji, Old Mokraye, Kononketakpan (Kononaye), Kumpo, and Takragya among others. As indicated in an earlier report of the survey, many of these sites appear to have developed in valleys, flood plains, fans, confluences, and pediments, with the soils that are periodically revived by alluvial and colluvial deposits. The streams, springs, and seepage or groundwater provided water for those located in areas where rainfall was inconsistent and river water was not readily available.

The main excavation was conducted at the site of Kononketakpan (Kononaye)

located on the western bank of the Volta Lake opposite the village of Boafri (Fig. 1). To the north, east, and west of the village of Bubuakro, also referred to as Tokuenya by immigrant fishermen, is located the site of Kononaye, which forms part of the vast open land that gently rises from the valley of the Volta Lake for some 10 m to just about 100 m above sea level. Its northeast and south boundaries are marked by the big meander of the marshlands of the Volta Lake. Although there are slight elevation differences here and there, the topography is generally uniform. Large mounds with lots of pottery, stone circles, and termite mounds are some of the main features of the site, which appears to extend over 3 km along the banks and over 500 m inland. Shea butter and baobab trees are most common although there are several other plants that are of medicinal and other uses to the inhabitants of Bubuakro.

Ethnography Study

Two aspects of ethnographic data collection were very important for the excavation conducted at the Kononaye site but can be only briefly discussed.

The Krachi

Unlike the Nchumuru who only recently introduced the paramount chief system, the Krachi have since ancient times been centrally controlled by a paramount chief who must come from one of three clans, and the Krachi Dente (an oracle that had both spiritual as well as political powers). While the paramount chief controlled the stool which, as is known, is the embodiment of the ancestral and other powers of state, Krachi Dente through the Dente Bosomfuo controls the land. The implication of this system for patterning and spatial behavior within Krachi settlements has not yet been clearly identified but observations so far indicate that locational behavior patterns are only controlled by clan affiliations based on social relationships similar to what has been observed to operate among the Nchumuru. However, it appears from the study of a typical Krachi village so far that the locational or distribution pattern of

KONONKETAKPON (KONONAYE)

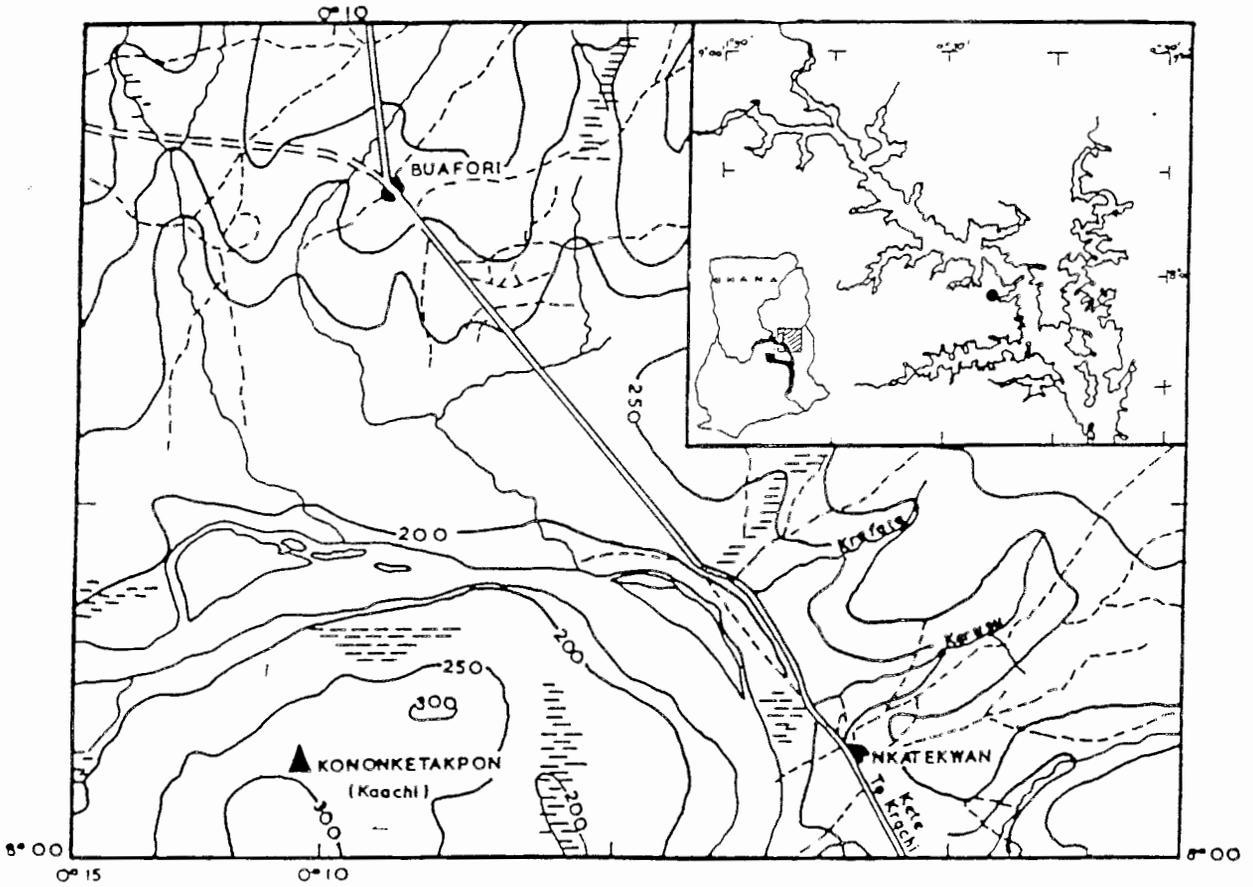


Fig. 1. Kononketakpon (Kononaye).

households is not physically the same as among the Nchumuru. It is also clear that although the local rule (LR) model applied to Nchumuru settlements (Agorsah 1983, 1986, 1990) does not generate the same pattern, the trend of locational decision-making among the Krachi follows the same rule.

House Construction and Decay Patterns among the Krachi

Two basic structural systems of house construction are observed among the people of Bubuakro: wattle and daub in which the load of the roof and the floor are carried by a framework until they were redistributed after the spaces in the frame have been filled with earth, and secondly the mass construction in which the weight of the roof is carried completely by an earth wall. Only the latter is observed among the Nchumuru and the decay and collapse patterns of such buildings differ from those using an initial framework. In both types of construction, however, stability is not usually a serious problem as the buildings are small and short or low. The lining of the bases of walls appears to be a common precaution to avoid erosion from rain splash. The collapse of walls by outward buckling as noted at Wiae in the Nchumuru area also appears to be common with the mass earth construction at Bubuakro. The wattle and daub house appears to collapse in a haphazard manner although sometimes outward and its life is more easily threatened by termite attack.

A general observation was that the strength of a building in Bubuakro depends on the number, size, and proportions of windows or openings. This appears to have been the reason why such openings are kept at a minimum. As was noted at Old Wiae of the Nchumuru, there appears to be a shift from circular buildings to rectangular because the floor areas of houses observed at the archaeological site of Kononaye are predominantly circular while in the modern village very few circular buildings are observed. An issue that is being examined is the origins and distribution of termite hills in the Bubuakro area. Can it be assumed that the location of termite hills represent the past location of collapsed houses or do they

indicate the location of a particular type of trees or plants or rubbish dumps or burials or an area of a specific activity of some kind? The termite hills are of economic use to Bubuakro as they are a source of feed for fowls and the clay obtained from them is very good for making fish-smoking ovens, hearths, and similar structures.

Archeological Evidence

An eight-week excavation of the site of Kononaye, was conducted with the support of Earthwatch (Center for Field Research) volunteers, graduate and undergraduate student volunteers from the University of Ghana, High and Secondary school and Training College students.

On the basis of results of soil chemical analysis and surface distribution of structural features and artifacts, the site was divided into five areas named KY1 (Kononaye 1), KY2, KY3, KY4, and KY5 (Fig. 2), indicating the sequence in which they are to be investigated, but by no means representing the order in which they are most threatened by inundation of the Volta Lake. KY1 was selected as the first to be investigated because it was the most threatened of the five divisions at the time.

KY1 marks the northern-most part of the Kononaye site and consists of a series of mounds overlooking the lake, one of which was completely, and two others partially, excavated during the eight-week season. From the seven 1.5 to 2.0 x 6 m trenches and four 1 x 2 m test pits, approximately 30,000 potsherds and over 200 other artifacts (mainly small finds) were recovered.

Stratigraphy

Generally, all the trenches reached level 1 at a depth of 7 m on average, but three of those which were closer to the lake touched water table at that level. The other four trenches farther away from the lake reached level five, about 2.8 m on the average at bedrock. Levels 2, 3, and 4 were the main cultural level, level 4 probably of a late stone age tradition indicated by polished stone axes (Fig. 3), a stone and bone beads, as well as the fewer, thicker, cruder, and undecorated potsherds.

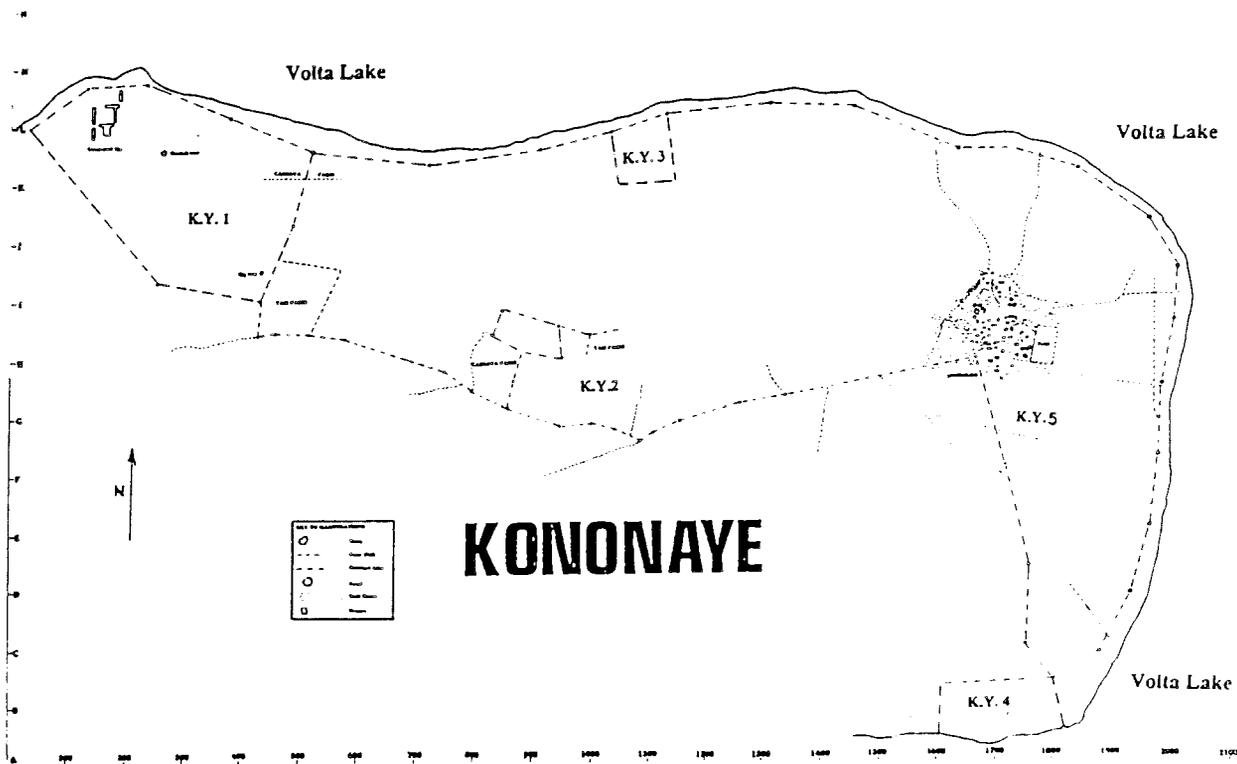


Fig. 2. Kononaye.

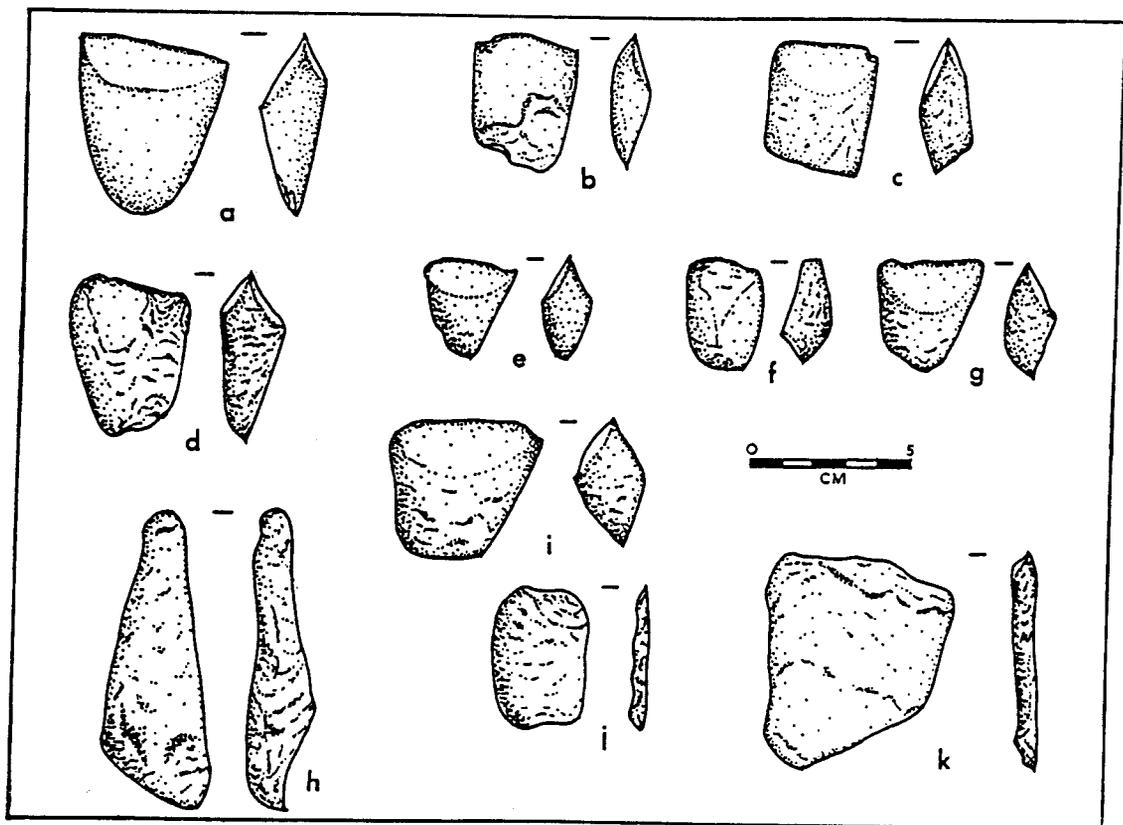


Fig. 3.

Thin, and in some cases very thick, lenses of shell signalled the appearance of a new level. The stratigraphy seems to indicate that there was a fairly long break between levels 3 and 2, a break that probably supports the view that the site may have been temporarily abandoned. When this break would have occurred is not yet certainly known. Could this have been the time of the first movement of the Krachi people southward as generalized from the Nchumuru material? How much do we tell from the C14 dates so far obtained?

Stone Circles

An important feature of levels 1 to 3 consists of circles of stone of approximately 1.5 to 2 m in diameter placed around one very large stone. The smallness of the size of the circles clearly suggest that they did not mark the bases of houses. Their location in relation to two house floors identified at KY1 points to some other use: bath houses? or bases of fish-smoking ovens? or storage facilities? Circular fish-smoking ovens of the same diameter are still used in the modern village of Bubuakro and appear to represent a continuity from previous practice at Kononaye.

Pottery

Preliminary study of potsherds suggests predominance of large pots such as water storage pots in levels 4 and 5, while in the top three levels the main vessels are bowls and cooking pots. There is some kind of uniformity in the quantity, types, and decoration of pottery material throughout the first three levels, although slight differences have been noted. Pottery manufacture continues to be a practice in the modern village of Bubuakro where it is claimed to be an ancient tradition that produced pots of various forms and with different decorations (Fig. 4).

Other Finds

Other finds include several local ceramic smoking pipes mainly from levels 1, none from levels 3 and 4 (Fig. 5); spindle whorls mainly from level 2 (Fig. 6i), ceramic game

pieces, measuring approximately 2.5 cm diameter with thicknesses varying between .5 and 1.3 cm; an ivory pendant from level 2, which is conical and grooved around toward both ends containing a hole at the wider end, which is approximately 5.1 cm long (Fig. 6a); bone awls or needles generally 4.5 cm long, level 2 (Fig. 6 b, c); one stone and one bone bead from level 4 (Fig. 6f, g); a few glass beads from surface and level 3; one piece of a "Kintampo" cigar (surface collected by a local farmer near KY 2, Fig. 6h); what appears to be a bone fish mending needle (Fig. 6e); and a fragment of an ivory bracelet (Fig. 6d).

A large quantity of shell was collected from the three top levels, clearly indicating a considerable reliance on shellfish as food resources of the River Volta.

Some Observations

The Kononaye site coincides geographically with the area of the greatest concentration of stone age sites, material of which type has been observed at the site. The site is in the center of the area observed to have the greatest diversity of Guang languages, a criterion linguists associate with the location of the ancestral language of the Guang. It is difficult to associate the various movements from and into the Kononaye area with any period of the split within the Guang linguistic group. Evidence is clear from Kononaye that the site was abandoned, even if briefly, and that would be considered as the period of some kind of movement out of the area. Radiocarbon dates obtained so far are as follows:

1. Beta-59895 (KY1/90/T2/L2) 140 ± 50 BP for the most recent level when the site was temporarily abandoned by the Krachi until it was resettled in the mid-1960s; (mid nineteenth century)
2. Beta-59896 (KY1/90/T2/L3), 480 ± 50 BP for the earliest occupation of the site by the Krachi. This date could extend half or one century earlier as level 3 overlay an earlier cultural level consisting mainly of Late Stone Age/Iron Age tradition, which in

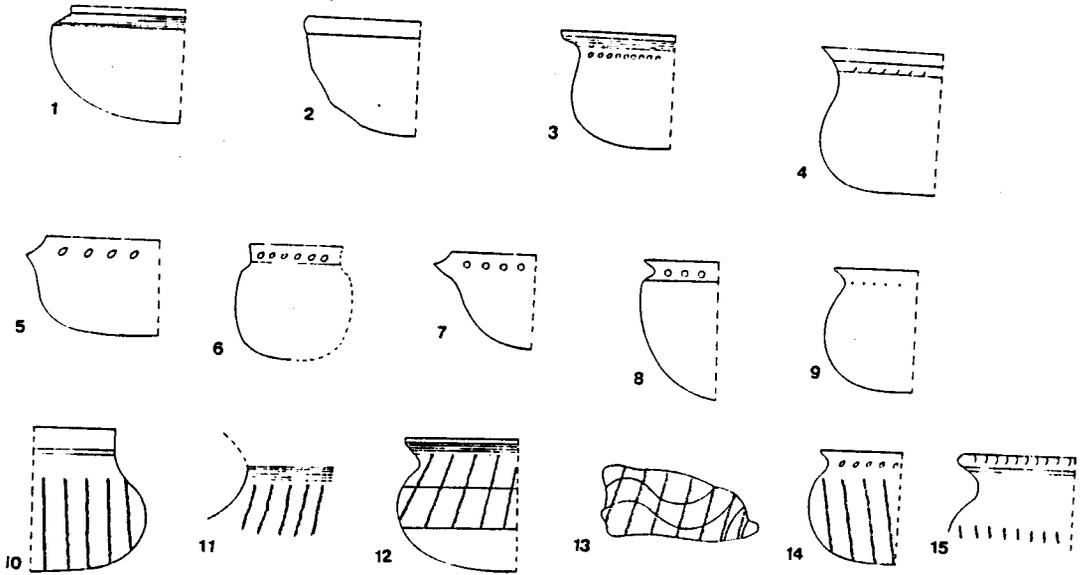


Fig. 4.

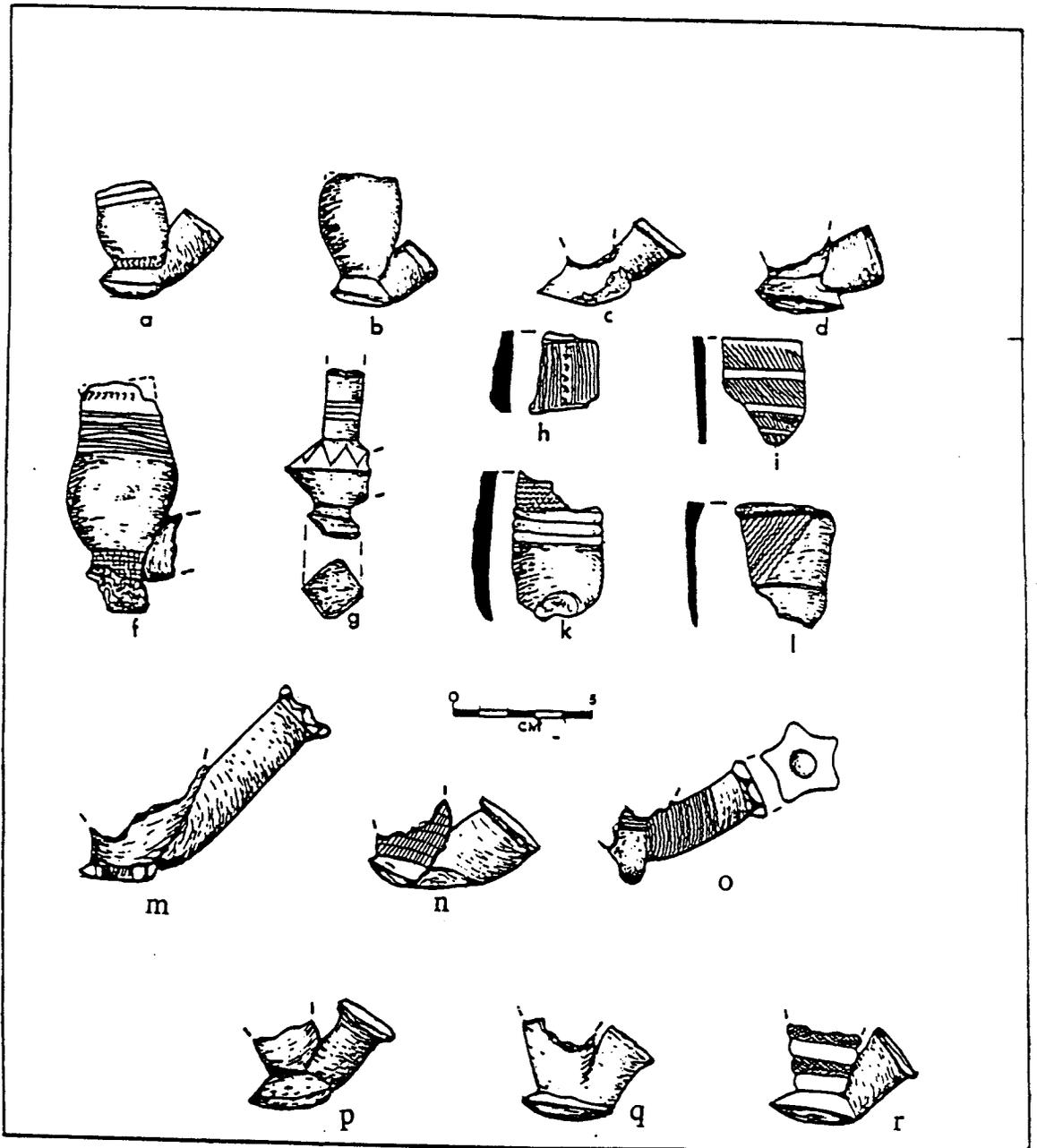


Fig. 5.

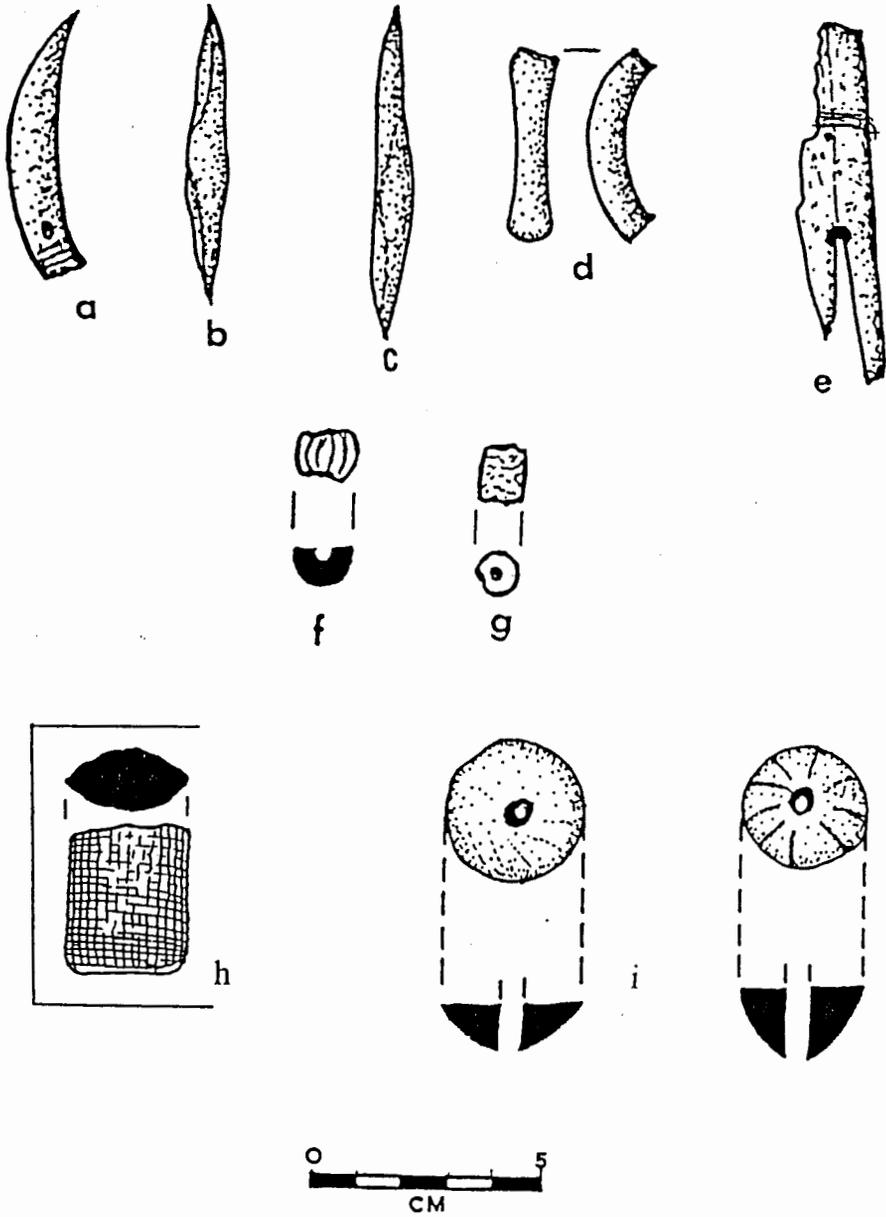


Fig. 6.

the general Ghana area dates to the ninth century A.D. at New Buie.

These dates appear to support the speculation that the Krachi ethnic group had moved into that part of the basin and established viable traditional political groupings consisting of family groups or clans possibly as early as the early part of the fifteenth century. The dates also indicate, if we are to assume that they represent the true picture of the period of occupation of the basin by the two main groups in that portion of the basin, that the Krachi were in the basin more than a century before the Nchumuru on the basis of mid seventeenth century dates from the site of Old Wiae, and almost a century before the earliest Europeans set foot on the coast of Ghana. Of course these suggestions take the dates over its widest range A.D. 1470 ± 50 BP and 1810 ± 50. New dates may require the revision of this conclusion and at this point it is unlikely that this conclusion can be used for any serious generalizations on the sequence of occupation of the basin. It is necessary to obtain many more dates not only for the two ethnic groups, but for as many other groups as share the basin today. The Volta basin undoubtedly is an area that needs to be much more closely examined to determine the colonization of much of what is Ghana and adjoining areas. This research is only one of several, and it is hoped that the analysis, when completed, will enable more concrete generalizations to be made for a better understanding of the relationships between settlements of the Krachi and other ethnic groups who shared the Volta basin and its resources.

Acknowledgments

This study was supported by the Research Committees of the University of Ghana Legon, Earthwatch and Center For Field Research, Watertown, U.S.A., The Ghana Museums and Monuments Board, Accra, and the University of the West Indies, Kingston, Jamaica. Participating in the project were students and volunteers from Krachi Secondary School in the Volta Region, Ghana, my brothers Felix Agorsah of the National Nursery Teachers Training Center, Accra, and Francis Agorsah of the

Ghana Teaching Service, Brong Ahafo, Ghana as well as my sons Patrick and Francis. To all these individuals and organizations and also particularly to the Chief and elders of Bubuakro and Buafore and specially my Research Assistant, Mr. Seth Kumah of the Sociology Department, University of Ghana, Legon Accra, I give my very sincere thanks.

References

Agorsah, K.
 1983a An ethnoarchaeological study of settlement and behavior patterns of a West African traditional society: the Nchumuru of Banda-Wiae in Ghana. Ph.D. dissertation, UCLA, Univ. Microfilms Int. Ann Arbor Mich. (83-21, 948).
 1983b Social behavior and spatial context. *African Study Monographs*, 4: 119-28, University of Kyoto, Japan.
 1985a Archaeological implications of traditional house construction among the Nchumuru of Northern Ghana. *Current Anthropology* 26 (1): 103-15.
 1985b Excavations in the Northern Volta Basin. *West African Journal of Archaeology*, 15: 11-40.
 1986a The internal spatial organization of traditional houses in Northern Volta Basin of Ghana. *Research Review*, 2 (2): 101-34. Inst. African Studies, Legon.
 1986b *Settlement Pattern Analysis in the Northern Volta Basin*. Archaeological Research Report for 1983-85, presented to the National Geographic Society and the University of Ghana, Legon.
 1988a Evaluating spatial behavior patterns of prehistoric societies. *Journal of Anthropological Archaeology*, 7 (3): 231-47.
 1988b Settlement history of the northern Volta Basin of Ghana. *National Geographic Research* 4 (3): 371-85.
 1990 Ethnoarchaeology: the search for a self-corrective approach to the study of past human behavior. *African Archaeological Review* 8: 189-207.

Kense, F.
 1983a Daboya Project update. *Nyame Akuma* 22: 10-12.
 1983b Field report on Daboya, Ghana. *Nyame Akuma* 23: 8-11.
 1983c Western Gonja Project (preliminary report). *Nyame Akuma* 26: 18-20.

Stahl, A.
 1983 Ghana. *Nyame Akuma* 22: 11-12.
 1989 Protohistoric archaeology in the Banda area. *Nyame Akuma* 32: 12-17.

preliminary results of the surveys carried out in 1992 and 1993.

Survey Procedure

The initial focus of survey work at Sehonghong is the area within a two-hour walk of the main site. This contour is chosen as there is reason to think that the bulk of the plant resources exploited from Sehonghong, as well as some of the animal resources, will have fallen within it, but I do not expect it to have acted as a leash to which people were inflexibly tethered; resources lying outside it will also have been exploited. Geology is an important variable in affecting the local archaeology and rock-shelters are almost entirely restricted to the lower-lying Clarens sandstone. Within Sehonghong's two-hour site territory some 80-90% of the Clarens Formation has now been inspected. Above and on top of it, survey coverage is not as complete and has taken the form of linear transects. We have attempted to space these approximately 1 km apart and to keep them straight, but the location of villages, fields, and some topographic features (e.g., steep cliff-faces) acts as a constraint on our ability to do this. So far our coverage is more complete to the north of the Sehonghong River than to its south, but there is no indication in the local ecology or topography to indicate that the two areas should exhibit any differences in the kind or number of sites present. For the moment, we have not yet analysed assemblages in the field, and we have also refrained from collecting them.

■ **LESOTHO**

First Results of the Survey of a Hunter-Gatherer Landscape in the Lesotho Highlands

Peter J. Mitchell
 Department of Archaeology
 University of Wales
 Lampeter
 SA48 7ED
 U.K.

Sehonghong rock-shelter in the eastern highlands of Lesotho has a long sequence of Middle and Later Stone Age deposits, associated with good quality preservation of organics, that extend back well into the Upper Pleistocene (Carter and Vogel 1974, Carter et al. 1988). Excavations here were renewed in 1992 as part of a long-term investigation of late Quaternary hunter-gatherer adaptations in this part of southern Africa. As previously reported, (Mitchell 1993, 1994a; Mitchell & Vogel in press), these have already shown that the occupation history of the Sehonghong site is much more complex than previously suspected. Single sites, no matter how rich their archaeology, do not, however, exist on their own, although they may well, at times, have been the focal points of regional settlement systems. Consequently, an additional part of work at Sehonghong is field-survey of the surrounding area. I report here on

Results

In less than three weeks of work we have located 54 new Stone Age sites within our survey area. Together with sites previously recorded by P. Carter (1978) and P. Vinnicombe (1976) in the 1970s and by Smit's (1973) ARAL Project in 1985, some of which we have relocated; this brings the total of sites known in the area to 91. Two of these can be attributed to the Early Stone Age (ESA), 30 to the Middle Stone Age (MSA) and 24 to the Later Stone Age (LSA). Five sites have evidence of both MSA and LSA occupation, five have undiagnostic

lithic scatters and six contain only grindstones. In addition there are 19 painted sites for which associated lithic scatters are either absent or have not yet been reported. I now discuss some of the key points that are beginning to emerge from the analysis of these sites and their patterning across the landscape.

It is abundantly clear that Sehonghong is the only major rock-shelter within the survey area; no other site comes close to it in size, depth of deposit or richness of rock art. However, there are at least three other shelters that have some archaeological deposit present and surface material of probable post-classic Wilton Industry affiliation. Dates from Sehonghong (Mitchell and Vogel in press) suggest that these sites will have dates of < 2000 BP; one of them was observed in 1985 to contain the base of a pot at a depth of some 70 cm below the surface and, although this has since been lost to river erosion, sherds that appear to be identical to those found in the uppermost layers at Sehonghong were noted there in 1992. This pottery is, in its colour, crudeness of manufacture, mean thickness, etc., very different from local nineteenth-/twentieth-century Basotho pottery.

The existence of rock-shelters in the Sehonghong area that contain lithic assemblages, but that lack paintings, has not previously been recorded. Nine such sites are now known, as well as two extensive MSA open sites a little downstream of the Sehonghong site that lie immediately in front of and below what are probably collapsed rock-shelters. Representing another kind of shelter use are sites, sometimes no more than large upstanding boulders, that contain one or a few grindstones, and nothing more. It seems likely that these artefacts have been cached at these locations, all within the river valleys, for repeated use in on-the-spot plant processing, although one has traces of red ochre.

Slightly more open air sites are known than rock-shelters, and this preponderance will almost certainly increase greatly as survey of the plateaux above the river valleys is intensified. An arbitrary cut-off point of ≥ 3 artefacts/square metre has been

used in identifying sites, but more isolated "smears" of artefacts have been located elsewhere in the survey area. Quarry sites remain elusive, although small outcrops of opalines, baked sandstone, and dolerite associated with some flaking activity have been located within the lavas of the Lesotho Formation; to date we have not identified stone-working at the principal dolerite dykes within our survey area, while many opalines may have been obtained as river-borne nodules. Of particular interest, however, has been the recognition, so far on a nonquantitative basis, of what appear to be four different kinds of MSA assemblage. In addition to those that seem to emphasize small blades and flakes, we have found others where flakes are large and exclusively in coarse-grained rocks. Assemblages that are mostly made up of flakes in either opalines and/or coarser rocks, and occurrences that have a strong blade/point component form the other two kinds of MSA open site. The latter seem to occur in particularly dense scatters, for example at the two collapsed shelters already mentioned. There is obvious scope here for investigating the roles of chronology and function in understanding this intersite variability.

Two LSA open air sites are perhaps the most spectacular to have been found so far. The first of these received brief mention in an earlier report (Mitchell 1993) and lies on the banks of the Orange River about 1 km upstream from the latter's confluence with the Sehonghong River. Five phases of occupation, all apparently LSA, are visible in the exposed section, separated from each other by sterile silts. Bone, including fish vertebrae and the remains of dassie (*Procavia capensis*) and small bovinds, is well-preserved and charcoals are also present. This site, which is, to my knowledge, unique within Lesotho, holds great potential for understanding how activities at an open-air site differed from those undertaken within rock-shelters. More importantly, it may help establish if the marked pulsing evident at Sehonghong and in other southern African rock-shelter sequences (Mitchell and Vogel in press) is truly a signature of regional settlement history, or rather only of the

periods when rock-shelters were preferred as habitation sites. Excavations at this site are planned for 1995.

The second site lies on the plateau a few kilometres north of Sehonghong. Located in 1993, it consists of a series of at least five piles of rock, no more than half a metre high, strung out along a line on the southern side of a steep, tributary valley. Although close to a modern village, it is clearly unrelated to either farming activity or house construction; nor is it associated with a cemetery. Further investigation is required, but I tentatively suggest that it may represent the remains of a driveline used in the hunting of antelope. The rock piles would have appeared more impressive in height when looked at from below, but may also originally have been larger, or have been extended by using branches, skins, etc. The opposite slope is far too steep for animals to have climbed up and the location of these piles on the gentler incline would thus have helped funnel game along the stream, and probably into a trap or ambush. Both Arbousset (1852) and Barrow (1801) recorded the use of such drivelines by Bushmen in the early nineteenth century and scenes showing the use of nets strung across narrow ravines to trap small bovids are portrayed in the rock art of both the western Cape (Manhire et al. 1985) and Lesotho (Vinnicombe 1976: 292).

Discussion

Bousman (1988) has analysed the distribution of sites by age and location in the Senqunyane Valley of south-central Lesotho, and I have carried out a similar study for the rather different landscape of the Phuthiatsana-ea-Thaba Bosiu (PTB) Basin in Lesotho's western lowlands (Mitchell 1994b). The distribution of sites around Sehonghong is in agreement with these studies in suggesting that MSA sites are most typically found in open locations, and LSA sites within rock-shelters; ESA sites are known only at Sehonghong and are restricted to the flats lying above the Orange River (Carter 1978). As in the Senqunyane Valley, rock-shelters are overwhelmingly concentrated in the river valleys because this is where the Clarens Formation is typically

exposed. A tendency for painted shelters to be located in the main river valley or its principal tributaries is also evident in both the Senqunyane and Sehonghong surveys. Furthermore, as in the PTB Basin rich open air MSA scatters are often in prominent positions that afford excellent vantage points for monitoring the landscape, for example on knolls overlooking the confluence of the Orange and Sehonghong Rivers. ESA sites have only been recorded at Sehonghong and cannot therefore be compared with the other two areas.

An important preliminary conclusion is that the archaeological sites within the Sehonghong site territory seem to exhibit a pronounced clumping. This needs testing by appropriate spatial analytical techniques (e.g., nearest-neighbour analysis, Hodder and Orton 1978), as well as by further survey. However, it appears for now that both MSA and LSA sites are concentrated within a 2–3 km radius of Sehonghong, and particularly along the Sehonghong Valley and around its confluence with the Orange River. Beyond this area, a scatter of shelters, some painted, some with attendant artefact scatters and others with both, is found along the Orange River, but open air artefact scatters are rare and typically consist of no more than a few dozen artefacts. The implication is that activities requiring extensive stone-working were limited spatially and that the factors affecting this (perhaps principally plant food and firewood availability?) affected both MSA and LSA populations.

Such clumping of painted shelters close to presumed major occupation sites (e.g., Sehonghong) was detected by Carter (1978), who suggested that it might relate to the employment of art as a form of territorial marking. Making full use of the fuller, ethnographically grounded interpretations of San art that have been developed since then (e.g., Lewis-Williams and Dowson 1989), I plan to examine the spatial distribution of particular themes within the art (such as explicit trance imagery, conflict scenes, domestic livestock). The analysis, which will benefit from the use of GIS technology, will hopefully add a cognitive dimension to the study of hunter-gatherer

landscapes at Sehonghong and perhaps help in identifying particular landscape locations or features as being of special symbolic significance, as discussed by Deacon (1988) for the /Xam Bushmen of South Africa's Northern Cape Province.

Another striking feature of our survey is the absence of flaked stone artefacts above about 2,050 metres in altitude. This is not unexpected, since these higher altitude areas totally lack natural shelter and firewood and were almost certainly poor in both animal and plant resources relative to those below them. It nevertheless reinforces the view (Mitchell 1994b) that the higher parts of the Maluti Mountains are essentially lacking in archaeological evidence. Sites here will be restricted to locations where particular resources (such as high quality stone) can be found (e.g., Parkington and Mitchell 1993) or to lines of movement between major valley systems, such as the Matebeng Pass (P. Carter, pers. comm.).

Both these features, which have the effect of creating archaeological "hotspots" with a much lower density of sites in-between, are, I would suggest, likely to be repeated elsewhere. Indeed, it is already possible to suggest that the areas around the sites of Matebeng and Melikane, the only other two large rock-shelters along this portion of the Orange River (Carter 1978) and each centred on another of its major west-flowing tributaries, will prove to host additional site concentrations. Directed towards understanding the use made of the regional landscape by Stone Age people, the comparison of intersite variability within and between all three of these areas will be one of the long-term goals of continued field-survey in the Lesotho highlands.

Acknowledgments

I am grateful to Mrs. N. Khitsane, Chairman of the Protection and Preservation Commission of Lesotho, for permission to conduct fieldwork in the Sehonghong area, as well as to the Chiefs of Sehonghong and Khomo-ea-Mollo. The assistance of Mr. M. Phutsoe and the pilots of Senqu Air Services was also invaluable. Field survey would have been impossible without the

help of D. Turner, M. Clark, J-J. White, P. Mann, R. Charles, G. Hall, T. MacManmon, and D. Watt. To all of them, for their companionship, enthusiasm, and keen sight, I am extremely grateful. Fieldwork at Sehonghong has been undertaken with funding from the University of Cape Town, the Swan Fund, the Boise Fund, the Society of Antiquaries, the University of Oxford, the Harry Oppenheimer Institute for African Studies, and the Prehistoric Society. I am also grateful to the Swan, Boise, and Wilkin Funds, Rhodes House, New College, Oxford, and St. Anne's College, Oxford for grants to members of the 1992 team.

References

Arbousset, T.
 1852 *Narrative of an Exploratory Four to the North-east of the Cape of Good Hope.* London: J. C. Bishop.

Barrow, J.
 1801 *Travels into the Interior of Southern Africa, 1797-1798.* London: Cadell and Davies.

Bousman, B.
 1988 Prehistoric settlement in the Senqunyane Valley, Lesotho. *South African Archaeological Bulletin* 43: 33-37.

Carter, P. L.
 1978 *The Prehistory of Eastern Lesotho.* Ph.D. thesis, University of Cambridge.

Carter, P. L., and Vogel, J. C.
 1974 The dating of industrial assemblages from stratified sites in eastern Lesotho. *Man* 9: 557-70.

Carter, P. L., Mitchell, P. J., and Vinnicombe, P.
 1988 *Sehonghong: the Middle and Later Stone Age Industrial Sequence at a Lesotho Rock-shelter.* Oxford: British Archaeological Reports.

- Deacon, J.
1988 The power of a place in understanding southern San rock engravings. *World Archaeology* 20: 129-40.
- Hodder, I., and Orton, C.
1976 *Spatial Analysis in Archaeology*. Cambridge: Cambridge University Press.
- Lewis-Williams, J. D., and Dowson, T. A.
1989 *Images of Power*. Johannesburg: Southern Books.
- Mitchell, P. J.
1993 Late Pleistocene hunter-gatherers in Lesotho: report on excavations at Sehonghong rock-shelter, July to September 1992. *Nyame Akuma* 39: 43-49.
- Mitchell, P. J.
1994a Understanding the MSA/LSA transition: the pre-20 000 BP assemblages from new excavations at Sehonghong rock-shelter, Lesotho. *Southern African Field Archaeology* 3: 15-25.
- Mitchell, P. J.
1994b The archaeology of the Phuthiatsanaea-Thaba Bosiu Basin, western Lesotho, southern Africa: changes in Later Stone Age regional demography. *Antiquity* 68: 83-96.
- Mitchell, P. J., and Vogel, J. C.
in press radiocarbon dates from Sehonghong rock-shelter, Lesotho. *South African Journal of Science*.
- Parkington, J. E., and Mitchell, P. J.
1993 Archaeological Survey of the Phase IB Area of the Lesotho Highlands Water Project. Report submitted to the Lesotho Highlands Development Authority.
- Smits, L. G. A.
1973 Rock-painting sites in the upper Senqu Valley, Lesotho. *South African Archaeological Bulletin* 28: 32-38.
- Vinnicombe, P.
1976 *People of the Eland*. Pietermaritzburg: University of Natal Press.

■ MADAGASCAR

Finding Fenoarivo: Fieldwork in Central Androy

Mike Parker Pearson
Department of Archaeology and
Prehistory
University of Sheffield
Sheffield S10 2TN
U.K.

Karen Godden
Royal Anthropological Institute
50 Fitzroy Street
London W1P 5HS
U.K.

Ramilisonina
Institut de Civilization
Musée d'Art et d'Archéologie
B.P. 564
Antananarivo 101
Madagascar

Retsihisatse
Analamahery
FIR Andalatanosy
Ambovombe 604
Madagascar

Jean-Luc Schwenninger
Department of Geography
Royal Holloway College
University of London
Egham
Middlesex
U.K.

Fieldwork in 1993 resulted in the discovery of the remains of the lost capital of the Antandroy, between the modern villages of Ambaro and Laparoy south of Antanimora (Fig. 1, 2). Further work was also continued in the coastal dunes to investigate the relationship between human habitations and *Aepyornis* (elephant bird) eggshell scatters.

The capital of the royal clan of the Antandroy flourished between the seventeenth and nineteenth centuries. Its position and former significance were largely forgotten. It was found by a combination of written sources, place names, oral tradition, and field survey.

Fenoarivo

In 1729 Robert Drury's *Journal* referred to the capital of the Antandroy, "Fenno-arivo," located three days walk from the south coast and over 4 days walk from the Mandrare River to the east. It was here that the crew of the wrecked East Indiaman *Degrave* were taken before their abortive kidnap attempt, escape, and massacre in 1703. Fenoarivo was described in the *Journal* as standing in a wood, defended by a planted wall of thorny, living trees. It had two narrow entrances, on the south and north sides, and was estimated to be a mile in circumference (Drury [1729] 1890, 59). A few years later, it was sacked by the neighbouring Mahafaly and subsequently rebuilt ([1729] 1890, 89-90). Drury's document is of particular interest because opinion is divided amongst scholars as to whether it is the accurate account of a survivor or a work of semifiction composed by Daniel Defoe (see Furbank and Owens 1988: 109-13, Molet-Sauvaget 1992).

Other clues for locating Fenoarivo were derived from placename evidence and the present day distribution of the former royal clan. Within the area of the main concentration of this clan is the dried-up lake of Fenoarivo ("full of a thousand"), named after the small palace of the last king. Intensive fieldwalking of an area of 15 square kilometres in its vicinity revealed a sequence of single large sites from the mid seventeenth century until the mid nineteenth century. Since all timber buildings had rotted and the defences had left no trace, the only surface indications of these sites were scatters of pottery and dark soil. The largest site of about 21 hectares was the last in the sequence of five. The earlier ones were much smaller at 1.5, 5, 12, and 15 hectares, respectively. Their shifting locations (over 4 km. in 300 years) indicates that they were abandoned at fairly regular

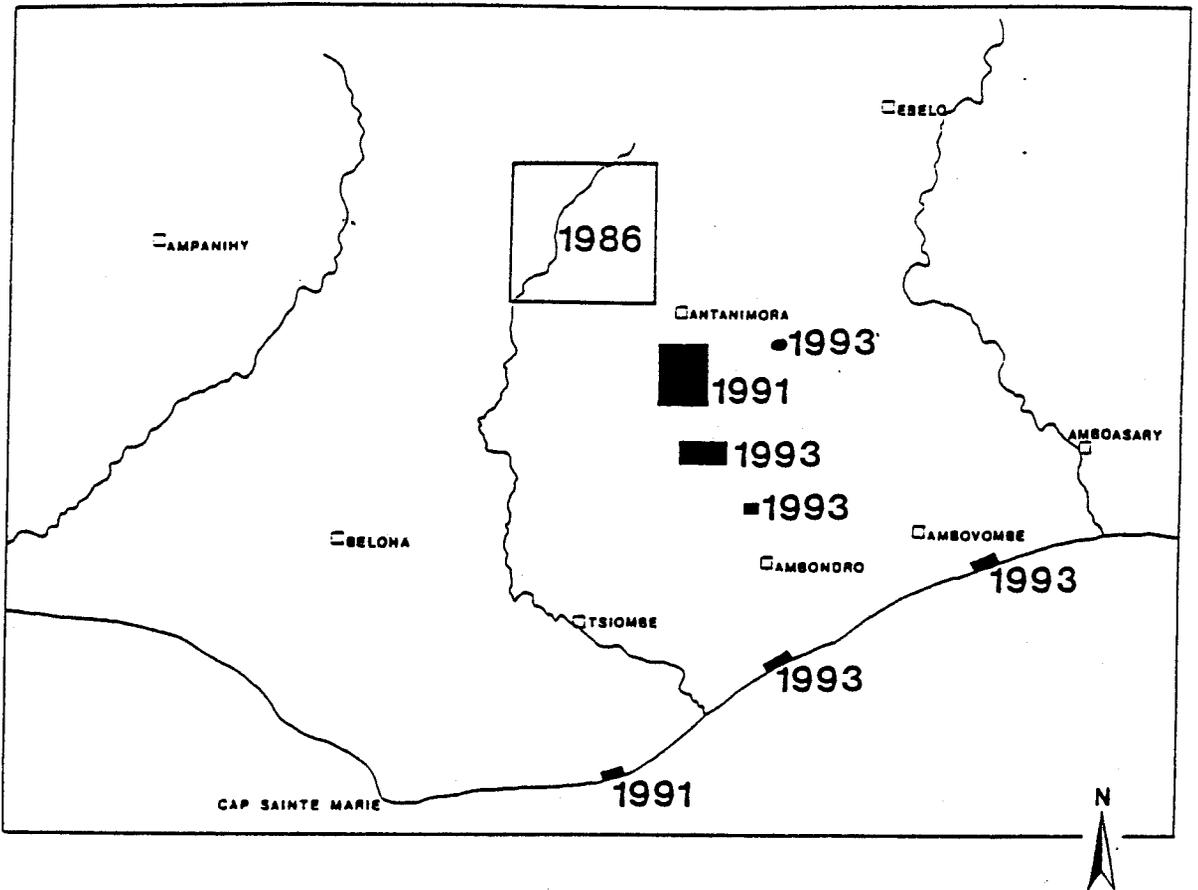


Fig. 1. Locations of areas surveyed in Androy, southern Madagascar (1986 area surveyed by Georges Heurtebize [Heurtebize 1986]).

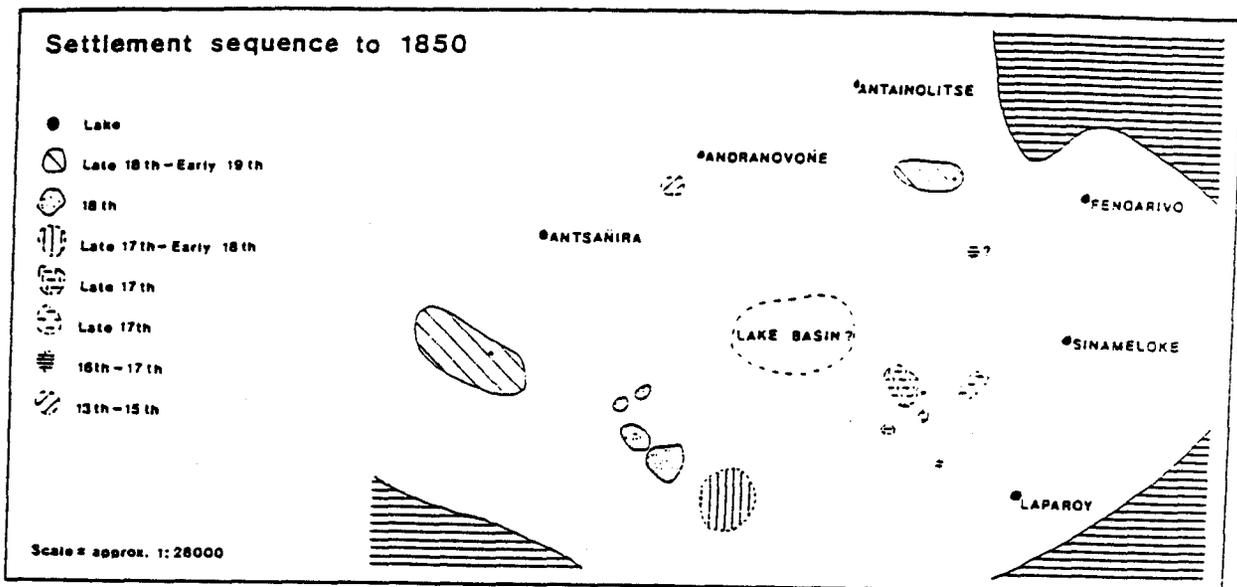


Fig. 2. The ambaro-Laparoy survey area. Sites were recognized as field scatters in this large sandy basin surrounded by forest.

intervals. The ceramics indicate a sequence of Antandroy styles beginning in the seventeenth century. Some of the earlier ceramic styles with graphite surfaces and impressed triangles can be matched with later seventeenth-century assemblages from Ehoala in south-east Madagascar (Wright, Rakotoarisoa, Heurtebize, and Vérin 1993), but no overseas ceramic imports were found in pre-nineteenth-century contexts.

Prior to the seventeenth century, there were two small sixteenth-seventeenth-century settlements and a larger thirteenth-fifteenth-century site (1.3 ha. in extent). After the mid-nineteenth century the settlement pattern dispersed into 37 small settlements, some of which were loosely grouped into three clusters, the antecedents of the modern villages. We conclude that Antandroy political centralization occurred during the later seventeenth century and that the capital fragmented in the mid-nineteenth century. This latter observation tallies with oral traditions of the collapse of the monarchy and the dispersal of the clans.

The Regional Context of Fenoarivo

The 1993 survey area shows some pronounced differences from survey results twenty to fifty kilometres further north (Heurtebize 1986: 77-83, Parker Pearson 1992, Radimilahy 1988: 122-62). In the upland and stony landscape a short distance to the north, the stone-walled enclosures are associated with pottery dating from the eleventh century until the seventeenth century. The area was apparently deserted until the mid or later nineteenth century when small, dispersed Antandroy settlements were established here. We may speculate that the people living in the hills were replaced, driven out, or conquered by the newly emergent Antandroy kingdom in the seventeenth century, and that power and population were subsequently centralized in the capital and regional subcentres until after 1850. It was with this dispersal that nonroyal clans initiated the fashion of monumental stone tombs so characteristic of the Antandroy landscape today.

Limited survey in two other areas revealed a further six archaeological sites. One of these areas was on top of the heights of Angavo, where oral traditions indicate that past kings were buried in a cave. On the summit we located a large stone-walled enclosure of uncertain date and a small sixteenth–seventeenth century settlement.

Aepyornis Remains

Research in the coastal dunes at Maroaloke and at Kotoala located some large and dense scatters of *Aepyornis* eggshells. These flightless birds were the largest ever recorded and are also known as elephant birds on account of their huge legbones. Their extinction is thought to have been due to human predation on their eggs, although climatic change, ecological competition by humans, and large-scale culling might also have been responsible (Vérin 1965). Existing radiocarbon determinations for eggshell fragments and seventeenth-century documentary sources show that the bird survived until fewer than a thousand years ago (Berger, Ducote, Robinson, and Walter 1975; Dewar 1984). Despite our discovery of four 1000-year-old settlement sites in close proximity to the eggshell scatters, we were unable to demonstrate with certainty that *Aepyornis* shell fragments were directly associated with human activity. Conversely, the absence of stone, burnt stone, or other cultural debris amongst the shell scatters suggests that the scatters were nesting sites. We are embarking on a programme of radiocarbon and optically stimulated luminescence dating of stratified dune sequences to establish the chronological contexts of human and *Aepyornis* occupation.

Acknowledgments

Many people contributed to the success of the 1993 season. Victor Razanatovo looked after the cooking, driving, and Land Rover maintenance. In particular we would like to thank Georges Heurtebize, Chris Poole, Chantal Radimilahy, Jean-Aimé Rakotoarisoa, Pierre Vérin, and Jeremy Viewing. The communities of Ambaro,

Laparoy, Ankiliabo, and Analamahery and the town council of Antanimora must be thanked for permissions and hospitality. This season's fieldwork was supported by grants from the Nuffield Foundation, the British Academy, the Society of Antiquaries, and the Department of Archaeology and Prehistory, University of Sheffield.

References

Berger, R., Ducote, K., Robinson, K., and Walter, H.
 1975 Radiocarbon date for the largest extinct bird. *Nature* 258: 709.

Dewar, R.
 1984 Extinctions in Madagascar: the loss of the sub-fossil fauna. In P. Martin and R. Klein (eds.), *Quaternary Extinctions*, pp. 574–93. Tucson: University of Arizona Press.

Drury, R.
 [1729]1890 *Madagascar: or Robert Drury's Journal during Fifteen Years Captivity on that Island*. London: Fisher Unwin.

Furbank, P. N., and Owens, W. R.
 1988 *The Canonization of Daniel Defoe*. New Haven: Yale University Press.

Heurtebize, G.
 1986 *Histoire des Afomarolahy (Extrême-Sud de Madagascar)*. Paris: CNRS.

Molet-Sauvaget, A.
 1992 *Madagascar ou le Journal de Robert Drury par Daniel Defoe*. Paris: Harmattan.

Parker Pearson, M.
 1992 Tombs and monumentality in southern Madagascar: preliminary results of the central Androy project. *Antiquity* 66: 941–8.

Radimilahy, C.
 1988 *L'Ancienne Métallurgie du Fer à Madagascar*. British Archaeological Reports, International Series 422, Oxford.

Vérin, P.
 1965 Prospection des sites anciens du littoral du Sud-Ouest de Madagascar. *Madagascar Revue de Géographie* 6: 133-7.

Wright, H. T., Rakotoarisoa, J.-A., Heurtebize, G., and Vérin, P.
 1993 The evolution of settlement systems in the Efaho River Valley, Anosy: a preliminary report on archaeological reconnaissances of 1988-1986. *Indo-Pacific Prehistory Association Bulletin* 12: 2-20.

■ MALI

Preliminary Results of Excavations at Gao, September and October 1993

Timothy Insoll
 Department of Archaeology
 University of Cambridge
 Downing Street
 Cambridge CB2 3DZ
 U.K.

Excavations were conducted at two sites in the vicinity of the city of Gao in the Republic of Mali in September and October 1993. A 6 x 6.5 m. trench was excavated in old Gao or Gao Ancien in the area known locally as the place where the Malian emperor Mansa Musa built his mosque on his return from pilgrimage in the fourteenth century A.D. The second 2 x 2 m. trench was excavated at the northwestern end of the habitation mound at Saney, located 4 km to the east of the modern city of Gao. The potential of both these sites for the author's doctoral research into the spread and acceptance of Islam in the Western Sahel between 800-1200 A.D. was revealed by a survey undertaken at Gao in January 1993, when it was recognized that excavations were urgently needed before these important sites were totally destroyed (Insoll 1993a, 1993b).

It should be noted that the findings outlined here are by necessity brief and preliminary as the analysis of the material generated both by the excavations in Gao and the survey of the site of Koyma located on the opposite bank of the Niger to Gao is not yet complete.

The Mosque of Mansa Musa

Three possible zones for excavation in the mosque area were isolated in January 1993 (Insoll 1993a: 42). The first zone described as being that of the mosque is a misidentification as the area which Raymond Mauny (1951: 843) excavated in 1950 is in reality 100 m. to the northeast of the area stated previously as being the location of the mosque. This mistake became apparent upon viewing the site after the effects of the year's rains had been felt and after discrepancies between different informants' accounts were noticed. The trench was in the end laid out in the area corresponding to the third zone of the so-called Mosque of Mansa Musa sector.

The excavations revealed the presence in the western half of the trench of the remains of a floor and what appears to be a column base constructed out of baked bricks of fairly uniform dimensions. The bricks which were used to build the column base are mould formed and range in size from 21 cm length by 21.5 cm width by 6 cm depth to 26 cm length by 25 cm width by 7 cm depth. This building of as yet unknown function was abutted by the remains of three further walls constructed respectively out of reused baked brick fragments, banco, and banco bricks. At present it would appear that these more crudely constructed walls represent a later period of squatter occupation.

The top 40 cm of the deposits in part of the western half of the site was subject to some contamination that was probably caused by the activity of robbers looking for construction materials. They had left indications of their activities in the form of a narrow trench that neatly cut through part of the baked brick floor to a depth of 60 cm below the surface level. At a further 20 cm depth a dense layer of glass, pottery, metal fragments, and beads was found. This layer

was encountered on the eastern half of the site, but the removal of four of the baked brick flooring slabs showed that this layer also continued into the western half of the site and was sealed by the baked brick floor.

This layer is of importance as it provided a sample of ceramics imported from the wider Islamic world from which a preliminary date for this site could be obtained. C14 samples have also been taken but at the time of writing these have not yet been processed. The imported ceramics and glass from this layer were examined by the Department of Oriental Antiquities, the British Museum, London; and the assemblage has been dated provisionally to the eleventh and twelfth centuries A.D., with some elements of a possible tenth century A.D. date also present. In total 147 sherds of imported glass and 36 sherds of imported pottery were recovered from the site, with 34 sherds of glass and 143 sherds of imported pottery coming from this level alone. The origins of this material show that Gao was receiving material from more than one source, as lusted glass from Egypt, cut, scratched, and trailed glass from Kairouan and glazed pottery from Ifriqiya in North Africa were all found.

A large variety of beads of stone, bone, metal, and glass were recovered from the site along with a total of 206 pieces of iron and copper, with again the majority of this material coming from the level rich in imported ceramics and glass. The metalwork found included the remains of a finely worked bronze chain and what appear to be fragments of two iron pendants, several knives of different sizes, a hoe blade, 3 copper coins, and a variety of nails and hooks.

The locally made pottery recovered from the excavations at the "Mosque of Mansa Musa" site has some similarities with the pottery collected during January 1993 at Saney and in Gao Ancien. The assemblage again contains certain elements that are, as has already been noted (Insoll 1993a: 42-43), similar to the material collected by S. and R. McIntosh (1984) at Gourma Rharous, to the northwest of Gao on the Niger Bend. These include the red slipped wares, deeply channelled wares, and black burnished

wares described by S. and R. McIntosh (1984: 33-35).

The crude percentage figures for the whole site are as follows (all sherds were recorded). Undecorated red slipped wares were the most commonly found, making up 37.4% of the 4883 identifiable sherds; roulette and twine decorated wares, 37.2%; deeply channelled wares, 11.9%; painted wares, 6.4%; geometric comb-impressed wares, 1.5%; undecorated black and brown burnished wares, 2.2%; miscellaneous wares (drainage spout fragments, large coarse wares, etc), 3.4%. There is a slight change noticeable in the types of wares present midway in the site sequence; however, the results of the C14 analysis are needed before the significance of this can be explained.

Certainly the most spectacular find made during the course of the excavations at the "Mosque of Mansa Musa" site was a pile of approximately 53 hippopotamus tusks (The final number will not be known until cleaning and conservation are complete). The pile of tusks was found at a depth of 1.35 metres below the surface and could represent either a consignment of ivory waiting to be shipped to North Africa that was forgotten for some reason, a horde, or some form of trophy.

At this stage in the proceedings it is not possible to offer too many interpretations. However, the evidence of the well-constructed baked brick building and the presence of the material imported from North Africa would appear to indicate that in Gao there were individuals who had developed tastes for material of good quality, perhaps developed through contact with North Africa or North African traders. The excavations at the "Mansa Musa" site have also provided proof that Gao was linked into the trans-Saharan trade networks, during the period provisionally dated to the eleventh and twelfth centuries A.D.

Saney

Due to a lack of time it was decided not to excavate in the Royal cemetery at Saney; instead attention was focussed upon the habitation mound. However, the results

obtained from these excavations proved to be slightly disappointing. Excavation revealed that the deposits were largely composed of a fine grey ash, making it difficult to keep the sides of the excavation unit straight, impairing visibility of the stratigraphic profile and reducing the working area. Additionally the threat of the trench collapsing was ever present, posing dangers for those working in the trench. For reasons of safety, excavations were stopped at a depth of 2.30 m. below surface level, before sterile deposits were reached.

Owing to the nature of the deposits, a midden, no structural remains were encountered. A sizeable ceramic assemblage was recovered along with a good collection of faunal material and a number of C14 samples, all of which are in the process of being analysed and processed. The pottery types encountered are similar to those found at the "Mansa Musa" site, though their overall percentages do differ (50% sample of sherds recorded). Deeply channelled wares are the most commonly found at 35% of the 654 identifiable sherds; red slipped wares, 18.2%; roulette and twine decorated wares, 33.3%; geometric comb-impressed wares, 1.1%; painted wares, 7.6%; and miscellaneous wares, 4.8%.

A surface collection of archaeological material was again made across the whole of the habitation mound. Several sherds of abraded glazed pottery were found along with a variety of beads, further mould fragments, and slag. A single sherd of pale green glazed pottery, similar to celadon ware, and probably of South East Asian origin was also found.

Koyma

A third site, Koyma, was briefly visited, and a surface collection was undertaken. Koyma is located 4 km north of Gao on the opposite bank of the River Niger. Koyma has been suggested as being a likely location for the site of the first Songhai settlement in the Gao region, and according to oral tradition was used as a port by the Songhai Askiya rulers of the fifteenth and sixteenth centuries A.D. (Cisse 1975: 166; Toure 1992: 11).

The site of Koyma is surmounted by a large red sand dune and would appear to be multiperiod in date. The remains of six skeletons were found eroding out of the lower slopes of the dune in an area directly fronting the river. These skeletons were oriented with the head to the East and the feet to the west, as opposed to the Muslim North-South orientation. No grave goods were found in association with the skeletons.

A single cowrie shell was found along with a variety of different types of pottery. Although only a preliminary investigation has been completed, it is still possible to note a definite difference between this ceramic assemblage and those of Saney and "Mansa Musa."

Conclusions

The results achieved from the excavations and the survey work in the Gao region were much better than expected. A good body of material has now been recovered and it is hoped that the detailed analysis of this material will begin to give us an insight into the development of Gao, its trading partners, and the trade routes that operated during the early second millenium A.D. It is hoped to continue excavations in Gao in late 1995.

Acknowledgments

I am very grateful to Dr. Sanogo, the director, and Dr. Dembele, the assistant director, of the Institut des Sciences Humaines, and Dr. Iam, the director of the Centre Nationale de la Recherche Scientifique et Technologique in Bamako for allowing me to conduct my research. I am also grateful to Monsieur Sekou Berthe and Nafogo Coulibaly for help at the "Mansa Musa" site, and to Dr. Tereba Togola for help at Koyma and Saney. Thanks are also due to Monsieur Toure, Chef de Division du Patrimoine Culturel, for practical assistance in Gao. Funding for this research was kindly provided by the Emslie Horniman trust of the Royal Anthropological Institute, the British Academy, and the University of Cambridge.

References

- Cisse, B.
 1975 *Intervention. Actes du Colloque. Histoire et Tradition Orale. 1ère année: L'Empire du Mali.* Paris: Copedith, pp. 155-66.
- Insoll, T.
 1993a A preliminary reconnaissance and survey at Gao. *Nyame Akuma* 39: 40-43.
 1993b Looting the antiquities of Mali: the story continues at Gao. *Antiquity* 67: 628-32.
- Mauny, R.
 1951 Notes d'archéologie au sujet de Gao. *Bulletin de l'Institut Fondamental d'Afrique Noire* (B) 13: 837-52.
- McIntosh, S. K., and R. J.
 1984 *Archaeological reconnaissance in the region of Timbuktu, Mali.* Final report to the National Geographic Society. Houston: Texas.
- Toure, M. E.
 1992 Report on the antiquities and history of the Gao region. Untitled and unpublished paper. Gao: Division du Patrimoine Culturel, Direction Jeunesse.

■ NIGERIA

Preliminary Results of Research by the Projet Maya-Wandala, Nigeria, 1993

Scott MacEachern
 Department of Archaeology
 University of Calgary
 Calgary, Alberta, T2N 1N4
 Canada

Abbakar Garba
 Centre for Trans-Saharan Studies
 University of Maiduguri
 P.M.B. 1069
 Maiduguri, Nigeria

The second field season of the Projet Maya-Wandala took place between 19 May and 31 August, 1992, in Borno State of Nigeria. The crew for this season was made up of researchers from the University of Calgary, the University of Maiduguri, and the National Commission for Museums and Monuments, Nigeria. Research in 1993 was conducted from Gwoza, the centre of Gwoza Local Government Area, and focused upon archaeological survey and excavation around the Mandara Mountains, which have their northernmost extension in this region (Fig. 1, 2). In addition, ethnohistorical enquiries were an important component of this season's research, as they have been in previous years. The objective of this work is to examine the historical relationships between populations found in this area today and in the recent past (i.e., over the last 150-200 years) and earlier populations, now remembered only as the semi-legendary 'Sao' and 'Maya' peoples. We wished to study the processes by which these earlier Iron Age plains populations had been supplanted by later groups, and especially by the Wandala, inhabitants of a small state of the same name who on linguistic and cultural grounds seem to have resided in the region for a long time.

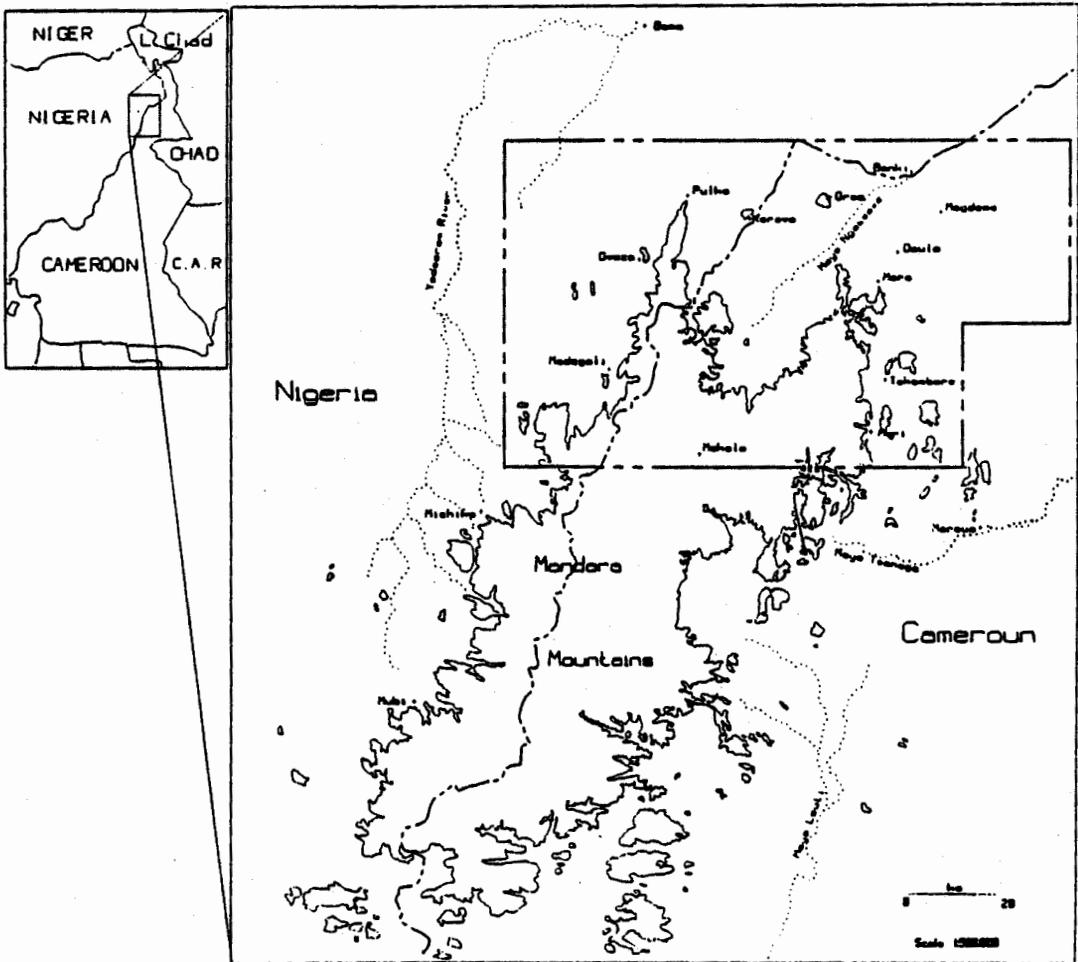


Fig. 1. The Projct Maya-Wandala survey area in Nigeria and Cameroon.

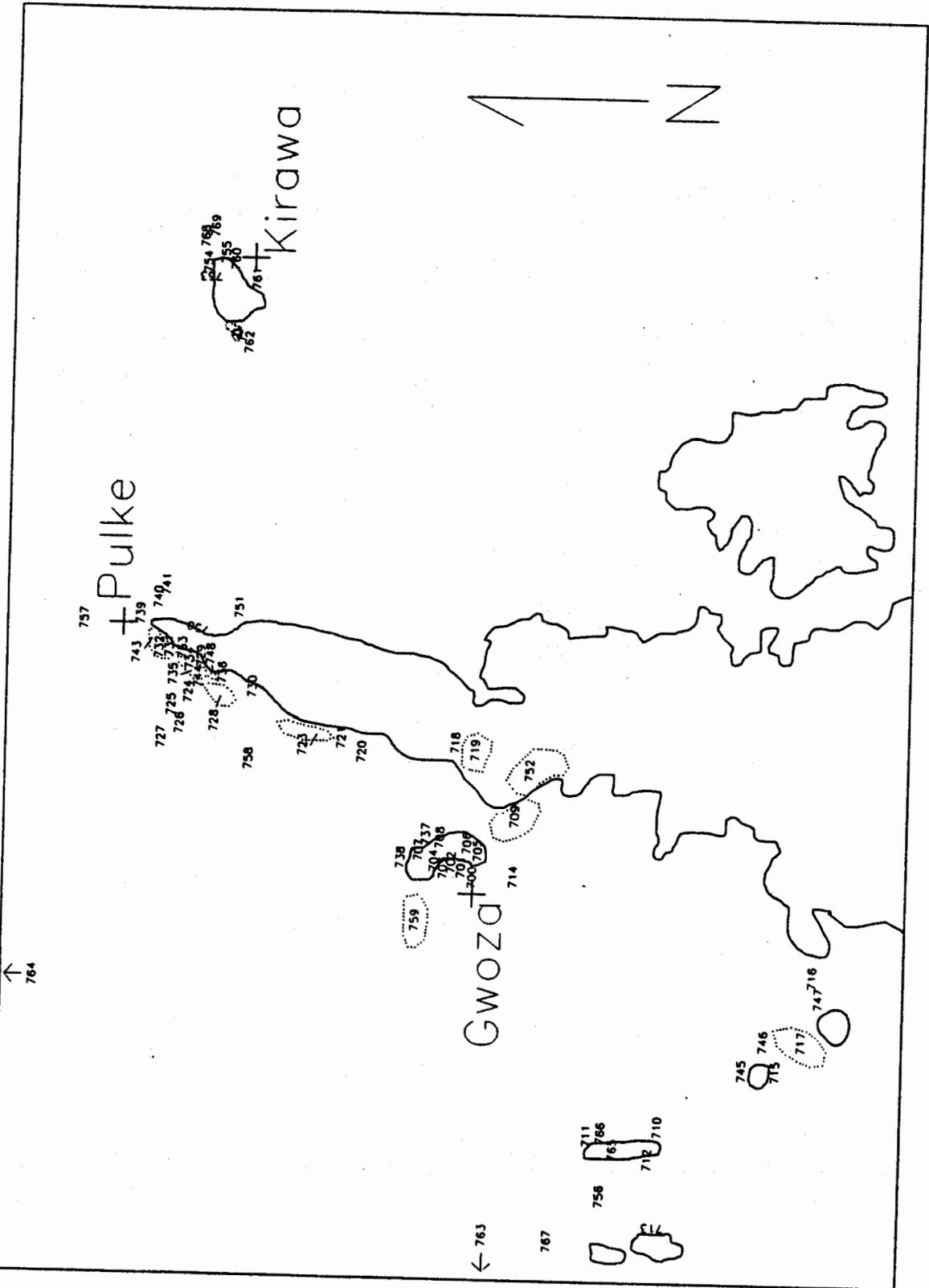


Fig. 2. Archaeological sites located during the 1993 PMW research in Nigeria (PMW site numbers indicated; dotted lines indicate area collections).

Archaeological Survey and Site Inventory

Fieldwork over the period 4 June–22 August, 1993, resulted in the discovery of 58 archaeological sites. (At least two of the sites located were first found by Dr. Graham Connah [Connah 1984] in his 1981 survey of the area. These are our sites PMW 744 [Ghwa Kiva]/Connah's B123 [Ndufa] and our site PMW 761 [Dugje Gaga]/Connah's B121 [Ugvake Thuktse]. It should also be note that Connah's [1984: Fig. 1, Table 4] site B117, which yielded a convincing stone industry, appears to have been destroyed by rock quarrying.) In addition, surface collections were made in 12 localities where significant numbers of artefacts were found but artefact densities did not warrant designation as a site (Fig. 2). The vast majority of Projet Maya-Wandala sites and the components that make them up are datable to the Iron Age, and probably to the last 1000–1200 years. However, in 1993 we found two important sites dating to the Neolithic period (tentatively before ca 1 A.D. in this area). Neolithic material is so rare in this area, and the Neolithic sites (PMW 756

[Ghwa Masogo] and PMW 767 [Gwalagwa Ngare]) located potentially so significant that we decided to conduct excavations on this latter site.

Survey design was directed toward maximizing the number and variety of sites found in a limited time, and made use of the survey experience that we have accumulated in the course of previous research. We concentrated on examining massif- and inselberg-edge areas, but also conducted survey work in the Mandara massif itself and on the plains at some kilometres distance from the mountains. We quickly focused on three different areas that showed exceptional promise during our research: (a) the borders of the Kirawa inselberg, on the Cameroon-Nigeria border, the first generally accepted Wandala capital; (b) the northwest tip of the massif around and to the southwest of the village of Pulke; and (c) the inselbergs in the plains to the west of Gwoza town, traditionally part of the Wandala province of Kamburwa (Fig. 2). All three areas are closely linked to Wandala occupation in oral and written histories.

Table 1. Radiocarbon dates from Projet Maya-Wandal surveys in 1992 and 1993.

Site	Lot	Unit	Level	Designator	Date*
PMW 602	1101	Pit 2 SW	5	Beta-61583	modern
PMW 602	1122	Pit 2 SW	8	Beta-61584	150 ± 50 bp
PMW 602	1237	Pit 2 SE	24	Beta-61586	1700 ± 90 bp
PMW 744	93-566	Pit 1 NW	10	Beta-69019 (CAMS-10919)	1050 ± 70 bp
PMW 744	93-1207	Pit 1 NW	23	Beta-69021	1630 ± 60 bp
PMW 756	93-474	Pit 4 NE	10	Beta-69018 (CAMS-10918)	2740 ± 60 bp

* Dates are ¹³C corrected, but not otherwise calibrated.

Most sites discovered, and all of the large sites, were located along the periphery of the Mandara massif or near inselbergs. This parallels the results of our 1992 research in Cameroon. Site densities are considerably lower in plains environments than along slope edges, while intense montagnard occupation in the massif itself makes detection and discrimination of sites in that environment difficult. There is an obvious concentration of sites around Kirawa, Pulke, Gwoza, and the inselbergs west of the massif. The number of sites at Pulke and along the massif just to the southwest is quite striking. Sites are more numerous and larger along the northern and eastern edge of the Kirawa inselberg than along the rest of its periphery, which parallels the situation at the nearby inselberg of Gréa, in Cameroon (MacEachern 1993a). It has been argued (MacEachern 1990: 178, 1993b) that one possible reason for the success of the Wandala state vis-à-vis local competitors like the Marghi was its advantageous position for the control of an iron trade between the northwestern edge of the Mandara Mountains and the Kanuri capital of Birni Ngazargamo. This site patterning might provide support for such an hypothesis. We found a significant number of sites near Kirawa inselberg, including some (Ngoye Kirawa, Dugje Gaga [PMW 761], Gakara Hill/Kirawa N [PMW 753], Thuliva Kwacha [PMW 768] and the Mayo Kirawa Burials [PMW 769]) that would certainly repay further work. The mound site of Dugje Gaga, for example, would require some months of excavation at least to make work on it worthwhile; it appears to be ca seven metres high.

Excavated Sites

Ghwa Kiva (PMW 744)

The Ghwa Kiva site is located 200 m from the western side of the Mandara Mountains, and 3 km southwest of the village of Pulke (Fig. 2); it was first located by Dr. Graham Connah (1984). The most obvious sign of ancient human habitation on this site is a single artificial mound, about 3 m high and 45 m in total diameter, which

stands in the sorghum fields of the modern community of Kiva. The surface of this mound is densely covered with Iron Age potsherds, and its cultural significance is obvious at first glance. The area surrounding the mound is covered by a moderately dense scatter of Iron Age artefacts, to a depth of ca 1 m.

We eventually opened three units on the site; Pit 1 was the most significant of these. Cultural material was found through the top 260 cm of the unit, indicating that almost all the mound's height was artificial deposits, possibly on top of a slight natural rise. Only preliminary analysis of the ceramics from any of the units excavated at Ghwa Kiva has been done, but there seems to be broad continuity in decoration and morphology, and broad resemblance to present-day ceramics, to ca 230 cm bd. Below that, many sherds are decorated with incision and comb-stamping, rather than the typical Iron Age rouletted material above. An iron fragment was found in a probably sealed context at 240 cm below datum. We may here have an industry transitional between the Neolithic and Iron Age, with ceramics similar to the former but with some use of iron.

The radiocarbon dates available (Table 1) and the lack of evidence for interruptions in the occupation sequence indicate that Ghwa Kiva has been occupied with no obvious hiatuses for much of the last 1700 years. The radiocarbon date of 1630 ± 60 bp (Beta-69021) refers to one of the earliest Iron Age (as usually defined) levels in the site; similar dates have been derived from early Iron Age levels at Gréa-Manaouatchi (PMW 602) and Mehe Djiddere (MAP 523) in Cameroon, making it possible that this was the period of establishment of the local Iron Age industries that seem to be ancestral to those of present peoples in the area.

Ghwa Masogo (PMW 756)

Ghwa Masogo is the remains of a Neolithic occupation—the first large, well-defined surface Neolithic site to have been found near the northern massif. It is located in the plains to the west of the town of

Gwoza, at the base of a small hillock primarily made of quartz. Neolithic populations in the region seem, in many cases, to have lived out on the plains away from the immediate environs of the mountains, as at Blabli (MAP 506) and Gwalagwa Ngare (PMW 767). The site itself consists of a low-/medium-density scatter of lithic artefacts and potsherds over an area of ca 300 × 150 m, just to the southeast of the Ghwa Masogo hillock. It is probable that some site deflation has taken place; we would roughly estimate that between 30 cm and 50 cm of soil has been removed from the top of the stratigraphic profile. At least twenty features (generally between 3 m and 5 m in diameter) consist of irregular surface concentrations of rock (sometimes with evidence of heating), daub, grindstones and grindstone fragments, and/or lithic artefacts. Surface collection recovered significant amounts of Neolithic pottery, along with ground and flaked stone axes/bifaces, axe fragments, grindstones and grindstone fragments, and other lithic artefacts. A large number of quartz flakes and fragments were also recovered; it is very difficult to tell whether these pieces were intentionally produced for use as knives, scrapers and so on, or whether they are simply fragments from the quartz deposits that make up Ghwa Masogo. A probable MSA biface (evidence of an early occupation of this region by humans [Soper 1965]) was recovered from the first surface collection on this site, along the southern extremity of the site, close to the small stream that bounds PMW 756 to the south.

Excavation in Pits 1 and 3 uncovered a circular structure of stone, daub, and grindstone fragments from about 5 cm below ground surface. This feature was cone-shaped in profile, about 150 cm in diameter at ground surface and narrowing to ca 20 cm at 32 cm below datum, feature bottom. It consisted of rocks with an average size of about 10 cm, probably laid into a daub matrix and then fired. Approximately thirty grindstone fragments were recovered from the feature, as were small numbers of potsherds and some small bone fragments. No direct present-day analogues for this feature exist, although it might be the base

of a granary or similar structure. Our other units at this site located a probable midden and pit feature (Pit 4) or were completely sterile (Pit 2). As stated above, Ghwa Masogo is a complicated, as well as potentially an important, Neolithic site. It is noteworthy that the three units opened (Pits 1/3, 2, and 4) each revealed quite different stratigraphies and cultural remains. This site would benefit from large-scale excavation.

Ngoye Kirawa (PMW 755)

Ngoye Kirawa is a large (ca 750 m × 300 m) complex of terraces, walls, and house structures just to the northwest of Kirawa town. In layout and complexity it seems to have been a community of substantial size, while its position at the base of the inselberg somewhat resembles that of Manaouatchi-Gréa (PMW 602) in Cameroon (MacEachern 1993a). We decided to conduct a test excavation on the terrace system at the former site in order to determine site depth and (hopefully) to recover organic material for radiocarbon dating. Terrace systems are ubiquitous in the northern Mandara area, but we have no direct data on the possible ages of such systems—this must be a priority for future research. The two 2 m × 1 m units excavated were disturbed by hoe farming, and consisted of very soft, loamy soil with some Iron Age pottery occurring to ca 100 cm below the surface. A sample of charcoal from Pit 2, Level 8 has been submitted to IsoTrace of Canada for AMS radiocarbon dating.

Conclusions

The concentration of sites around massif- and inselberg-edges detected in research in Cameroon appears to also hold for Nigeria. This probably is accounted for by considerations of defense and of access to other resources—stone, iron, possibly good soils and water—during the Iron Age. It will be necessary to determine if, and how, the relative weight of these considerations changed during the last two millennia. Neolithic populations appear to have been rather less tied to such environments, possibly because of the lack of encroachment by state societies during that period. The distribution of sites, and especially the

concentration around Pulke, may also lend support to the hypothesis that trade with Bornuan communities to the north was one of the engines that drove the differentiation and development of the Wandala state.

We have located a good deal more evidence of Neolithic occupation in the area west of the Mandara Mountains than to the east, in Cameroon. We discovered two Neolithic sites during the 1993 research, as well as traces of Neolithic (and probably earlier) occupation from a number of other localities, while only one (quite small) site (Blabli [PMW 506]) has been located over an extended period of research in Cameroon. This is probably due to the vagaries of sampling, since there is no evidence that the area west of the massif was favoured in any way. One priority for further research will be examination of the nature of the Neolithic-Iron Age transition in this area. Results from a number of sites, including Ghwa Kiva (PMW 744), indicate that a transition period did exist, and that it involved iron use but general continuity in ceramic traditions from the Neolithic. The transition to a "developed" Iron Age in the region appears to occur around or just before A.D. 300. This is also a period that Brooks (1993: 7-9) identifies as one of drastic environmental change in West Africa in general, which may have some relevance to these events.

Projet Maya-Wandala research during the 1993 field season was outstandingly successful in terms of both survey and excavation. We look forward to continued work in these areas in years to come.

Acknowledgments

Research in Nigeria in 1993 would not have been possible without the work of a large number of people. We would particularly like to thank the people who were involved in the actual fieldwork, and who worked extremely hard and sometimes in rather difficult conditions of survey and excavation: Musa Hambolu, Joseph Ameje, Claire Bourges, Sylvia Abonyi, Judith Wheeler, and François Vigneault. Without their help, the project would not have been possible. The staff of the National

Commission for Museums and Monuments, in both Lagos and Maiduguri, were uniformly helpful in providing the project crew with advice and assistance; We particularly want to thank Dr. L. I. Izuakor, Director of Research and Training for the NCMM, for his kindness to MacEachern while in Lagos.

We would also like to thank the staff of Gwoza Local Government Area, and particularly the Chairman and Vice-Chairman, for their help and for the welcome to Gwoza that they provided to us. Mr. Buba Karou, of Gwoza, ably provided translation services and many other sorts of assistance, and made our stay in Gwoza much easier. We would particularly like to thank the people of Kiva, Loku-Disa, and Kirawa districts for the help that they provided to us in our survey and excavation. The research conducted in Nigeria in 1993 was paid for by a Research Grant (number 410-92-1860) from the Social Sciences and Humanities Research Council of Canada.

References

Brooks, G.
 1993 *Landlords and Strangers: Ecology, Society and Trade in Western Africa, 1000-1630*. Boulder, CO: Westview Press.

Connah, G.
 1984 An archaeological exploration in southern Bornu. *The African Archaeological Review* 2: 153-71.

MacEachern, S.
 1990 *Du Kunde: Processes of Montagnard Ethnogenesis in the Northern Mandara Mountains of Cameroon*. Ph.D. thesis, University of Calgary, Calgary.

1993a Selling the iron for their shackles: Wandala-montagnard interactions in northern Cameroon. *Journal of African History* 33(2): 241-70.

1993b The Projet Maya-Wandala: preliminary results of the 1992 field season. *Nyame Akuma* 39: 7-13.

Soper, R.

1965 The Stone Age in Northern Nigeria.
Journal of the Historical Society of Nigeria
3 (2): 175-94.

■ SOUTH AFRICA

Recent Archaeological XRF Research in Southern Africa

L. Jacobson
McGregor Museum
P.O. Box 316
8300 Kimberley, South Africa

W. A. van der Westhuizen & H. de Bruijn
Geology Department
University of the Orange Free State
9300 Bloemfontein, South Africa

Over the past three years a series of XRF analyses have been run on a variety of materials including pottery, clays, hornfels (both artefacts and geological samples), and archaeological cave and open site sediments from southern African sites. The aim of this research is to investigate archaeological problems to which chemical analysis can be applied such that "visually invisible" aspects of human behaviour can be reconstructed. For pottery and artefacts this means provenance studies as well as, in the case of pottery, technological investigations.

In addition, microprobe analyses across sherd bodies are being made to obtain concentration profiles of phosphorus and other elements in order to investigate any post-depositional changes to the chemistry of sherds that could complicate the above provenance studies.

Methodology and Assumptions

Much of this is an extension of similar work carried out by PIXE analysis but with three advantages. Firstly, most of the early PIXE work was expressed in raw counts, not

absolute values in weight percent or ppm, thus preventing comparisons between experiments carried out at different times under different experimental conditions. This also meant that a database of results could not effectively be built up and added to over the years. These individual experiments, however, provided valuable insights into both intra- and interassemblage variability (Gihwala et al. 1984, 1985a, 1985b; Jacobson et al. 1991, 1994; Peisach et al. 1990, 1991; Pineda et al. 1990). XRF results, on the other hand, are expressed in weight per cent of oxides for the major elements or ppm for trace elements and can therefore be used to build up a database that can eventually be accessed by other workers. In addition, duplicate powder samples of most analysed specimens are being stored at the McGregor Museum so that additional or replicate analyses or interlaboratory comparisons can be made in the future. In preparing and analyzing samples, all work is carried out after the method of Norrish and Hutton (1969). International geological standards are used for calibration.

Secondly, by using the whole sample (± 30 g), XRF is not susceptible to a potential sampling problem to which PIXE can be liable. The scanning of a small surface area can make PIXE sensitive to inhomogeneous elemental concentrations and produce skewed results.

Thirdly, additional elements determined by XRF can give insight into manufacturing techniques, composition or postdepositional processes (Bollong et al. 1993).

One potential disadvantage of using XRF compared to PIXE or NAA is that the more esoteric types of trace elements are currently not able to be determined by us. There can thus be a loss of sensitivity when characterising pots or clay sources in that the limits of variability for major or more common trace elements can be more restricted so that a greater overlap between sources occurs. This problem, however, still needs detailed analytical testing.

Another disadvantage of XRF is that the sample for analysis is destroyed by crushing whereas PIXE can analyse a sample intact with little or no surface damage. Nevertheless, using these techniques in a com-

plementary and common-sense way can yield valuable insights into past processes.

The investigation of archaeological problems rests upon the assumption that one can chemically "fingerprint" or separate different clay sources and that this unique pattern will be replicated in pots made from those sources. This chemical fingerprint can be altered from clay to pot or from pot to archaeological sherd by a number of factors. These include the addition of temper to the raw clay either to make the clay more suitable for firing or else for a specific functional purpose of the finished vessel.

The fabric of the vessel can also be contaminated by use or by post depositional factors. It is also possible that only parts of an individual vessel (either before or after it gets broken and becomes part of the archaeological record as a number of sherds) are affected by the aforementioned factors which further complicates matters. Microprobe analyses currently underway could offer further insight into this problem.

Models and Problems

The ideal problem for investigation is one that deals with samples from two or more sites each from quite different geological substrates. Intrusive vessels will stand out quite clearly and the degree of interaction between such sites can be quantified. Samples coming from similar substrates could be more difficult to separate from each other. If one can locate clay beds, this is a bonus as it can indicate the range of variability of the clays available to local potters. Otherwise, one has to rely on compositional groupings defined by one or other multivariate statistical technique. More than one cluster from one site does not necessarily mean imports but rather the variability of local clays.

Archaeologists are earnestly requested to obtain samples of local clays (from 100 g minimum to 1 kg if possible) preferably in consultation with local people if they still have, or recently had, a pottery making tradition. Oral traditions often retain knowledge of the location of suitable clay beds. This information should be documented for further research.

Current Results

Sample Homogeneity

As an example of the chemical variability in one vessel, we provide data taken from the multiple analysis of a thick, pointed base Khoi vessel from Namibia that shows a different set of results for the rim and the base (Table 1). Whether this is the result of different manufacturing techniques in that the base may have included small amounts of temper not added to other parts of the vessel or differential contamination through useage is not known at present. The increase in Ca and Na could suggest the latter and although further work such as thin sectioning could provide an answer, it does serve as a warning to keep a record of the type of sherd analysed (e.g., rim, body, lug, base, thick, thin).

Table 1. Data for the analysis of a vessel from the Erongo, Namibia. Two rim samples and a single base sample were analysed. Major elements have been normalised to 100%.

	Rim7	Rim8	Base2
SiO ₂	69.22	69.89	65.50
TiO ₂	0.34	0.34	0.22
Al ₂ O ₃	18.25	18.35	21.54
Fe ₂ O ₃	5.30	4.73	3.00
MnO	0.05	0.04	0.05
MgO	0.96	0.90	0.70
CaO	0.73	0.63	1.39
Na ₂ O	0.71	0.72	2.46
K ₂ O	4.30	4.26	4.98
P ₂ O ₅	0.15	0.14	0.17
Total	100.00	100.00	100.00
H ₂ O	0.26	0.13	0.31
LOI	3.75	2.03	2.96
Ba	181.00	187.00	755.00
Rb	330.00	340.00	171.00
Sr	69.00	67.00	211.00
Y	38.00	40.00	16.00
Zr	154.00	153.00	60.00
Nb	22.00	22.00	17.00
Ni	23.00	19.00	11.00
Zn	44.00	45.00	51.00
V	51.00	48.00	89.00
Cr	62.00	51.00	39.00
Co	4.00	2.00	4.00

Table 2 shows data from a sherd split longitudinally and the individual sections analysed. There is the hint that some elements could be enriched, i.e., K on the outer surface, but obviously much more work remains to be done. Nevertheless, it does indicate that where possible additional parameters relating to mode of burial should be recorded such as whether completely buried, proximity to hearths, partially exposed, lying with the outer or inner surface exposed, etc. In addition, sediment samples for chemical analysis should also be taken from various places in the deposit as well as outside. These should be carefully curated with excavated materials for future analysis.

types of horizons as well as from areas outside the site for future analysis.

Provenance studies

Our current pottery research has focussed on Namibia (western Damaraland and the Kavango/Caprivi), northern Botswana, the northern and northeastern Cape Province, and the northern Transvaal. These include specimens from ceramic LSA, Herder, and Iron Age contexts. Where possible, clays are also analysed.

Data is still being finalised but as an example we briefly describe initial results from a project (jointly undertaken with T. N. Huffman of Wits) investigating the social and economic interactions of K2 and Mapungubwe sites with each other and the surrounding areas within and beyond their influence (Jacobson et al. 1994). This will also include Great Zimbabwe. Some of the problems that will receive attention will be whether imported vessels at major sites increase in number, perhaps through the payment of tribute; whether any special classes of vessels which are only occasionally found at lower court or ward levels originate from a higher level ward and whether any craft specialisation took place, i.e., were all or some vessels only made from a fewer or a greater number of clay sources?

As a first step, a suite of potsherds was analysed in order to determine, firstly, whether pottery from these sites could be differentiated chemically and, secondly, whether XRF was sensitive enough for this purpose. Twenty-five samples of pottery were obtained from four sites. Twelve samples (coded "k") came from K2 and a single sample from Mapungubwe (coded "k1"). Of the former, two examples, coded separately as "t" were made in the distinctive style of Tautswe, a major Iron Age site to the west in Botswana. Nine sherds came from Great Zimbabwe ("p") and three from Chibvumani ("j"), also a Great Zimbabwe period site.

Inspection of the data for P205 (Fig. 1) showed that systematically higher values were obtained for the samples from Great Zimbabwe (coded p). As these were both

Table 2. Data for sherd (A7) from the site Omdraai in the Northern Cape that had been split longitudinally such that the inner (IN) and outer (OU) surfaces, the center (M), and a whole (T) sample were separately analysed. Major elements have been normalised to 100%.

	A7-T	A7-IN	A7-OU	A7-M
SiO ₂	65.27	65.01	64.37	65.05
TiO ₂	1.16	1.15	1.19	1.18
Al ₂ O ₃	20.80	20.76	20.76	20.75
Fe ₂ O ₃	8.91	9.07	9.30	9.12
MnO	0.08	0.11	0.12	0.11
MgO	1.06	1.10	1.27	1.11
CaO	0.93	0.95	0.93	0.88
Na ₂ O	0.25	0.28	0.31	0.27
K ₂ O	1.37	1.32	1.53	1.35
P ₂ O ₅	0.17	0.25	0.23	0.18
Total	100.00	100.00	100.00	100.00
H ₂ O-	0.31	0.06	0.11	0.15
LOI	5.77	4.57	5.04	7.00

Archaeological Sediments

Cave and open station sediments from selected sites are also being analysed. This will be used initially as baseline data to assess the degree of contamination of potsherds, bone or ostrich eggshell by their surrounding sediments (i.e., phosphate enrichment). Archaeologists should keep samples of the sediments from different

higher than the Chibvumani sherds (coded j and which come from the same geological background) and any naturally occurring P2O5 that we are aware of, and following Freestone et al. (1985), it was decided to omit this element from the statistical analysis as it most probably reflects the burial conditions of the sherds and not the source material from which they were derived.

A correspondence analysis (Greenacre 1986) of the data was then undertaken (Fig. 2). The K2 samples formed a very tight cluster with the exception of 5 samples that form their own groups. The first, consisting of t7, t8, and k3 form a group that is essentially maintained when the third axis is considered. Of interest here is the fact that t7 and t8 are sherds from K2 that are stylistically similar to Tautswe in Botswana. This is, of course, not to say that they are from that area. Of the second group, k1 and ko, k1 is the single sample from Mapungubwe. As such, not too much should be read into this as yet until a larger sample from this site is available. The j and p samples, both apparently from the same

geological background, separate well from K2 but show a great deal of variability. Whether a greater variety of local clay sources were used or they reflect trade items cannot be answered as yet. There is also the possibility that the burial conditions which produced the high P2O5 levels in the Great Zimbabwe sherds could have introduced other elemental contamination. This should be further investigated through microprobe analysis and the analysis of the archaeological sediments themselves.

Conclusion

Archaeologists are earnestly requested to follow some of the guidelines above with respect to recording information when excavating pottery and the collection of archaeological sediments and clays whilst in the field.

To conclude, provenance studies can be most accurately summed up as the invisible dimension to stylistic studies. Carefully used, it has vast potential for adding to our knowledge of the past.

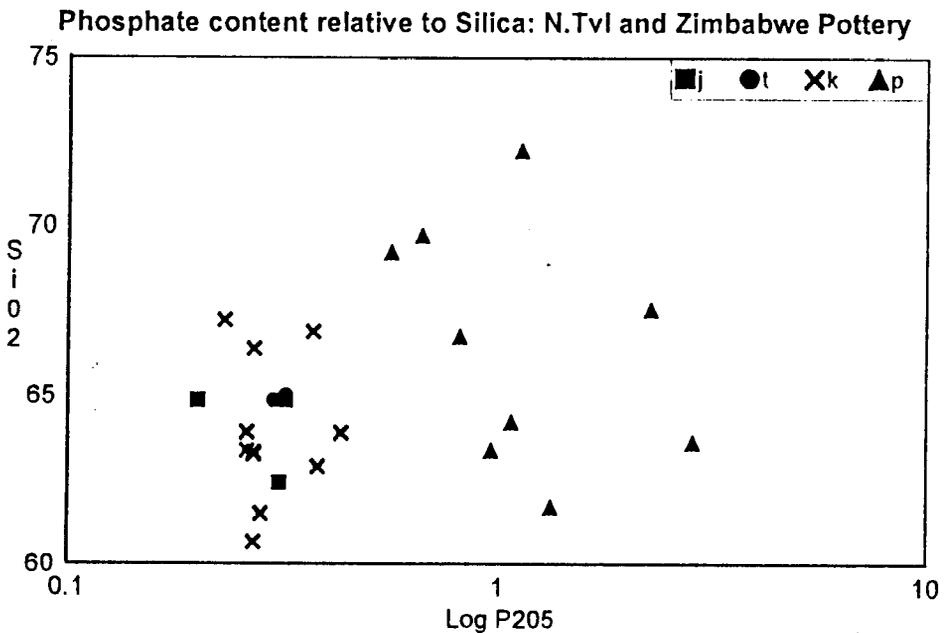


Fig. 1. Phosphate content of vessels. Codes: k = K2, p = Great Zimbabwe, t = style of Tautswe, j = Chibvumani.

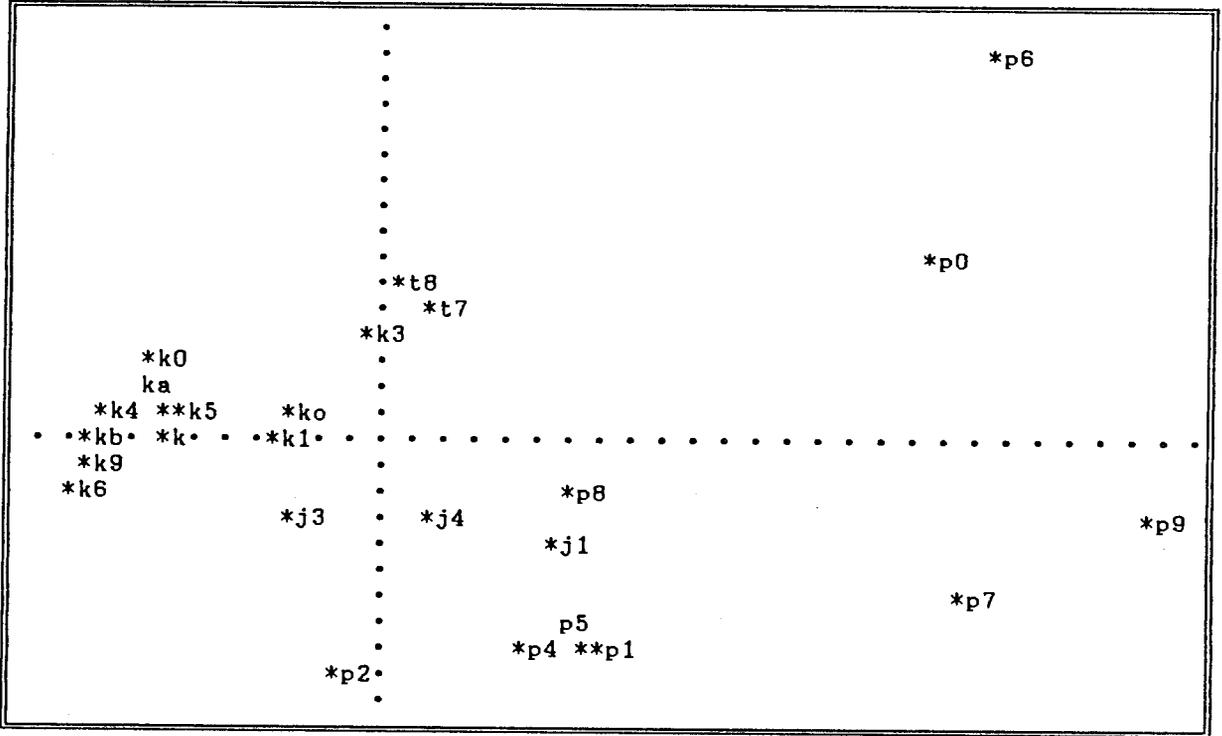


Fig. 2. Correspondence analysis map of Northern Transvaal and Zimbabwe pottery. The horizontal axis is dimension 1 with inertia equal to 58.9%; the vertical axis is dimension 2 with inertia equal to 23.5%. A total inertia of 82.4% is represented in the above map.

References

These include a listing of all publications relating to PIXE and XRF work in Southern Africa. (Editor: This creates problems in matching text references with items in this list. Readers needing clarification should contact the senior author.)

Bollong, C. A., Vogel, J. C., Jacobson, L., van der Westhuizen, W. A., and Sampson, C. G.
 1993 Direct dating and identity of fibre temper in pre-contact Bushman (Basarwa) pottery. *Journal of Archaeological Science* 20: 41-55.

Boulle, G. J., and Peisach, M.

1977 Characterisation of South West African potsherds by neutron activation analysis of trace elements. *Journal of Radioanalytical Chemistry* 39: 33-44.
 1979 Trace element analysis of archaeological materials and the use of pattern recognition methods to establish identity. *Journal of Radioanalytical Chemistry* 50: 205-15.

Boulle, G. J., Peisach, M., and Jacobson, L.

1979 Archaeological significance of trace element analysis of South West African

- potsherds. *South African Journal of Science* 75: 215-17.
- Freestone, I. C., Meeks, N. D., and Middleton, A. P.
- 1985 Retention of phosphate in buried ceramics: An electron microbeam approach. *Archaeometry* 27: 161-77.
- Gihwala, D., Jacobson, L., Peisach, M., and Pineda, C. A.
- 1984 Determining the origin of 18th and 19th century pottery and glasses using PIXE and PIPPS. *Nuclear Instruments and Methods in Physics Research B* 3: 408-11.
- 1986 Proton-induced techniques for the determination of some trace impurities in gold objects. *South African Journal of Science* 82: 258-60.
- Gihwala, D., Jacobson, L., Peisach, M., Pineda, C. A., and Vos, H. N.
- 1985a Analysis of Chinese porcelains and ceramics. *South African Archaeological Bulletin* 40: 96-99.
- Gihwala, D., Jacobson, L., Peisach, M., Pineda, C. A., Woods, A., and Otto, A.
- 1985b Preliminary report on the trace element analysis of clays and pottery from the Kavango and Caprivi areas of northern Namibia. *South African Journal of Science* 81: 38-41.
- Greenacre, M. J.
- 1986 SIMCA: A program to perform simple correspondence analysis. *The American Statistician* 40: 230-1.
- Jacobson, L.
- 1985 X-ray analytical techniques and archaeological materials. *South African Archaeological Bulletin* 40: 110.
- Jacobson, L.
- 1989 Forward into the past. *Nuclear Active* 41: 21-4.
- Jacobson, L., and Peisach, M.
- 1982 Prehistory's clay footsteps. *Nuclear Active* 27: 8-12.
- Jacobson, L., Gihwala, D., Peisach, M., Pineda, C. A., Woods, A., and Otto, A.
- 1985 On the trail of the pottery pedlars. *Nuclear Active* 33: 25-8.
- Jacobson, L., Gihwala, D., Pineda, C. A., and Peisach, M.
- 1983 Gold and glass. *Nuclear Active* 29: 24-7.
- Jacobson, L., Huffman, T., and van der Westhuizen, W. A.
- 1994 A preliminary XRF analysis of pottery from the Northern Transvaal, South Africa. Poster presented to the 29th International Symposium on Archaeometry, Ankara, Turkey, 9-14 May 1994.
- Jacobson, L., Loubser, J. H. N., Peisach, M., Pineda, C. A., and van der Westhuizen, W.
- 1991 PIXE analysis of pre-European pottery from the northern Transvaal and its relevance to the distribution of ceramic styles, social interaction and change. *South African Archaeological Bulletin* 46: 19-24.
- Jacobson, L., Pineda, C. A., Peisach, M., Morris, D., and Pillay, A. E.
- 1994a PIXE analysis of herder and hunter-gatherer pottery from the southern Kalahari, South Africa. Poster presented to the 29th International Symposium on Archaeometry, Ankara, Turkey, 9-14 May 1994.
- 1994b A preliminary report on the PIXE analysis of ostrich eggshell and its potential for provenance studies in Southern Africa. Poster presented to the 29th International Symposium on Archaeometry, Ankara, Turkey, 9-14 May 1994.
- Jacobson, L., Pineda, C. A., Morris, D., and Peisach, M.
- 1994 PIXE analysis of pottery from the northern Cape Province of South Africa. *Nuclear Instruments and Methods in Physics Research B* 85: 901-3.

- Miller, D.
 1991 Materials analysis of archaeological ceramics in southern Africa. *South African Archaeological Bulletin* 46: 12-18.
- Norrish, K., and Hutton, J. T.
 1969 An accurate x-ray spectrographic method for the analysis of a wide range of geological samples. *Geochimica Cosmochimica Acta* 33: 431-53.
- Peisach, M., Jacobson, L., Boulle, G. J., Gihwala, D., and Underhill, L. G.
 1982a PIXE analysis of archaeological material and the use of multivariate analysis for characterisation. *Nuclear Instruments and Methods* 193: 337-41.
 1982b Multivariate analysis of trace elements determined in archaeological materials and its use for characterisation. *Journal of Radioanalytical Chemistry* 69: 349-64.
- Peisach, M., Pineda, C. A., and Jacobson, L.
 1990 Thick target PIXE analysis of coastal and inland Namibian pottery. *Nuclear Instruments and Methods in Physics Research B* 49: 309-12.
 1991 Nuclear analytical study of rock paintings. *Journal of Radioanalytical and Nuclear Chemistry, Articles* 151: 221-7.
- Peisach, M., Pineda, C.A., Jacobson, L., and Loubser, J. H. N.
 1991 Analytical study of pottery from Soutpansberg. *Journal of Radioanalytical and Nuclear Chemistry, Articles* 151: 229-37.
- Pineda, C. A., and Jacobson, L.
 1992 PIXE analysis of pottery from the western Cape coastal belt. *National Accelerator Centre Annual Report NAC/AR/92-01*: 36.
- Pineda, C. A., Jacobson, L., Morris, D., and Peisach, M.
 1993 PIXE analysis of ancient pottery from the northern Cape, South Africa. *National Accelerator Centre Annual Report NAC/AR/93-01*: 38-9.
- Pineda, C. A., Jacobson, L., Sampson, C. G., and Peisach, M.
 1990 PIXE analysis of Seacow River Valley pottery. *National Accelerator Centre Annual Report* 118-9.
- Pineda, C. A., Peisach, M., and Jacobson, L.
 1988 Ion beam analysis for the determination of cation ratios as a means of dating southern African rock varnishes. *Nuclear Instruments and Methods in Physics Research B* 35: 463-6.
 1989 The time-clock of aged patinas. *Nuclear Activa* 41: 17-20.
- Pineda, C. A., Peisach, M., Jacobson, L., and Sampson, C. G.
 1990 Cation-ratio differences in rock patinas on hornfels and chalcedony using thick target PIXE. *Nuclear Instruments and Methods in Physics Research B* 49: 332-5.

■ SUDAN

Archaeological Mission of the University of Geneva at Kerma (Sudan): Report on the 1992-1993 Campaign

Charles Bonnet
 Geneva University Excavations in the Sudan
 17 Chemin Bornalet
 1242 Satigny
 Switzerland

Once again, the excavations led by the Swiss Mission at Kerma from December 12, 1992 to February 4, 1993, took place under favourable conditions. More than 120 workmen whose work was directed by the raïs from Tabo, Gad Abdallah, and Saleh Melieh, attended the working sites. The restoration of certain monuments, and more particularly that of the warehouses of the large roundhouse of the palace, occupied a

group of twenty builders and their assistants. Many other specialists built a 300 m long surrounding wall so as to protect the eastern side of the site where the wire fence had disappeared.

A considerable effort was made towards excavating the southwestern part of the ancient city. Outside the protected site, the spread of population and traffic threatened the archaeological remains. Thus, after having come upon the remains of the palace during the previous campaign, the foundations of many peripheral buildings were brought to light. A true secondary built-up area appeared; therefore works on this area will have to go on for some time. Nearer the royal residence, a large dwelling completes the image of the city with its western quarter. This urban area is limited to the south by fortification ditches that could be traced on a length of over 140 m. The study of the fortified western entrance resumed together with a stratigraphic sounding near the *deffufa*. A specific investigation was undertaken in the eastern necropolis where several tombs were superficially cleaned so as to study funerary rites.

The Ancient City

The city grew progressively; thus one sometimes comes upon the layout of old ditches under more recent houses. The western fortified entrance was razed to the ground when the city expanded. Repeated cleaning made the understanding of its organisation possible. The access route ran perpendicular to the general east-west axis, between two enormous round bastions. Those massive mounds, several times refaced, were crowned with rectangular or originally circular towers. On the inside, facing the entrance, an impressive bastion blocked the entrance once more.

Near the gate, a large dwelling (M122) was unearthed. Before it were two houses (M126-M127), the orientation of which corresponds to quite a different axis from the neighbouring area. This spread towards the west is associated with the Middle Kerma Period (2050-1750 B.C.). House 122 is identified with several plots of land within a

29 m square. At least three dwellings were erected in the housing perimeter. Round silos enabled us to situate the enclosed land to the north destined for food storage. As for the long courtyard, the southern entrance of which was protected by a low winding wall, one may presume that it had a religious function. Traces of big pillars could belong to the first outlay of a chapel.

During the Classical Kerma Period (1750-1500 B.C.), the whole dwelling area was reshaped, disregarding the older developments; the chapel was enlarged to a square shape. The neighbouring courtyards with their silos were still in use but stronger walls marked the bounds of the dwelling unit; two blocks of buildings were added.

Other houses in the same area or further to the west are known to us. The collapse of the pilaster-supported side walls enabled us to check the original height of the buildings, which were at least 3 m high.

Further to the south, the dried-up ditches that surrounded the city gave us a first piece of intelligence regarding the defence works. As a consequence of the dumping of debris outside the city walls, these ditches filled up and made a new space. After a while, the slope of the ditch was reinforced with a layer of hardened mud. The close study of these layers brought out some of the layouts. On a portion of the newly gained space, three minor buildings undoubtedly point to the location of the casemates.

The Secondary Suburban Settlement

The boundary of the ancient city of the southwest seems to skirt an area near the centre of which there is a mound, understood to be a tumulus. As a matter of fact, a few soundings proved that a religious neighbourhood had developed on this site. So far, about ten cult buildings have been traced, lined up along both sides of the street. Their outlay varies from a simple square room to complex units made of a sanctuary and two side annexes, preceded by a peristyle courtyard. Former construction phases often point to the permanence of a place of cult that was generally enlarged.

The walls of the Holy of Holies were carefully built and may be quite thick (up to 0.70 m). On the other hand, the courtyard walls had shallow foundations and must have been lower. They had wooden supports, two carbonized posts acknowledged as doum palm tree having been well preserved underground. These wooden column bases showed an unusual feature; they were circular structures made of brick and stone clustered together with mud. While these buildings seem to have been destroyed by fire, the traces of many fireplaces must also be linked with functions or activities that took place within or around the monuments.

Little archaeological material has been recognized in the layers of destruction (the only ones that have been excavated up to now); three fragmentary jars were still in situ, and some dozens of sherds were also recovered. These elements mostly belong to the Middle Kerma Period, though some are of the Classical Kerma Period.

A building complex borders the religious structures to the west and to the south; the buildings may have been designed as workshops, places of storage, or sometimes even dwellings. Three polished stone axes were found in one of the units consisting of two rooms side by side.

A general outlook of this neighbourhood is still unavailable but an entry is indicated by rounded walls at the far end of the main street, and a large elongated structure closing the area to the east defining a 70 m square for the central part.

A definite interpretation of functions of this religious neighbourhood would of course be premature. It seems obvious that an institution based on an Egyptian model ruled its activities and that providing offerings for the chapels kept a great number of people busy. This may have involved a Nubian adaptation of the Egyptian worship dedicated to the memory of deceased kings or governors, in some way a funerary complex close to the city of the living. A necropolis which remains to be studied is included in the ruins of this religious complex at the end of the Classical Kerma Period.

The Eastern Necropolis

The thorough cleaning of several tumuli enabled us to understand how the bucranes were placed to the south of the tombs. Close to these were some jars that were used for libations. Two ceramic plates placed on the tumulus seem to represent a snake game; the model of a bird was also noted.

The overall shape of the tumulus, with its black stone ring, may be completed by an almost flat cover of white quartzite pebbles. Only a burial place was excavated; it had been totally plundered.

Archaeological Material

An investigation of the ditches is focussed on the search for seal impressions. Some twenty-or-so of these objects were found and will complement other findings of the kind. They demonstrate the close links between Kerma and the Egyptian administration of the fortresses of the Second Cataract.

Large fragments of an ostrich shell skilfully engraved show an interesting iconography. Giraffes, a crocodile, and a bovine-type animal belong to the Nubian traditional bestiary. A character placed under a geometric garland seems to stand out as the centre of the composition, whereas other human figures give a precise and detailed account of their clothing. The prow of a ship is also represented.

Discovery of Middle Stone Age Sites near El Ghaddar (Sudan)

*Michal Kobusiewicz
Institute of Archeology and Ethnology
Polish Academy of Sciences
Zwierzyniecka 20
60-814 Poznan, Poland*

During the first three days of December 1993 the author, accompanied by J. Kabacinski, and invited by Dr. Krzysztof

Grzyski from the Royal Ontario Museum (Toronto), carried out an archaeological reconnaissance within the area of the Canadian concession (Grzyski 1987) near El Ghaddar, Sudan. Besides some late prehistoric sites in the Letti Plain, several interesting Middle Palaeolithic sites were discovered in the vicinity of El Ghaddar village near Old Dongola. In the course of our fieldwork three sites were examined in some detail.

Jebel Sheik Wahab

The site is located on the eastern edge of the top of the *jebel* (inselberg). Thousands of stone artefacts occur in a concentration about 20 m in diameter. The assemblage is composed of Levallois cores in various stages of exploitation, Levallois flakes, some of which are partially retouched and a large amount of débitage. All of these artefacts are made of ferricrete sandstone, of which the top of the *jebel* is composed. A number of such artefacts also cover the southern slope of the *jebel*.

Jebel Kobkaba

This is a medium sized *jebel* situated ca 800 m SE from Jebel Sheik Wahab, ca 250 m E from site ROM 13/5 (a house construction). A large concentration of artefacts made in the Levallois technique occur on the top of the *jebel*, as well as on its slopes. In the western part of the concentration, these are typical Levallois cores, flakes (Fig. 1, 2) and points, (some of them very large), as well as abundant débitage and angular cores. Here the artefacts are very worn and rolled. In the eastern part the artefacts are clearly more fresh. Also in the eastern area the remnants of wall-like constructions were discovered, built of cobbles and slabs and still preserved to a height of 20–30 cm. They form half circles or even ovals or circles ca 1.5–2 m in diameter. They may be the remains of shelters or windbreakers.

Jebel Ghaddar

The site is located about 100 m E from the foot of Jebel Ghaddar at the beginning of

a ridge running toward the S-E. It consists of a broad spread of Levallois cores, flakes, and débitage, accompanied by a chopping tool (Fig. 3), but also includes some regular single-platform cores and a side scraper on an elongated flake. All artefacts are made of ferricrete sandstone.

Apart from these sites, other similar sites were discovered on most of the sandstone *jebels* in this area. The artefact concentrations found on the flat tops of the inselbergs seem to be pretty much in situ. This is indicated by articulating pieces very close to each other, as well as by the good preservation of stone wind-shelters, which are probably connected to the Middle Palaeolithic settlement.

It is impossible to estimate the exact age of the concentrations, but typological and technological criteria point strongly to the Middle Stone Age. Some concentrations composed of rolled and worn artefacts with angular cores seem to be older than the relatively fresh, purely Levallois assemblages.

The Middle Palaeolithic MSA sites occur exclusively in very close proximity to outcrops of ferricrete sandstone. It seems that the sites represent a concern for good raw material to produce tools.

The concentration of Middle Stone Age reported here is the latest discovery of its kind after those of similar sites from the vicinity of the Second Cataract (Chmielewski 1968, Guichard and Guichard 1968, Marks 1968), and the sites from the Dongola Reach near Debba on the west bank of the Nile (Marks et al. 1968a, Marks et al. 1968b).

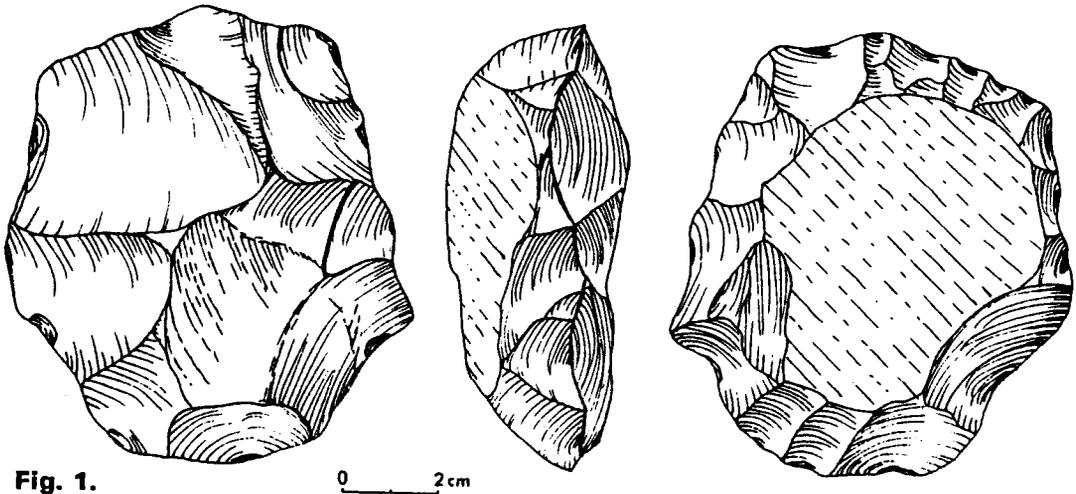


Fig. 1.

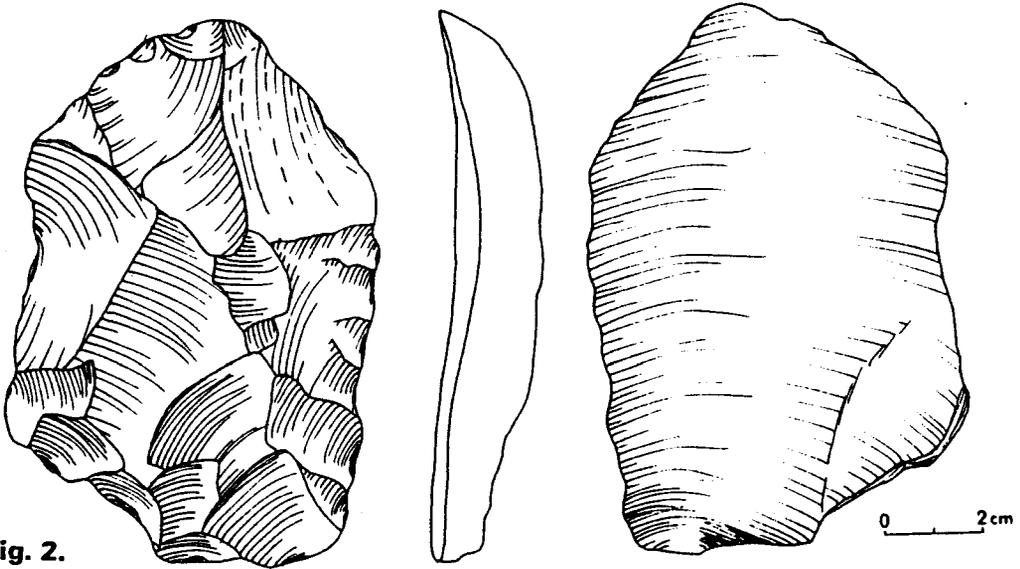


Fig. 2.

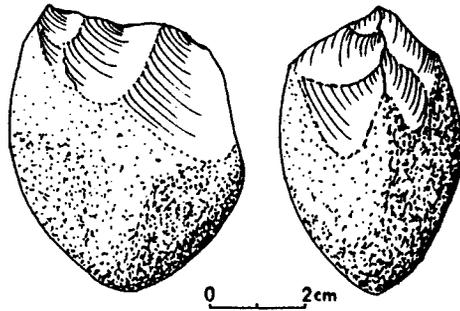


Fig. 3.

References

Chmielewski, W.
 1968 Early and Middle Paleolithic Sites near Arkin, Sudan. In F. Wendorf (ed.), *Nubia* 1: 110-47.

Grzymski, K.
 1987 Archaeological Reconnaissance in Upper Nubia. The SSEA Publications, V. 16: 1-58 (Benben Publications, Toronto).

Guichard, J. and Guichard, G.
 1968 Contributions to the study of the Early and Middle Paleolithic of Nubia. In F. Wendorf (ed.), *Nubia* 1: 148-93.

Marks, A. E.
 1968 The Mousterian industries of Nubia. In F. Wendorf (ed.), *Nubia* 1: 194-314.

Marks, A. E., Hays, T. R., and Heinzelin, J.
 1968a Preliminary report of the Southern Methodist University Expedition in the Dongola Reach. *Kush* 15: 165-92.

Marks, A. E., Shiner, J. L., and Hays, T. R.
 1968b Survey and excavations in the Dongola Reach, Sudan. *Current Anthropology* 9: 319-23.

(CeRDO) in the Nubian Desert of the Sudan between latitudes 20 and 22 and longitudes 32 and 36. Over 180 sites have so far been recorded, but many more are needed to complete the chronological sequence of the area's Holocene history. Among the sites discovered to date, there are Mesolithic camps, possibly Neolithic graves, an A-Group or predynastic related burial tradition of the fifth millennium B.C., scattered evidence for a fourth millennium B.C. burial tradition, dynastic hieroglyphic inscriptions, as well as some Ptolemaic and Napatan/Meroitic remains. More recent remains consist of what appears to be a Blemmyean (local Beja) burial tradition of the first few centuries A.D., and a host of Medieval Islamic remains foremost among which are many mining villages and cemeteries. Various other rock engravings and some forts and mines from this century complete the catalogue of finds.

The jewel of Nubian Desert archaeology is the site of Deraheib, first reported in print by Mohammed Ali Pasha's prospector during the nineteenth century (Linant de Bellefonds 1868). This vast village of stone walled apartment style houses, avenues, and castles was almost certainly the city of Allaqi, the hub of Medieval Arab occupation in the Nubian Desert. It was here during the ninth century that the rebel Rabia clan declared their independence from the caliphate in Baghdad. Arab writers describe it as a wealthy market town, a meeting place for all who seek gold in the desert, and a way station for pilgrims to Mecca via the Red Sea port of Aidhab (cf. various sources in Vantini 1975).

Before the Arabs arrived, Deraheib was probably the seat of the Beja King Ol Bab. A structure resembling a church (Manlio Sozzani, personal communication) suggests a Christian period occupation. Before that, a coin suggests that the site was inhabited during the Ptolemaic period. Archival research by Giancarlo Negro suggests that at that time Deraheib may have been Berenice Panchrisia, the "all golden" outpost of the Hellenic pharaohs. History at this site may prove to extend even farther back in time. Similarities in the site's layout to that shown on the Turin papyrus suggest that Deraheib

Preliminary Results of CeRDO's Research in the Nubian Desert

Karim Sadr
 Alfredo Castiglioni
 Angelo Castiglioni
 Centro Ricerche sul Deserto Orientale
 Via Gradisca 22
 21100 Varese
 Italy

Since 1989 four seasons of survey and test excavations have been undertaken by the Centro Ricerche sul Deserto Orientale

may have been the gold mine of Seti I of the New Kingdom period. Planned excavations at this fascinating site will, we hope, reveal these layers and much more.

Beyond Deraheib there are hundreds of other mining villages large and small. Although almost all of these contain at least some Medieval Aswani pottery, most were probably established before the arrival of the Arabs. Ancient Egyptian records tell us that mining in the Nubian Desert began at least as early as the Middle Kingdom period (Save-Soderbergh 1941). A gold bracelet found in a fifth millennium B.C. grave, however, suggests that gold may have been extracted here even in predynastic times.

Partially destroyed by looters, this grave contained aside from the golden bracelet, fine burnished ceramics, and a pendant similar to predynastic wares (Jean Vercoutter, personal communication). Within the tumulus there was also an offering area marked by small stelae and two animal horn cores (sheep and cattle; Louis Chaix, personal communication), as well as masses of charcoal. Submitted to the CSIR laboratory in Pretoria, the carbon dated to the mid-fifth millennium B.C. Excavation of the two other known tumuli of this type in coming seasons should provide more information on this exciting new discovery.

Among the other graves excavated, a late-fourth millennium B.C. grave also included cattle bones but was otherwise too thoroughly looted to provide information about the tradition involved. The burial structure consisted of a 25 m stone circle with the looted burial chamber on the eastern rim of the circle. In the center of the circle a large fireplace was surrounded by scattered bones of sheep and cattle. The radiocarbon date was obtained from this fireplace.

Architecturally, both this and the fifth millennium B.C. tumulus are rare types, suggesting that the graves may have belonged to outsiders. Two other types of tumuli were excavated, both of which are common enough to have been graves of locals.

One of these types is a simple conical tumulus with a diameter of about 3–5 m. Two examples were excavated, one of which contained three beads similar to examples found in a Neolithic context in the Kerma Basin (Charles Bonnet, personal communication). Both these graves showed a burial tradition of secondary inhumations; that is to say the bones were already disarticulated prior to burial. Secondary burials such as these are uncommon in the Nile Valley, and the large numbers of this type of tumulus suggests they were built by an indigenous population.

The other common grave type, and by far the most spectacular of the tumuli in the Nubian Desert, is a circular stone platform, with some examples reaching 15 m in diameter. Five of these tumuli were excavated, and two were radiocarbon dated to the seventh and eighth centuries A.D. If the dates are correct, these must be Beja graves of the immediately pre-Islamic period. Two types of burial chambers—a domed vault and a slab covered chamber—are associated with this style of superstructure. In both, the body is lain on the right side in a flexed position. In two of the graves the body had been lain on a leather blanket. Other burial goods include the occasional bead, pendant, or other such decorative items. Ceramic vessels were apparently left as offerings outside the tumuli.

Besides the mines and the graves, surface scatters of artefacts—remains of campsites—have also been found. Scattered ceramics can be found all over the desert, evidence of continuous, though light traffic throughout the last six or seven millennia. Some artefact scatters were denser and more clearly definable as sites. Among these were a group of sites with Khartoum Horizon style sherds, among which many were identified as Mesolithic by Isabella Caneva. The richest of these sites are found around a vast depression which in the early Holocene may have formed a playa.

Among the many rock engravings, those showing cattle presumably date to the third millennium B.C. and earlier since the climate after that would have been too dry for these beasts (Muzzolini 1982). A series of rock art

showing crude stick figures in association with camels and horses, often shown in combat most likely date from Roman or Medieval times. Inscriptions abound in the Nubian Desert as well. Hieroglyphics found at various localities name prospectors who traversed the desert (Damiano-Appia 1992), while later Arabic texts and some writings in Coptic appear to be from military expeditions in recent centuries.

CeRDO's four seasons of research have only scratched the surface of a complex historical sequence in a vast area. Much remains to be done and many of the sites deserve intensive excavations. Even so, what has been unearthed so far has amply repaid the herculean efforts of mounting these difficult expeditions. The Nubian Desert is no longer the archaeological blank it used to be, and with luck it won't be long before we know enough about the desert's prehistory to contribute to a better understanding of the past in the Nile Basin as a whole.

Acknowledgments

The 1993 campaign of the Centro Ricerche sul Deserto Orientale was sponsored by Sector Sport Watches, Italiana Petroli (IP), Iveco, Pirelli, and Banca Briantea. The radiocarbon dates were processed by Dr. John Vogel at the CSIR laboratory, Pretoria.

References

Damiano-Appia, M.
 1992 Inscriptions along the tracks from Kubban, Buhen, and Kumma to "Berenice Panchrysos" and to the South. Paper presented at the International Meroitic Conference, Berlin.

Linant de Bellefonds, L.
 1868 *L'Ethbye. Pays Habite par les Arabs Bicharieh. Geographie, Ethnologie, Mines d'Or.* Paris.

Muzzolini, A.
 1982 Les climats sahariens durant l'Holocene et la fin du Pleistocene. *Travaux du Laboratoire d'Anthropologie,*

de Prehistoire, et d'Ethnologie des pays de la Mediterranee Occidentale 2: 1-38.

Save-Soderbergh, T.
 1941 *Agypten und Nubien: ein Beitrag zur Geschichte Altgyptischer Aussen-politik.* Lund: Hake Ohlssons Boktryckeri.

Vantini, G.
 1975 *Oriental Sources concerning Nubia.* Heidelberg and Warsaw.

■ **TANZANIA**

Archaeological Research in Karagwe District

Andrew Reid
 Archaeology Unit
 University of Botswana
 Private Bag 0022
 Gaborone
 Botswana

J. E. K. Njau
 National Museums of Tanzania
 P. O. Box 511
 Dar es Salaam
 Tanzania

In 1993 a programme of archaeological research was completed in Karagwe District, in the northwestern corner of Tanzania. The lack of work in Karagwe contrasts with neighbouring areas—Burundi, Rwanda, Uganda and Buhaya—where much has been done, in certain places for more than fifty years. As a consequence, it was of considerable importance to begin to establish the cultural sequence for the district: both to further academic interests and to make a contribution to Cultural Resource Management in what continues to be an archaeologically poorly documented country.

First an archaeological survey was carried out so as to commence the process of

archaeological documentation of the district. In the short time available it was impossible to hope to cover the entirety of Karagwe (an area of over 7200 km²) or even to investigate a statistically significant sample of the district. Furthermore, the district ranges in altitude from the floodplain of the Kagera at 1200 m to the highest parts of the Karagwe escarpment at 1700 m and ecozones range from papyrus swamp through thick valley forest to hilltop grassland. Seven locations were chosen for survey: Kayanga, Rwambaizi, Nyabiyonza, Kaisho-Isingiro, Murongo, Bugara, and Kitengule (Fig. 1). These covered a wide range of topography, but by no means should be considered to have covered the district's entire range of ecological diversity.

A total of 84 sites or locations of archaeological material were encountered by this survey, ranging from ESA bifaces to iron from the nineteenth-century kingdom of Karagwe (not to mention an abandoned tin-mining complex from the 1930s near Murongo with most of the iron machinery still in situ). Details of sites, including their six figure map coordinates, are contained within a report presented to the Department of Antiquities, Dar es Salaam.

Early Stone Age

Occurrences of Early Stone Age material were confined to isolated encounters, in exposed, frequently erosional deposits. All of this material was encountered on the eastern escarpment of Karagwe. The only exception to this was a single large biface seen embedded in a sediment cliff of the Kagera River, west of Murongo. Particular concentration of material was recognised at and around Kayanga, but isolated artefacts were also encountered at Rwambaizi, Igurwa, and Bwera. Tool forms encountered included bifaces, picks, core scrapers, and large flakes. Diminutive bifaces were recovered at Bwera and at Kibwera.

Initial encounters with ESA material at Kayanga suggested a location both rich in artefacts and under threat from the activities of the local population producing building rubble for a presently burgeoning construction industry at the District

Headquarters. On much closer inspection, however, it was found that the archaeological material was isolated and was located in high erosional contexts. Artefacts were thus dispersed and very badly abraded.

Subsequent investigations spread out over the Kayanga hilltop to attempt to look for primary contexts for these artefacts. Despite being able to examine several recently cut sections, particularly new pit latrines, no primary contexts could be located on the hilltop. On the less-exposed western flanks of the hill more ESA artefacts were encountered. These were less abraded than those from the eastern flank, being located in soil rather than gravel deposits. However, as a consequence of being on agricultural land, many had suffered the ravages of the hoe and were badly fractured.

Despite this disappointing distribution, surface collections of material were made so as to begin the process of creating an ESA assemblage for the district. The material collected from Kayanga included large bifaces. Apart from these large cutting tools, the heavy duty tools, such as picks, and diminutive bifaces that were encountered suggest that most of the early lithic material encountered was from the late Acheulian early Middle Stone Age interface. The number of such tools encountered is, however, small.

Middle Stone Age

Three sites characterised by MSA material were located. All three of these are situated in lowland areas: one on the Kagera river itself and two underneath Rwambaizi and the eastern escarpment. All of these sites featured large quantities of material which were observed to be eroding out of sedimentary deposits. Collection was carried out at one of these sites, a low hill situated near Kibwera, some 5 km northeast of Rwambaizi. Preliminary analysis of this material suggests long-term utilisation of this location. The assemblage included small bifaces, which may be considered transitional between the ESA and MSA, characteristic MSA diminutive bifaces, points, and core scrapers, and tools with

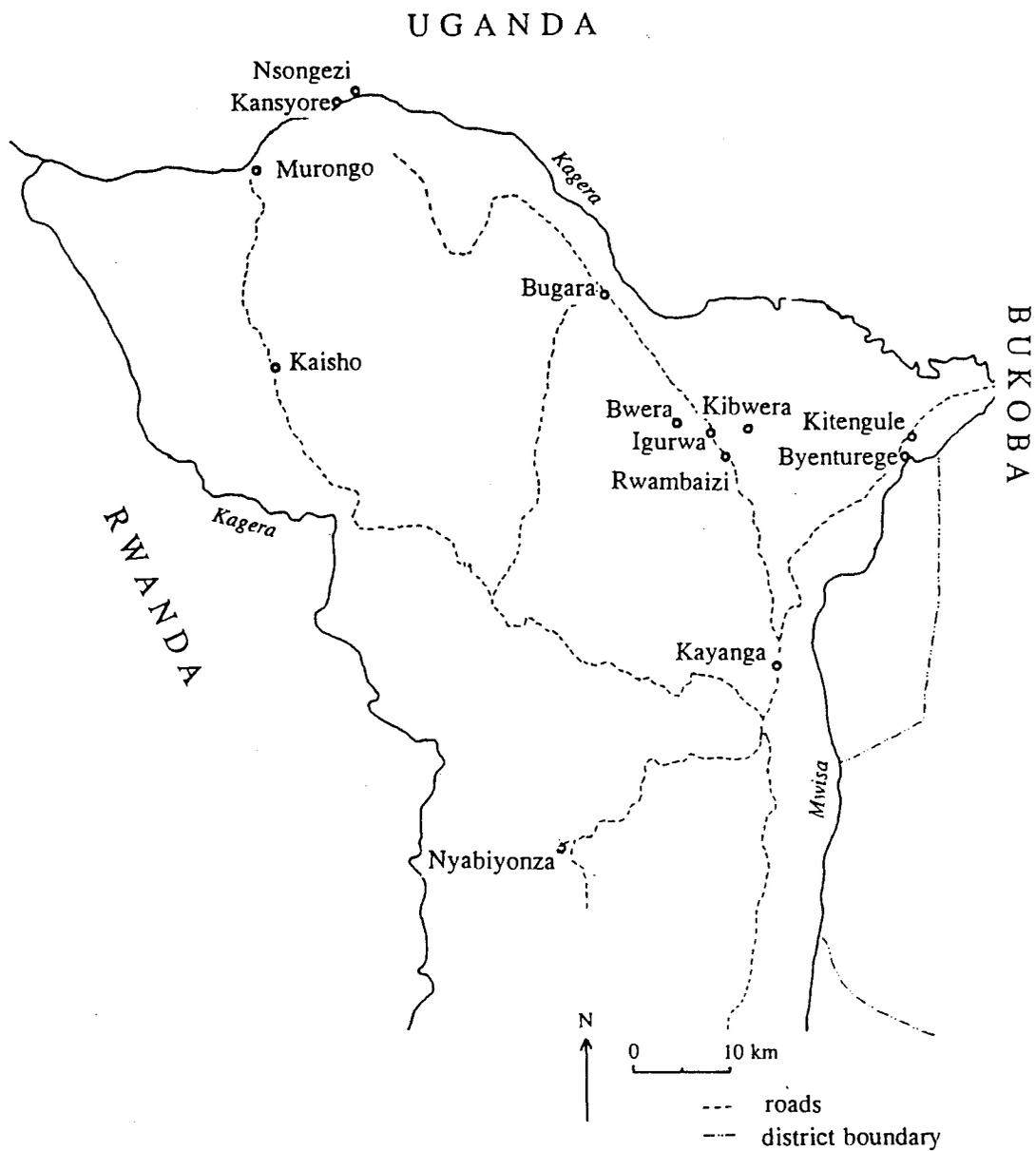


Fig. 1. Karagwe District.

very fine retouch, suggesting a transition with the LSA. (There was also a low density of fully LSA material present at this site.)

The remaining site, located in sediments of the Kagera river, is consistent with the regular use of the Kagera throughout the human career, documented on the north bank in Uganda. As well as these three concentrations of MSA material, a small percentage of the material encountered at predominantly LSA sites, discussed below, could be categorised as MSA. Their location along the lower Mwisá river, as it approaches the Kagera, and on the Kagera itself is consistent with floodplain exploitation.

Late Stone Age

Artefacts of the LSA were also largely confined to lowland floodplain areas. Single artefacts were occasionally encountered on hills or ridges overlooking these lowlands but never further into the Karagwe Highlands. Particular concentrations of sites were found along the Kagera river below Bugara and along the Mwisá river south of Kitengule ranch, at a location called Byenturege. Indeed in this latter area the surface scatters of material in places appear to be continuous for more than a kilometre. There are also several LSA sites around Kibwera, below the eastern escarpment.

The main concentration of LSA sites is located on terraces above permanent river courses. Further work at these sites used as a base Nelson's comprehensive analysis of the LSA assemblages from Nsongezi rock-shelter (Nelson and Posnansky 1970). In addition to the detailed quantitative analysis of the assemblage Nelson was able to recognise differences in the assemblages from different stratigraphic units. Having recognised extensive surface scatters of material on the Mwisá river at Byenturege and on the Kagera below Bugara, it was decided to make extensive collections of surface material so as to conduct a comparative study with the Nsongezi assemblages. The assumption upon which this work relied was that Nsongezi, the Mwisá sites, and the Bugara sites were all part of a single or related exploitation

system. During the wet season the plains are prone to flooding and animal populations disperse: human settlement during these seasons is likely to have been equally dispersed and as a consequence very difficult to locate archaeologically. Therefore by examining the Mwisá sites and the Bugara sites we can compare the assemblages used in different ecosystems, by broadly similar populations, at different times of the year.

Work was concentrated at Byenturege. Here there are large erosion scars, up to 50 m in length, on the lip of the river terrace, which contain large quantities of lithic material. Rather than use some arbitrary grid system to investigate these scars, each scar itself was identified as a unit and therefore collections were kept separate for each unit. A total of 13 exposures were examined in this way, covering an area along the river of around 1.5 km. A smaller collection was made at one location on the Kagera river below Bugara. On an impressionistic level these LSA assemblages largely consisted of core tools (e.g., blade cores, bipolar cores, bipolar blade cores, and platform cores). There was also a low level of MSA material on these sites.

A notable absence in the survey conducted was the lack of evidence for Kansyore Ware. Sherds from this pottery tradition, in association with LSA artefacts, were encountered at Kansyore Island on the Ugandan side of the Kagera (Chapman 1967). It would have been predicted that sites would have been encountered on the southern side of the Kagera around Murongo, Bugara, and Kitengule.

Early Iron Age

A still more significant absence in the cultural record was the lack of evidence for the Early Iron Age. Not one single sherd of Urewe ware was encountered in Karagwe. This contrasts with the well-known locations of early ironworking in Buhaya, Rwanda, and Burundi, and specifically at Kansyore Island and Nsongezi rock-shelter on the north side of the Kagera river. This latter occurrence of EIA material is intriguing given its apparent absence in Karagwe. It

illustrates that the earliest ironworkers were familiar with at least the margins of Karagwe, but that they did not consider it to be worthy of settlement, Karagwe being much dryer than neighbouring areas.

Later Iron Age

As might have been expected the bulk of the archaeological material encountered can be dated to the last one thousand years. Less predictable was the fact that most of this material consisted of evidence for iron smelting. The Karagwe Kingdom, which appeared in the last few centuries, is known to have been characterised by a combination of agriculture and specialised pastoralism. The lack of archaeological evidence for these other activities may be explained in several ways. Those areas which were used for agriculture in the past are still likely to be cultivated today. Since roulette decorated pottery has continued in use well into this century, it is very difficult to distinguish recent domestic debris lying on the surface from older archaeological material. One indication of past occupation, however, may be the number of quernstones encountered within modern fields. There is some evidence to suggest that banana agriculture, which is today predominant, is only a recent phenomenon in Karagwe appearing in the last 100 years and replacing grain (sorghum and finger millet) agriculture. The presence of significant numbers of quernstones may therefore indicate the older grain based agriculture.

The roulette-decorated pottery that was encountered is unexceptional. It is either Knotted Strip roulette (KPR) or Twisted String roulette (TGR: after Soper 1985). There are no carved wooden roulettes and no rolled over rims, which are so characteristic of "Bigo Ware," from southern Uganda. This may suggest that the Karagwe area was merely a southern fringe of the roulette decorated world. It is also possible, on the basis of the generally poor application of the roulette, that the pottery was made in recent times. In Uganda poorly applied roulette is associated with recent manufacture. As for pastoralism, no evidence whatsoever could be found. This was especially surprising since the Karagwe

kingdom was renowned for its cattle and evidence for pastoralism had been readily found 100 km or so further north in Mawogola, southern Uganda (Nyame Akuma 33).

The bulk of the LIA material, the ironworking, is noticeably concentrated along the top of the eastern escarpment of Karagwe. A few very small sites were encountered on the western side of Karagwe, around Kaisho, several small ironworking sites were encountered at the foot of the eastern escarpment and occasional slag and roulette decorated pottery was observed along the Kagera river at Bugara and Kitengule.

Typically the sites on the eastern escarpment consist of several piles of large blocks of slag, each block measuring up to 80 cm in maximum dimension. Less frequently they also include tuyere fragments and very occasionally burned mud fragments. Not all sites are associated with roulette decorated pottery, but since none are associated with Early Iron Age pottery it is assumed that they are all of later date. It was noted with some concern that in areas of high building activity, Kayanga in particular, builders are actively collecting slag blocks and incorporating them into their new structures.

Follow-up work sought to gain an understanding of the ironworking conducted in Karagwe, both in terms of its technological characteristics and the way in which the production of iron was organised within the state. These questions were recognised as being of importance in helping to understand the concentration of ironworking sites at certain locations along the eastern escarpment. There was also a need to explain the unusually large size of slag blocks encountered at these sites. Accordingly work was based at Igorwa, a location with numerous iron-smelting sites. A series of interviews were conducted with a number of informants by Rachel Insoll. As a result of these interviews several old men agreed to reenact a smelt. Subsequently preparations were made and the smelt was attempted.

Unfortunately no iron was produced and the sole product of the furnace was a

form of modified ore, in the process of being, but not yet, slagged. As a result of this failure to produce iron, there followed a highly productive debate amongst the old men about why they had failed. This debate helped to clarify many questions concerning technology and the social relations of production.

Discussion

The results of the survey work are significant in several ways. Firstly they achieve the very basic goal of outlining the cultural sequence within Karagwe. A body of some 84 sites is therefore added to the register of known archaeological sites of Tanzania. Secondly there are marked patterns within the distribution that invite questions and further investigation. Why are ESA and LIA phenomena largely confined to the Karagwe highlands, whilst MSA and LSA occurrences are found only in the lowland floodplains? The answers to such questions are no doubt to be found partly in geomorphological, environmental, and cultural locational factors, all of which may be focussed on by future work. Thirdly the total absence of both Kansyore and Early Iron Age sites runs counter to the predicted cultural sequence for the district and highlights the importance of actual fieldwork evidence.

The LSA material and the ironworking in particular indicate that Karagwe District has great archaeological potential for future research. The work shows that through the adoption of relevant strategies for fieldwork, researchers can both make a direct contribution to the archaeological resource base of the country, whilst at the same time developing specific research interests. The survey work also demonstrated that it is hazardous to merely predict the archaeological record of such a large area on the basis of knowledge of neighbouring areas. Rather, actual archaeological studies are needed to document this record. This has important implications for both archaeologists keen to summarise large uninvestigated territories and for those responsible for creating cultural resource management strategies in cases where

cultural resources have yet to be documented.

Acknowledgments

This project was funded by the link agreement between the University of Dar es Salaam and the University of Bergen. Assistance was also provided by the British Institute in Eastern Africa. Thanks are due to Mr. Mugangala, Mr. Kaitaba, Mr. Lwamtoga, and the people of Karagwe for their friendship and cooperation and to Ms Kiyembe of the Department of Antiquities.

References

Chapman, S.
 1967 Kantsyore Island. *Azania* 2: 165-91.

Nelson C., and Posnansky, M.
 1970 The stone tools from the re-excavation of Nsongezi Rock Shelter. *Azania* 5: 119-72.

Soper, R.
 1985 Roulette decoration on African pottery: technical considerations, dating and distributions. *The African Archaeological Review* 3: 3-31.



FORUM

**African Anthropological
Archaeology Position**

Bowdoin College seeks an assistant professor for a new tenure-track position, beginning fall, 1995. The position requires an anthropological archaeologist specializing in the later archaeology of Africa. We prefer candidates with Ph.D. in hand but will consider candidates very close to completing their dissertations. The person holding this position will teach four courses per year on a rotating basis, including Introduction to World Prehistory, Essentials of Archaeology, and Peoples and Cultures of Africa, as well as courses in the individual's area of specialization, such as the rise of complex societies, the Iron Age, or ethnoarchaeology.

Please send a letter of application, c.v., and the names and addresses of three references to Susan E. Bell, Department of Sociology and Anthropology, Bowdoin College, Brunswick, Me 04011, U.S.A. Priority will be given to applications received by November 1, 1994. Bowdoin College is committed to equal opportunity through affirmative action. Women and minority candidates are especially encouraged to apply and identify themselves as such.

**African Contemporary
Art Exhibition**

Beginning January 1996

*The International Centre for
Bantu Civilizations*

The International Centre for Bantu Civilizations (CICIBA), in cooperation with the University of South Florida, is preparing a travelling exhibition of African contemporary art. It will open in Tampa, Florida, in January 1996, and then travel to selected venues in the United States, Canada, and Europe on a two- to three-year tour schedule.

The exhibition will present art work from seven painters and sculptors from the CICIBA member states. It will thus be possible to exhibit from six to ten pieces per artist to the public. The overall theme of the exhibition is "African Artists in the Bantu-Speaking Area: Traditions in Contemporary African Art," with three subthemes: "Retaining Traditions," "The African Female Iconography," and "Social and Political Commentaries."

A color catalog will be produced covering all the pieces exhibited. The seven artists will be invited to the United States for the opening ceremony and will participate in workshops, teaching, and interviews.

For more information, contact Bernard Clist, "USA Exhibition," Département d'Archéologie et de Muséologie, CICIBA, B. P. 770, Libreville, Gabon (Fax 70.34.49).



PUBLICATIONS

Book Review

Alan G. Morris, The Skeletons of Contact: A study of Protohistoric Burials from the Lower Orange River Valley, South Africa

Kit W. Wesler
 Wickliffe Mounds Research Center
 P.O. Box 155
 Murray State University
 Wickliffe, Kentucky 42087
 U.S.A.

Alan G. Morris, *The Skeletons of Contact: A study of Protohistoric Burials from the Lower Orange River Valley, South Africa*. Witwatersrand University Press, Johannesburg, 1992. 228 pp. R69.00.

Alan Morris has chosen a study area along the Orange and Riet Rivers, in the former northern frontier territory of South Africa. He offers an analysis of four sets of late prehistoric to early historic burials, with the goal of showing that human bioarchaeology can provide insights into the biological and cultural interactions among the varied ethnic groups that came into contact in this region.

As Morris describes it, the area is one of complex cultural interactions. Although the history of the Orange River frontier, like that of many frontiers, is often presented simply as an African-European encounter, Morris notes that the contact situation is much more complicated. Before European arrival, Africans of Khoisan and Bantu derivation met, maintaining or blending hunter-gatherer (San), pastoral (Khoi), and agricultural (Bantu) adaptations. When Europeans arrived, each ethnic group and lifestyle interacted with the Europeans and their market-agricultural background.

By the nineteenth century, one result of this multilateral interaction was the groups broadly called Kommandos, displaced Khoi

who accepted many new members of various and mixed backgrounds and who connected closely with the European colonial centers. Some of the Kommando groups, particularly the Griquas in Morris's study area, formed relatively stable communities.

Morris begins his study with the expectation that archaeologically derived human remains will reflect the complex situation of the Orange River frontier. He analyzes four burial populations.

The Riet River group was largely recovered by amateur excavators in the 1920s and 1930s. Uncorrected 14C dates on these materials range from A.D. 1060 + 50 to A.D. 1570 + 50. Some of the burials are fairly well associated with Type-R settlements, characterized by round stone enclosures and a hunting economy, possibly adopting some pastoralism. The dates, and the general geographic range, of the Type-R settlements and the Riet River burial sample suggest a close relationship. Literate travelers reported "Bushmen" with domestic animals in this area in 1811, who were gone by the 1820s.

The Kakamas and Abrahamsdam burials were excavated in the 1930s. The latter group is small and not well preserved, and their analysis is less informative than that of the other groups. The Kakamas burials have been discussed widely in the literature, but Morris shows that previous accounts were inconsistent and incomplete, prompting thorough reanalysis. Three 14C dates among this group range tightly in the mid eighteenth to early nineteenth centuries, and one grave whose extended position betrays Christian influences suggests a post-1811 funeral. Historic sources place a Khoi group called the Einiqua in this area, but no domestic sites are associated with the burials.

The Griqua burial sample is well provenienced from an early historic cemetery, with documentary and oral testimony strongly supporting the Griqua identity. These burials are extended and supine, 28% in coffins, evidence of European cultural affinities.

Morris reviews ethnographic and historic data regarding burial practices, and

is able to delineate four general patterns. Khoi burials rarely contain grave goods, and the burial pits are characterized by niches and covered by large cairns. San graves often have accompanying artifacts, but rarely niches or large cairns. Bantu burials often have niches, low cairns, and abundant grave goods. The Christian pattern is most marked in the extended, supine position of the body. The African patterns evidence considerable overlap, but can generally be distinguished. Of the archaeological samples, the Riet River style shows both San and Bantu affinities; the Kakamas pattern most resembles the Khoi style; and the Griqua graves are characteristically Christian extended burials, some with niches, which suggest Khoi and/or Bantu antecedents.

The central chapters of Morris's monograph are the methodological basis for comparing the archaeological samples to modern Khoisan, South African Negro, and Caucasoid genetic groups. Through univariate, bivariate, and multivariate statistical tests, he shows first that each archaeological sample is a relatively homogeneous group and may be treated as a single population. (But it would also have been interesting to test whether all of the archaeological samples could have been treated as a homogeneous population, or at least the Riet River and Kakamas samples.)

Morphologically, the Riet River people are most like Khoisan. The Kakamas people resemble both Khoisan and South African Negro populations. The Griqua archaeological sample, although surprisingly homogeneous given their historically diverse origins, show the most variability under multivariate analysis: they evidence a "predominantly Negro morphology" with some Khoisan characteristics, and one or two specimens with Caucasoid affinities.

From this reviewer's perspective, chapter 7, on osteological indications of lifestyle, is perhaps the most interesting. The heavy wear on the Riet River and Kakamas teeth is consistent with a traditional lifestyle, hunting and gathering with perhaps some pastoralism. The Griqua, in contrast, show much less wear but a high rate of caries, betraying their connections to the colonial

system with its agriculture and refined foods. The differences in caries between Riet River and Kakamas burials, the latter having better dental health, is related to higher levels of natural fluoridation in the drinking water, a neat illustration that osteo-archaeological data reflect both the cultural and natural environments.

Chapter 8, presenting scenarios of gene-flow between groups of equal and unequal social status, is a bit more theoretical than the previous discussions, but raises interesting and testable propositions while adding another perspective to the analysis.

Morris's book is based on his Ph.D. work, and reflects something of a dissertation style. This is, on the whole, positive: the summaries are systematic and clear throughout, the methodological sections, though tedious to a nonspecialist, provide a solid explanation of how the analysis was accomplished, and the great masses of data are available in appendix. The production of the volume is good: typographical errors are rare or lacking, and although the few photos are a bit fuzzy, the drawings are well done. In particular, the graphic presentations of the multivariate statistical analyses in chapter 6 are very clear.

The various lines of evidence prove to be complementary, and yield a more complex and complete picture of the archaeological populations than documentary, archaeological, or osteological data could do in isolation. Morris has made a very useful contribution to the archaeology of the region, and to the synthesis of human bioarchaeology and ethnohistorical studies. The only disappointment of the work is the lack of connection of the burial populations with their archaeological domestic context: this is not a fault of Morris or his study, but a challenge to regional archaeologists.

Book Review

Marie-Louise Inizan, H  l  ne Roche, and Jacques Tixier, *Technology of Knapped Stone*

Pamela R. Willoughby
 Department of Anthropology,
 University of Alberta
 Edmonton, Alberta
 T6G 2H4
 Canada

Marie-Louise Inizan, H  l  ne Roche, and Jacques Tixier, *Technology of Knapped Stone*. Pr  histoire de la Pierre Taill  e 3. Meudon: Cercle de Recherches et d'  tudes Pr  historiques, 1992. ISBN 2-903516-03-0. 127 pages. 130 FF plus 45 FF postage.

This volume is the third in a series on lithic technology produced by the Cercle de Recherches et d'  tudes Pr  historiques (CREP) based in Meudon, France. It is available from the publishers (CREP, CNRS, 1, place Aristide Briand, 92195, Meudon, France). This laboratory concentrates on the technological analysis of Palaeolithic assemblages. The first (1980) volume produced in this series was in French and dealt with general lithic terminology and technology; the second, also in French, discussed blade technology (*economie du d  bitage laminaire*). This third publication is a revised and updated English translation of the 1980 one. New sections deal with specific research methods and analytical techniques developed or expanded since the first volume was produced.

In this work, technology is defined as "a conceptual approach to prehistoric material culture, based on the reasoned study of techniques, including those of human physical actions" (p. 11). This is more a definition of the approaches one can use to study technology rather than the term itself. These approaches are the focus of this volume and are grouped into sections examining the stages of artifact production, resulting in a sort of life history analysis.

Reviewing the systematic context of stone artifacts, these extend from raw material acquisition, to tool production and use, and continue up to the point when artifacts are discarded into what becomes their archaeological context. All of the methods currently used in lithic analysis are reviewed here (except for the behavioral analysis which is used to interpret site formation processes).

Chapter 1 deals with raw material characteristics; why were certain materials selected for knapping and not others? Lithic materials are classified here by their physical properties and suitability for working, rather than by how the rock was formed or its mineralogy. In this way, the focus is on the decisions the prehistoric knapper would have made, rather than with the concerns of modern geologists. It is pointed out that certain rocks are good for some methods of reduction, but not for others. Experimental analysis has shown that raw material availability and variability are critically important for the interpretation of prehistoric materials, even in regions where abundant lithic resources existed. Issues of heat treatment (why and how) are addressed, as well as procurement. Is the archaeological material from a local source, or has it been transported over a long distance? What does this tell us about the actions and mobility patterns of the people who produced the assemblage?

The authors review methods that can be used to understand a lithic assemblage. These include conjoining and refitting, experimental replication of knapping techniques, usewear analysis, and examining the cognitive (including decision making) and psychomotor processes used to produce tools. Inizan and her colleagues distinguish between conjoining and refitting. Conjoining is matching pieces or fragments together after determination of positive or negative knapping surfaces. Refitting involves a complete series of conjoining sets that belong to the same block of raw material. Both techniques are necessary in order to reconstruct the *cha  ne d'op  ratoire* or reduction sequence used to produce specific artifacts and assemblages.

Chapter 2 reviews (and distinguishes between) the natural and cultural processes that can alter the surface appearance of stone. Initial knapping techniques and their products are reviewed in chapter 3, and final tool shaping in chapter 4. Chapter 5 reviews cores and other debitage products, while chapter 6 offers a way to identify and classify the full range of retouch techniques. Chapter 7 provides a terminological lexicon relating to lithic technology, summarizing much of the same information provided in Michel Brezillon's 1977 publication, *La Dénomination des Objets de Pierre Taillée*. The text is followed by a multilingual vocabulary, with translations from English into Arabic, French, German, Greek, Italian, Russian, and Spanish.

This book provides a good introduction to the terminology of lithic analysis and is primarily directed at Palaeolithic archaeologists. Those of us who teach lithic typology and/or technology are always on the lookout for good background information. Unfortunately, the perfect textbook for such a course does not yet exist. This volume would be a good supplementary text for a course in lithic analysis, or for those interested in studying the replication of tool manufacture and use. However, it should be compared to current publications, such as those dealing with North American or indeed African stone age research, in order to achieve an adequate coverage of the current state of this field.

publishes *The South African Archaeological Bulletin*, which is the primary publication for current archaeological research in southern Africa. Periodically, thematic collections of papers appear in the society's *Goodwin Series*, and the society also produces a popular newsletter, *The Digging Stick*. Membership of the society includes subscriptions to these publications.

Authors of manuscripts on topics relevant to African archaeology, and who wish to have them considered for publication in *The South African Archaeological Bulletin*, should send three copies to The South African Archaeological Society, P.O. Box 15700, Vlaeberg 8018, South Africa. For 1994, individual subscription rates are R40 for South Africa/Namibia, R50 or UK£10 or US\$16 for the rest of Africa, and R72 or UK£14 or US\$23 elsewhere in the world. Institutional rates are available on request.

Journals

South African Archaeological Society

Judy Sealy, the Honorary Secretary of the South African Archaeological Society, has requested that *Nyame Akuma* call the attention of its readership to the Society's publications, particularly the *South African Archaeological Bulletin*. The following material was submitted by Dr. Sealy:

The South African Archaeological Society was founded in 1945 to promote archaeology through education and publication. Bi-annually, the society



MEETINGS

Compte-Rendu: VIe Colloque de l'Association Ouest- Africaine d'Archéologie (A.O.A.A.)

Cotonou, 28 mars-2 avril 1994

Pendant près d'une semaine, se sont réunis dans la ville universitaire principal centre économique de la République du Bénin, à Cotonou, une cinquantaine de chercheurs, de conservateurs de musées, et d'étudiants archéologie, venus de douze pays (Bénin, Burkina Faso, Cameroun, France, Guinée Mali, Maroc, Niger, Nigéria, Togo, U.S.A. et Zimbabwe). Le thème de ce colloque «Archéologie et sauvegarde du patrimoine» est d'actualité, particulièrement en Afrique de l'Ouest où la récente dévaluation qui a frappé plusieurs États membres de la zone C.F.A., aggrave les problèmes économiques auxquels sont déjà confrontées les populations.

Le lien entre la dégradation des milieux de vie (environnement) et celle du patrimoine archéologique, d'une part et, la crise économique généralisée, d'autre part, n'a pas échappé à la perspicacité des participants au colloque de l'A.O.A.A. Afin de poser des diagnostics assurés, une suite de trent communications a doté les débats d'un large éventail d'études de cas ou de définitions de concepts opératoires. Des travaux en commissions ont permis d'approfondir la réflexion et de dégager des résolutions sous forme d'énoncés de programme d'activités pour les deux années à venir. Un bilan des actions menées dans ce délai, sera fait à l'occasion du VIIe colloque qui correspondra au XX anniversaire de l'Association. En hommage à la République Fédérale du Nigéri qui l'a vue naître en 1976, l'Assemblée Générale réunie le 30 mars 1994, décidé que le prochain colloque et la commémoration auront lieu dans ce pays. Il se trouve aussi que la *Revue Ouest*

Africaine d'Archéologie, mieux connue sous le sigle W.A.J.A. (*West African Journal of Archaeology*) fêtera, à ce moment-là, so quart de siècle d'existence.

Un nouveau bureau exécutif de dix membres a été constitué, avec à sa tête pour la première fois dans l'histoire de cette organisation, une femme, Madam le Professeur M. A. SOWUNMI, de l'Université d'Ibadan (Nigéria). Par ailleurs l'Assemblée Générale a adopté des mesures énergiques de nature à assainir la gestion financière de l'association et à développer en son sein une éthique professionnelle plus grande. A cet sujet, l'A.O.A.A. collabore avec l'ICMA à l'élaboration d'un *Code de déontologie en matière de pratique archéologique et Afrique*. Avec son VIe colloque, l'A.O.A.A. prend un nouveau départ; il était temps, vu l'ampleur des tâches qui attendent les archéologues de l'Ouest africain.

On notera, avec intérêt, l'identification de trois thèmes majeurs d'intérêt régional ou sous régional retenus à Cotonou:

- archéologie funéraire
- habitats perchés d'Afrique de l'Ouest
- archéologie de l'esclavage

Des réseaux de chercheurs se constitueront autour de ces thèmes, placés chacun, sous la responsabilité d'un coordinateur—respectivement MM Boubé GADO, J. B. KIETHEGA, et B. W. ANDAH. L'association de dotera d'un *bulletin semestriel de liaison* et déploiera ses efforts vers la mobilisation des chercheurs et de fonds et aussi, pour la sensibilisation des pouvoirs publics, des administrations, et des communautés de base afin de réduire les agents de destruction qui entament dangereusement le patrimoine en surface ou enfoui.

Les participants au VIe colloque ont eu également à entendre les messages d'organisations-soeurs comme l'Association panafricaine de Préhistoire et des Études associées (P.A.A.) représentée par M. Gilbert PWITI qui a fait part à l'assistance de l'avancement de l'organisation de la conférence prévue à Harare en septembre 1995; la Société des Archéologues Africanistes (SAfA) et le Conseil des Arts de l'Association des Études Africaines (A.C.A.S.A.) représentés par le Professeur

Merrick POSNANSKY et le Congrès Mondial d'Archéologie (W.A.C.) représenté par le Professeur Bassey W. ANDAH.

Le colloque s'est achevé par une excursion organisée vers l'une ou l'autre des vieilles cités de Porto-Novo et de Ouidah où l'attention des participants a été portée tant sur les questions du patrimoine culturel (jardin botanique d'un côté, forêt relicte de l'autre, érosion côtière, etc.) que sur les problèmes de maintien et de conservation du patrimoine culturel physique (architectures locales, afro-brésilienne, coloniale; musées; collections historiques ou archéologiques, etc.). Au total, le VIe colloque s'est déroulé dans un atmosphère stimulante d'échanges et de franchise dans les propos. Malgré le moyens assez modestes dont a disposé le Comité national préparatoire, de conditions d'accueil et de travail décentes ont été offertes à chacun de participants grâce aux efforts conjugués du gouvernement béninois, d l'Université Nationale du Bénin et de quelques opérateurs économiques de place.

Enfin, signalons la parution (en prêtirage) des *Actes du Ve colloque—Di. ans de recherches archéologiques en Afrique de l'Ouest: perspectives de coopération régionale—(Ouagadougou, 27 juillet–1er aout 1992)* qui sont disponibles aux conditions suivantes:

- France et Europe Occidentale : 125 FF (tous frais compris)
- États-Unis et Canada: US \$ 25 (emballage et expédition compris)
Commande à passer auprès de
M. Obarè B. BAGODO
Trésorier de l'A.O.A.A.
B.P. 82
Porto-Novo (Bénin)
- mode de règlement, de préférence par mandat postal; en cas de paiement par chèque, prévoir les frais de transfert bancaire en sus.

Autres documents disponibles:

Répertoire provisoire des archéologues travaillant en Afrique de l'Ouest, 1993, Porto-Novo, AOAA/WAAA, 25 pp. (25 FF; US\$5)

Documents de travail du VIe colloque (Cotonou, 28 mars–2 avril 1994), AOAA/WAAA, 29 pp. (versions française et anglaise disponibles: 25 FF; US\$5).