EDITORIAL

I am pleased, but at the same time slightly daunted, to be asked to take on the editorship of NYAME AKUMA. Over the past ten years, Peter and Ama Shinnie have made it, in the minds of many, the model of what a newsletter should be. I hope that I shall be able to maintain their high standards.

At the May 1982 meeting of SAAAM it was agreed that we would not raise the cost of subscriptions unless absolutely necessary. I am relieved to report that we shall be able to maintain the present cost for at least another year, thanks to the generosity of the Vice-President (Academic) of the University of Alberta who has awarded us a grant of $1000 from his Discretionary Fund, and of the Department of Anthropology which has agreed to underwrite some of the computing costs now entailed in production.

Nonetheless, the situation is far from what I think it should be. At present we have 161 paid subscribers, 47 gratis subscriptions and 3 exchanges. Thus, our annual income amounts to just over $1600 and this is barely sufficient at present costs. Should these rise, as they undoubtedly will, we shall be in serious difficulties.

The problem is two-fold. First, there has been a marked drop in the number of North American subscribers. My impression, based on the records transferred to me by Peter Shinnie, is that most of these failed to subscribe once a charge was requested. Prior to that all costs were paid by the Department of Archaeology, University of Calgary. At present there are more subscribers from Europe and Africa than from North America - a curious situation in that NYAME AKUMA is supposed to be the official publication of SAAAM.

Secondly, a number of personal subscriptions have been cancelled in favor of institutional ones. While welcoming institutional subscriptions (which number 38 at present), I must emphasize that NYAME AKUMA depends upon a contributing readership. Those who read it only in the library are, I suspect, less likely to contribute. Furthermore, institutional subscriptions cost us more in labor, postage and materials since most are processed through agencies that require invoices.

In addition, to ensure continuing contributions, we have always sent reminders to subscribers in advance of publication. Not only does the increase in institutional subscriptions negate the effectiveness of this, but the cost is becoming prohibitive for the returns we actually get.

I wish to propose several solutions to these problems.

1. Most (if not all) of those who now receive gratis copies could pay for them with UNESCO coupons. If paid subscriptions do not increase we shall either have to discontinue sending gratis copies, or we shall have to raise the cost of a subscription. Sterling subscribers will note that we have already had to do this for subscriptions paid in sterling because of changing exchange rates.
2. I intend to establish a list of those who will continue to receive calls for material. **If you wish to be on this list please fill out and return the enclosed form as soon as possible.** It is clearly not productive to send the call to all subscribers as many are not active in African archaeology.
3. At the end of this issue is a list of all those who have not renewed their subscriptions in the past two years or for whom we no longer have correct addresses. I will appreciate receiving information, either from or about these individuals, so that I can remove their names from the list if they do not wish to re-subscribe

Please be sure to note the changed information for subscribers as well as the revised *Notes to Contributors*. I will appreciate receiving any suggestions on the proposals made here as well as on the new format which can be easily modified should there be sufficient demand.

David Lubell

SEFAR

Dr. Lech Krzyzaniak
Muzeum Archeologiczne
ul. Wodna 27
61-781 Poznań
Poland

The first season of systematic recording of difference archaeological remains in the Tassili-n-Ajjer was initiated by the Algerian-Polish expedition in October and November, 1981. The expedition was organized by the Office du Parc National de Tassili in Algiers directed by Mr. Sid-Achmed Kerzabi and the team from the Archaeological Museum in Poznan, headed by the author. The aim of the season was to test the proposed method of recording the rock art and other archaeological remains.

The well known area of Sefar, a part of the Tassili massif, was selected as a ground for this testing. The work of the expedition centred around the locality called *Cirque du Grand Dieu de Sefar* by Henri Lhote. The area under investigation was 1 km^2. All archaeological remains were recorded within this area on a detailed plan drawn in the field. In total, 50 assemblages of rock paintings and 15 remains of habitations were found. No rock engravings were observed.

The paintings were found under rock shelters (abri), a typical feature for the Tassili. They were photographed, sketched and described on special cards. The majority of these paintings show typical traits of the 'Round-Headed Men' style; the 'Bovidian' style was second in frequency. The tested area contains such well known assemblages of rock paintings as *Le Grand Dieu, Cirque des Totems* (camp site of the expedition), *Passage des Antilopes, Rue des Petites Mouflons, Cirque du Lion, Place des Panorama* and *Rue Donald.*

The remains of habitation within the tested area were mostly found beneath the shelters, often under the painted ones. Measurements of the size and descriptions of these habitation remains were made, as well as surface collections which were photographed and described. The habitations seem to be the traces of seasonal camps. They contain decorated potsherds, flaked stone implements (including arrow heads) and grindstones, ostrich eggshell beads, palettes and grinding stones for ochre, and even the pieces of ochre themselves (some with traces of grinding). This inventory was photographed and described. It seems that the typology of the pottery and stone implements is rather common to all remains of habitation in the tested area.

A continuation of field work in the Tassili is planned for several years to come. The next season will take place in the autumn of 1982.

RESEARCH IN PROGRESS ON THE CAPSIAN

Peter Sheppard
Department of Anthropology
University of Toronto
Toronto, Ontario
Canada

In this brief note, I will outline research which I am presently conducting on the Capsian.

Recent research by Lubell (1975, 1983) and Grébénart (1976) has revealed that within eastern Algeria (the Télidjène Valley) two distinct industrial variants or assemblages types (Capsien Typique and Capsien Supérieur) are definitely contemporaneous. The differences between these types are found primarily in the percentages of certain tool forms such as burins, backed bladelets and geometrics (cf. Camps 1974: 116). However, until recently (ca. 1969) a distinction was also made in terms of form and quality of workmanship (especially that of geometrics), since for most of this century Capsien Supérieur was seen as a development from the Capsien Typique (heavier tools developing into lighter microlithic forms). Although ^{14}C dating has destroyed this version of Capsian systematics developed by Vaufrey (1955) and refined by Balout (1955), there is now a void which must be filled, in part, by detailed analysis of a large sample of lithic artifacts from sites representative of both the time depth and geographical extent of the Capsian. Questions to be answered include:

1. What is the significance of the formal (morphology and 'workmanship') differences originally recognized as existing between Capsian Typique and Supérieur; or do they even exist?

2. What is the relationship between the Capsian Typique and Supérieur; do they represent distinct ethnic units or are they best understood as activity variants?

In an attempt to answer these questions I have collected attribute data on about 25,000 stone artifacts (cores, blades, burins, backed bladelets, geometrics) from 16 Capsian sites and one Libyco-capsian site (Haua Fteah). Not all of these

assemblages were excavated using full stratigraphic control (only 5 have relatively good vertical and horizontal control), however, they can all contribute, to one degree or another, to the investigation of the problems mentioned above.

To date only the study of blank production has been completed, yet it has provided new insights. Until Tixier (1976) published his study of the lithic material from Aïn Dokkara, little was known about techniques of blank production in the Capsian. Tixier concluded that there existed within the Capsian a pressure technique associated with the production of thin parallel-sided bladelets, as well as an indirect or direct percussion technique associated with the production of both blades and bladelets. Although he felt that the former technique might have chronological significance, he was unable to determine it (1976: 31).

Statistical analysis of the data available to me indicate that bladelets and cores characteristic of the pressure technique predominate in Capsien Supérieur sites which postdate 8,000 BP. I do not know if the same pattern holds true for the Capsien Typique although Tixier (1967: 27) indicates that he has found pressure bladelets in both Typique and Supérieur assemblages. Research is needed on Typique sites dated after 8000 BP. However, the definite Typique assemblages from which I have data (n=4), are all similar in blank technology to the pre-8000 BP Supérieur assemblages and, indeed, two of these assemblages are ^{14}C dated to pre-8 000 BP (the others are undated).

Why then did this technique proliferate at 8000 BP ? One hypothesis might involve the introduction of lithic heat treatment which could facilitate the use of a pressure technique. To test this, Larry Pavlish (Archaeometry Laboratory, University of Toronto) and I subjected 150 samples of burnt and unburnt bladelet fragments to thermoluminescence analysis. We hypothesized that if heat treatment had been systematically employed the unburnt speciments should have a TL output comparable to the burnt examples. Our result was negative, indicating that heat treatment was not a factor (Sheppard and Pavlish 1982).

Another possible explanation may in part be related to climatic change. It is apparent that about 8000 BP, much of North Africa and certainly the Capsian region, entered a period of hightened aridity (Lubell 1975, 1983), during which the Capsian subsistence base seems to have shrunk. Although I cannot explain this correlation between technology and climate, it seems possible that the spread of the bladelet technique (as a result of increased group mobility and flexibility ?) aided the formation of what Camps (1974: 157) has called a "koiné capsienne" or an homogeneous Capsian 'culture' throughout central Tunisia and central and eastern Algeria after 8000 BP. Regions which have previously been somewhat distinctive (as perceived by Camps 1974), suddenly become very similar in terms of tool percentages and tool form.

At present I am analyzing the data on formal tool classes, with particular attention to the problem of isolating stylistic variability. This research is to form the basis of my doctoral dissertation, and it has been assisted at all stages by Dr. David Lubell (University of Alberta) and Dr. Maxine Kleindienst (University of Toronto). I am also indebted to the Social Sciences and Humanities Research Council of Canada for support in the form of doctoral fellowships.

REFERENCES CITED

Balout, L.
1955 Préhistoire de l'Afrique du Nord. Paris: Arts et Métiers Graphiques.

Camps, G.
1974 Les Civilisations Préhistoriques de l'Afrique du Nord et du Sahara. Paris: Doin.

Grébénart, D.
1976 Le Capsien des Regions de Tébessa et d'Ouled Djellal, Algérie. Aix-en-Provence: Editions de l'Université de Provence.

Lubell, D. *et al.*
1975 The prehistoric cultural ecology of Capsian escargotières. Preliminary results of an interdisciplinary investigation in the Chéria-Télidjène region. Libyca 23: 43-121.

Lubell, D.
1983 Palaeoenvironments and epipalaeolithic economies in the Maghreb (ca. 20,000 to 5,000 BP). In, J.D. Clark and S. Brandt (eds.), From Hunters to Farmers: Considerations of the Causes and Consequences of Food Production in Africa. Berkeley: University of California Press.

Sheppard, P. and L. Pavlish
1982 The use of thermoluminescence (TL) in an investigation of heat treatment in the Epipalaeolithic of North Africa. In, Proceedings of the 1982 Symposium on Archaeometry, Bradford, England. (in press).

Tixier, J.
1976 L'industrie lithique de l'Aïn Dokkara, Region de Tébessa, Algérie. Libyca 24: 21-54.
Vaufrey, R.
1955 Préhistoire de l'Afrique. Tome I: Le Maghreb. Paris: Masson.

TATI ARCHAEOLOGICAL RESEARCH PROJECT, BOTSWANA

Catrien van Waarden
Department of Anthropology
State University of New York
Binghampton, NY 13901
U.S.A.

The first phase of the Tati Archaeological Research Project was successfully completed. This was a survey in the North East District, in part relocating and inspecting previously reported sites; in part a more systematic probabalistic search. A total of 99 sites were visited, including:

M.S.A./L.S.A.	2
Rock paintings	8
E.I.A. (-AD 700)	8
Zhizo (700-900)	8
Leopard's Kopje (950-1300)	6
Zimbabwe/Khami (1250-1800)	12
Refuge Period (1830-1890)	11
Historic African (1890-)	1
Historic European (1870-)	3
Gold mines (ancient & European)	9

A rescue excavation was necessary at a Khami period site through which the new Francistown-Plumtree highway was to be cut. After some testing, a strip 200m by 25m and more than 1m deep was cut away in clean 10cm layers by a heavy duty self-loading grader. Two cattle kraals were discovered, one with a vitrified dung deposit and the other with unvitrified dung. Six concentrations of burnt daga with pole impressions indicated house structures. Finally, seven burials (3 adults and 4 children) were recoveredd. The site also yielded a good sample of artifacts and faunal remains. This is the first commoner site from the 'Khami' State and hence of considerable interest.

Two seasons of excavation are planned:

1983 – two defensive sites of the 19th century (Domboshaba Hill and Duthu 1a Majambube);

1984 – two sites of the lower levels of the 'Khami' State heirarchy, representing a time of relative peace and prosperity.

The objective is to study the behavior of people under stress, in this case the stress of periodic raids by the Matabele; the earlier period will be studied for comparative purposes.

The 1982 survey was made possible through grants from Sigma Xi, the S.U.N.Y. Foundation, and a Doctoral Fellowship from the Social Sciences and Humanities Research Council of Canada.

ARCHAEOLOGICAL RESEARCH IN THE BAMENDA GRASSFIELD, CAMEROON

Jean-Pierre Warnier and
Raymond Asombang
B.P. 73
Yaounde
Cameroun

P. de Maret has previously reported in this journal (NA 17) several rock shelters of the Northwest Province of Cameroon (*alias* Bamenda Grassfields). More work has been done recently on the same sites by Raymond Asombang, Serge Morin and Jean-Pierre Warnier. In 1980, Warnier located two, so far unknown, rock shelters in the volcanic crater of Mbi (or Foleshele), which were visited again by Asombang and Warnier in October 1981. A test pit was dug in the largest one, which yielded lithic and bone material together with small shell discs. In December 1981, a field trip by Morin (a geomorphologist at the University of Yaounde) and Warnier was aimed at assessing the geomorphology and archaeological potential of all known rock shelters of the NW Province. The site of Mbi was selected for further research by Asombang, a Ph.D. student at the Institute of Archaeology, London.

The Mbi Crater rock shelter, 2080m altitude (6°05′18″N, 10°20′23″E) is located at the base of a cliff facing inside the crater. Its total surface is ca. 700m^2, 400 of which are occupied by archaeological deposits reaching a maximum thickness of about 2m towards the entrance. Asombang began his excavation in January 1982, opening ca. 20m^2. The archaeological material is extremely abundant, including ceramics in the upper levels, bone, shell, and stone artefacts (obsidian, basalt, rhyolite, quartz), human and animal coprolites, and well-preserved faunal remains. The deposits are dry except towards the entrance. Elsewhere, very little water percolates

from the ceiling and it is only slightly acid (pH 6). The excavations had to end after ten weeks due to administrative complications. They will resume in November 1982 for another four or five weeks. At face value, the material seems to cover the same periods found in the rock shelters of Abeke, Shum Lake and Babanki Tungo (LSA to Iron Age). However, the thickness and the quality of the deposits are far more promising at Mbi than elsewhere.

In April-June 1982, Asombang opened 12m^2 in the Shum Lake rock shelter previously explored by P. de Maret, uncovering a burial. He also excavated a 4m^2 test pit in the Babanki Tungo rock shelter which yielded a small amount of lithic material (the site has been heavily eroded and washed by water percolating from the ceiling). It is expected that in the coming two years Asombang will come up with a chrono-stratigraphy of the LSA-Early Iron Age that will compare with the material already collected and dated by de Maret.

Warnier is now undertaking a survey of the iron-smelting sites of the large iron industry of the Bamenda Grassfields with a view to obtaining a chronology for this industry in connection with the development of regional economic specialization and trade in the area. In December 1982, he will conduct an excavation at Fundong, on an open-air site in which a hoard of 18 polished stone axes was accidentally found three years ago. Judging from surface finds no lithic material except the usual crude basalt bifaces, but much pottery (one sherd with slag adhering) it is probably an Iron Age site.

A PROPOS DE L'ENVIRONNEMENT PREHISTORIQUE ET PROTO-HISTORIQUE EN EGYPTE: RECENTES RECHERCHES PALEO-BOTANIQUES EN HOMMAGE A MADAME VIVI LAURENT-TACKHOLM[1]

Colette Roubet
Sous-Directeur, Chaire de Préhistoire
Institut de Paléontologie Humaine
1, rue René Panhard
75013 Paris
France

Sur le thème de l'environnement préhistorique de très nombreux travaux sont entrepris en Egypte depuis une quinzaine d'années; mais ce n'est que depuis 1980 que je suis associée à ceux concernant la paléobotanique pré- et protohistorique.

Mes recherches se déroulent à l'intérieur de deux équipes multidisciplinaires:

- l'une permanente, constituée au Caire par l'Institut Français d'Archéologie Orientale (I.F.A.O.), dont les fouilles se situent dans la région de Kharga: oasis de Douch: 4ème mission du 15-XI au 12-XII-1981;
- l'autre temporaire, américano-polonaise, qui concentre ses efforts sur le chantier de Wadi Kubbaniya, au NW d'Assouan: 5ème mission du 21-I au 2-III 1982.

Douch, IIIe siècle av. J.C. au IVe après J.C., Epoques ptolémaïque et romaine

Douch est une petite oasis en région désertique, distante de plus de 200km à l'ouest de la vallée du Nil et de 115km environ au sud de Kharga. Le territoire qu'elle occupait jadis, notamment lors de la colonisation gréco-romaine, était assez vaste et verdoyent, comme l'attestent les nombreuses installations, sur tous les tertres environnants, qui vers l'est gagnent le piémont de la chaîne montagneuse et l'isolent ainsi de la vallée nilotique (Fig. 1).

Cette région, actuellement envahie par les dunes, connaît depuis le milieu de l'Holocène au moins, de très sévères conditions climatiques.

Aucun site épipaléolithique ou néolithique n'a été découvert (Fig. 1). Et pourtant la nappe aquifère la moins profonde n'était qu'à 20m de profondeur: c'est celle qu'exploitèrent les premières communautés paysannes qui transformèrent en parcelles irriguées ces plaines aujourd'hui inanimées. Cettle transformation soudaine que sut admirablement développer la colonisation gréco - romaine a provoqué le tarissement de cette nappe et l'on ne doit la survie de cette oasis qu'aux forages modernes qui permettent d'atteindre à plus de 1000m de profondeur l'autre nappe aquifère.

Les fouilles que l'I.F.A.O. conduit à Douch depuis 1976 intéressent un tell, vaste et haut, d'où s'élèvent les imposants vestiges d'une forteresse et ceux d'un temple (Fig. 3, en haut). Tout autour, et partiellement enterrées, subsistent les multiples traces d'occupation correspondant à des lieux habités, des aires de fabrication de poterie (ateliers de potiers), des espaces de cultures (champs et jardins).

Dans la plaine sableuse en contrebas, on distingue encore nettement les structures d'anciens canaux d'irrigation, souvent matérialisées par des conduites d'amenée d'eau, faites en céramique, aujourd'hui brisées. On repère ainsi les zones irriguées et l'étendue des terres cultivées (Fig. 3, en bas). Quel-

ques fragments de papyrus et les ostraca n'attestent-ils pas l'existence de cultures céréalières, de jardins et de vignobles ? Il reste cependant à prouver à l'aide de documents tels les macrorestes végétaux, soit en testant les nombreuses briques crues qui servirent à l'édification de cette haute forteresse, soit en analysant le contenu des jarres et amphores fermées, conservées dans de nombreuses salles enfouies sous le sable, soit en prélevant le contenu d'offrandes variées, découvertes dans les bâtiments.

Au nord du Tell, à 2km environ s'étend une très vaste nécropole. Les zones fouillées livrent un important ensemble anthropologique et archéologique, contemporain de l'occupation du Tell.

Parallèlement donc aux travaux de dégagement de la forteresse j'ai procédé à un relevé stratigraphique de ce tell et entreprise une étude générale de l'environnement avec la collaboration du Pr. Dr. Nabil el Hadidi.

Relevé stratigraphique

La succession lithologique (45 à 50m de hauteur) comprend dix niveaux, mais il importait de préciser:

- la position du banc de grès exploité pour l'édification du temple;
- la nature de l'assise sur laquelle s'élève la forteresse de bri ques;
- l'origine des pigments colorants, le lieu d'extraction de l'argile, etc.

Ce relevé a en outre permis de découvrir une très ancienne occupation du tell dans le secteur méridional. Il s'agit d'un poste de vigie dont les restes lithiques et alimentaires sont engagés dans un sédiment sablo-argileux. Un dépôt cendreux pourrait faire l'objet d'une datation. D'autre part, des vestiges botaniques, d'âge sans doute Holocène, ont été découvertes (Fig. 2, en bas).

Environnement de Douch passé et présent (Figs. 3, 4 et 5)

L'abondance des macro-restes végétaux et leur bon état de conservation laissent présager une reconstitution assez fidèle de l'environnement protohistorique et historique. Les prélèvements proviennent de sources variées telles:

a) les briques crues, argilo-silteuses qui renferment quantités de végétaux intacts (paille, noyaux, charbons, tiges, feuilles, etc.);
b) la vaisselle céramique non brisée, souvent obturée par des bouchons (stoppers) dont le contenu sableux comporte des résidus divers, témoins de l'emploi ultime de jarres, amphores, bouteilles, gobelets, etc.;
c) les poutres et linteaux en bois de palmier ou autres essences conservés en bonne place dans l'architecture;
d) les résidus d'offrandes, présents dans des niches murales, ou bien sous des paliers d'escaliers et qui se composent aussi de restes alimentaires (ossements et végétaux);
e) les foyers ou aires de combustion et de cuisson.

L'étude de l'environnement actuel portant sur un vaste territoire autour du tell répond aux exigences d'un "site catchment analysis" préconisé par E.S. Higgs. Ceci a consisté à échantillonner systématiquement le périmètre parcouru. Des sondages restent à effectuer pour compléter les informations recueillies. Le paysage actuel est charactérisé par un boisement relictuel de *Tamarix* et de palmier doum *Hyphanea thebaica*, qui survit au sommet de buttes sableuses (Fig. 4). L'acacia (*Acacia nilotica*) et le jujubier (*Ziziphys spina christi*), essences uniques dans ce périmètre, représentent des témoins de conditions climatiques beaucoup moins sévères. Sont attestées des graminées spontanées et cultivées. Mais rien dans un tel environnement désertique ne permettrait aujourd'hui la croissance et le développement des champs, de la vigne et des jardins.

Cette étude de l'environnement bimillénaire est entreprise avec la collaboration de Département de Botanique de l'Université de Giza. Les Professeurs A. Kassa, Nabil el Hadidi dirigent avec moi les recherches confiées à des étudiants égyptiens. [2]

Un séminaire a été organisé en janvier 1982 pour faire le point des questions soulevées et définir le programme des futurs travaux sur le terrain, en collaboration avec les archéologues de l'I.F.A.O.

Wadi Kubbaniya: Epipaléolithique ancien, 20 000

Non loin d'Assouan, à plus de 1000km au sud du Caire, se jetait jadis le troisième affluent majeur de la rive gauche du Nil: le Wadi Kubbaniya. A 2km environ de son embouchure furent découverts les premiers habitants épipaléolithiques par F. Wendorf et R. Schild en 1968. Mais, ce n'est qu'en 1978 que débutèrent les premières recherches. Invitée dans cette équipe américano-polonaise qui comprend divers spécialistes en botanique (Prof. Nabil el Hadidi, au Caire), en paléontologie animale (Dr. A. Gautier de Gand), en géologie (Dr. Bahay Issawi et Mohammed el Hinnawi, du Geological Survey du Caire) et en préhistoire, j'ai participé au deux récentes missions (janvier à mars 1981 et 1982) et aux fouilles des sites E-78-3, E-78-4 et E-82-1.

L'intérêt de cette région occupée dès la fin du Paléolithique est d'avoir préservé une longue série d'habitats entre le XVIe et le XXe millénaire BP auprès de bassins ou de lunes périodiquement en eau.

La stratigraphie des 40m de dépôts révèle l'existence d'un puissant ensemble alluvionnaire servant d'assise à une succession de 20m d'épaisseur constituée de sédiments éoliens et fluviatiles. La mise en place de ce complexe silto-sableux coïncide avec les premières fréquentations post-paléolithiques, datées de plus de 18 000 ans BP.

Les fouilles mettent au jour des structures d'habitat, des aires de combustion, etc. et livrent un abondant mobilier archéologique, ainsi que de nombreux restes alimentaires. La faune et la flore témoignent d'un environnement varié, favorisé par de bonnes conditions climatiques. Mollusques d'eau douce (*Unio abyssinicus, Lymnaea natalensis*), poissons (*Clarias, Lates niloticus, Tilapia,* etc.), mammifères et oiseaux, espèces aux exigences écologiques variées, confirment par leur présence l'existence de migrateurs capturés lors des haltes hivernales.

Chasses et pêches plaident en faveur d'une saisonnalité de l'habitat préhistorique et d'un biotope temporairement aquatique, et suffisant pour attirer de nombreuses espèces animales.

Mais ce qui fait l'originalité de ce faciès réside dans la mise en évidence de graines de céréales d'orge (*Hordeum vulgare*) non sauvages. On doit au Prof. Dr. Nabil el Hadidi cette information capitale, confirmée après avoir emploi du scanner par Dr. Ann Stemler et Dr. R.H. Falk.

Car désormais pour mieux interpréter les résultats concernant l'Holocène africain il conviendra de ne pas les couper du continuum culturel épipaléolithique qui s'amorce dix milles ans plus tôt en Egypte. En effet, en raison des mutations capitales qui s'opèrent là très précocement, il faut admettre une indéniable innovation dans le domaine alimentaire fondée sur l'introduction de céréales d'orge. Dès l'épipaléolithique on récolte donc, qui sait, on cultive peut-être ? l'orge et un tel changement s'accompagne d'une brusque apparition d'un outillage approprié au broyage.

Au cours de ces deux missions j'ai tout particulièrement étudie cette partie du mobilier archéologique. Meules, cuvettes de broyage, godets, d'une part, molettes, pilons et broyeurs, d'autre part constituent l'éssentiel de cet équipement d'emblée typique.

J'ai découvert et étudie plusieurs *ateliers de fabrication* de ce mobilier (E-82-1).

Toute cette documentation sera réunie dans un ouvrage de synthèse sur Wadi Kubbaniya.

Remerciements

C'est grâce à l'appui logistique de l'I.F.A.O. et des missions françaises et étrangères en Egypte que j'ai pu effectuer des recherches sur l'environnement pré- et protohistorique. Je tiens à exprimer mes remerciements au Directeur de l'I.F.A.O., Madame Paule Posener-Krieger, et aux Professeurs Kassas, Wendorf et Schild qui en sollicitant ma participation dans leurs équipes, m'assurent de leur généreux concours.

Ce thème d'étude est au programme de toutes les fouilles archéologiques en Egypte pour de nombreuses années encore et exigera bien d'autres missions de collectes d'informations et d'études.

Notes

1. Je souhaite m'associer à l'hommage rendu par mes collègues egyptiens de l'Université de Giza, et plus précisemment ceux du Cairo University Herbarium.
2. Toutes les déterminations botaniques ont été établis par M. Nabil el Hadidi et C. Roubet. La collection des macrorestes végétaux est déposés au Département de Botanique de l'Université de Giza au Caire.

BIBLIOGRAPHIE

El-Hadidi, N.M. (ed.)
1978 Taeckholmia, No. 9. Publications from Cairo University Herbarium. Otto Koeltz.
1980 Plant remains from Late Palaeolithic sites in Wadi Kubbaniya. In, F. Wendorf, R.Schild and A. Close (eds.), Loaves and Fishes: The Prehistory of Wadi Kubbaniya. Institute for the Study of Earth and Man, Southern Methodist University, Dallas.

Higgs, E.S. and C. Vita Finzi
1972 Prehistoric economies: a territorial approach. In, E.S. Higgs (ed.), Papers in Economic Prehistory. London: Cambridge University Press.

Roubet, C. and N. El Hadidi
1982 20 000 ans d'environnement préhistorique dans la Vallée du Nil et le désert égyptien: épipaléolithique et néolithique. L'Anthropologie 85(1): 31-57.

Stemler, A.B.L. and R.H. Falk
1980 A scanning electron microscopic study of cereal grains from Wadi Kubbaniya. In, F. Wendorf, R. Schild and A. Close (eds.), Loaves and Fishes. Southern Methodist University, Dallas.

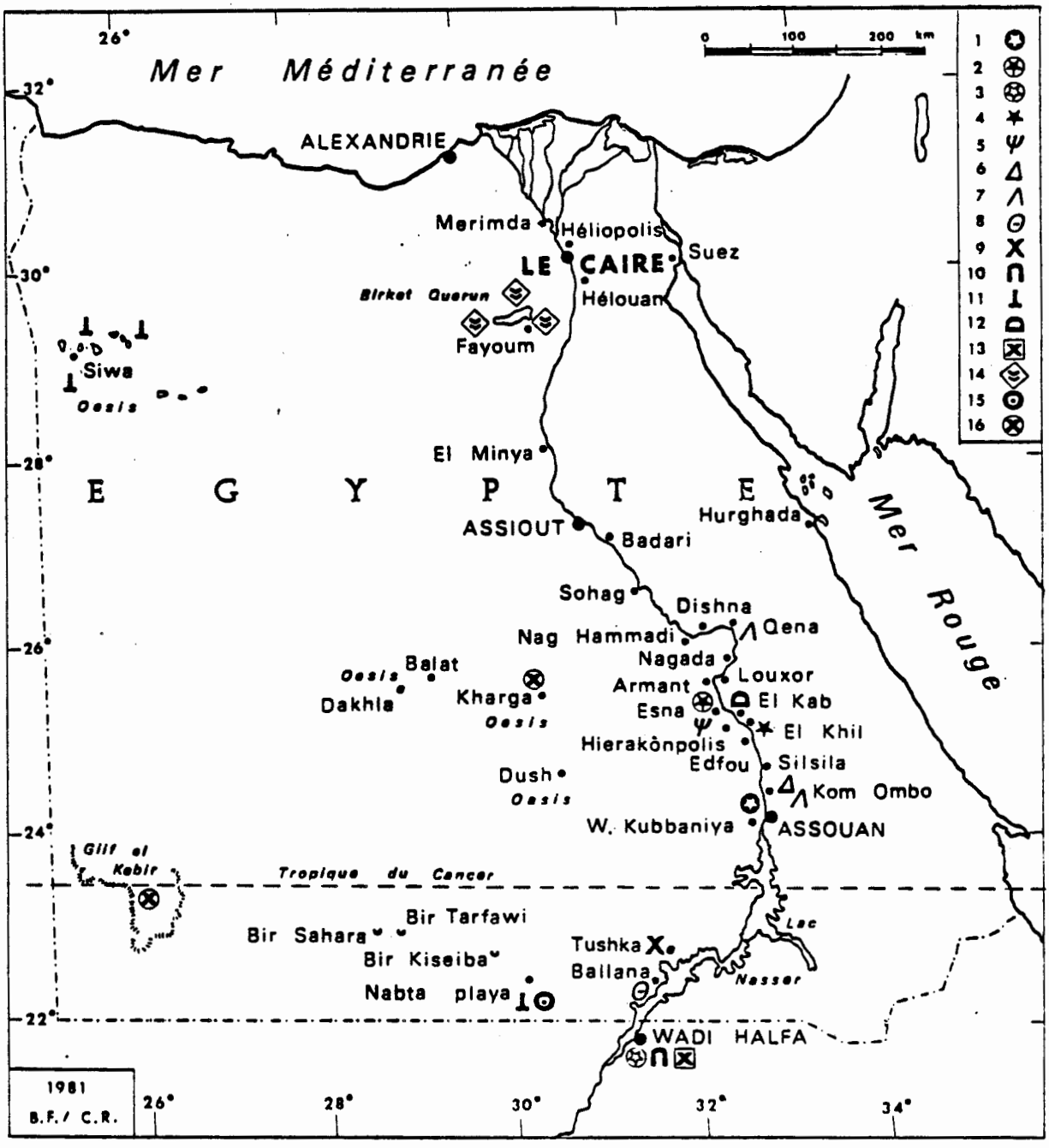

Fig. 1:
Principaux faciès culturels épipaléolithiques et néolithiques de l'Egypte et du Soudan septentrional (site éponymes).

Légende des symbols

(1) Kubbanien; (2) Fakhurien; (3) Halfien; (4) Edfouen; (5) Afien; (6) Silsilien; (7) Sébilien; (8) Ballanien; (9) Qadien; (10) Arkinien; (11) Siwaien; (12) El Kabien; (13) Shamarkien; (14) Quarunien; (15) Néolithique de Nabta Playa; (16) Kharguien

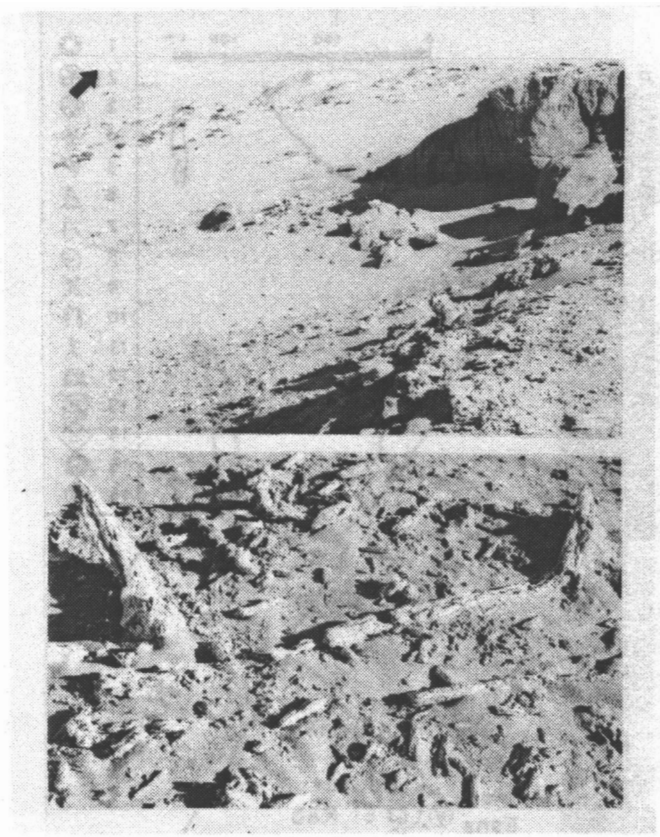

Fig. 2: L'aride plaine de Douch en Novembre 1981 (4ème mission)

En haut: On distingue l'aire de campement matérialisée par 11 tentes (flèche), hébergeant les chercheurs de l'I.F.A.O. du Caire. Le Tell de Douch, promontoire de 40m de hauteur, est stratigraphiquement constitué par des dépôts: limoneux à la base et finement lités (ainsi que la photo le montre), argileux puis gréseux et quartzitiques formant des bancs épais et des corniches nettes. Au premier plan subsiste un végétation fossile, érodée, mais déterminable.
En bas: Témoins in situ de cette végétation fossile. Tronc et racines érodés couvrent une aire de 16m^2. Les vestiges de ce micro-environnement peuvent êtres d'âge holocène.

Clichés C. Roubet

Fig. 3: Forteresse gréco-romaine Douch surveillant la plaine désolée en Novembre 1981 (4ème mission).

En haut: Au premier plan un buisson épineux, rare touffes verdoyantes d'*Alhagi maurorum*.
En bas: Vestiges du tracé d'irrigation de la plaine jadis cultivée. Ce tracé sineux des canalisations romaines épouse la faible pente orientale du Tell. Sur les crêtes argileuses indurées se développent de rares touffes de *Stipa grostis pungens* ou *Alhagi maurorum*.

Clichés C. Roubet

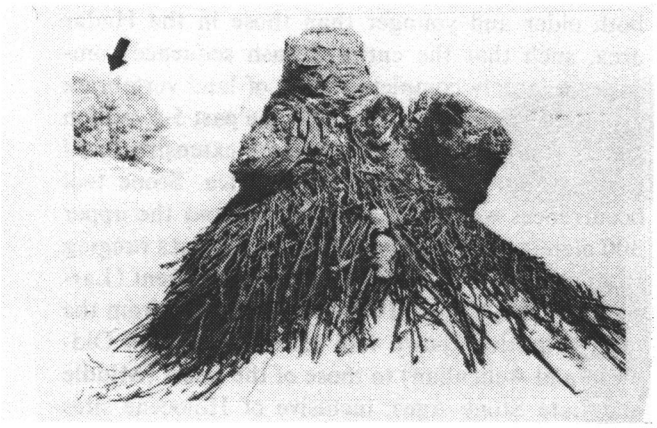

Fig. 4: Dans la plaine de Douch envahie par les sables méridionaux. Spectres dressés d'une végétation d'époque gréco-romaine.

Réseau radiciel majeur et moignons de trois troncs de Palmiers doum (*Hyphaena thebaica*). On distingue à gauche une touffe de *Tamarix nilotica* (flèche).

Clichés C. Roubet, Novembre 1981 (4ème mission).

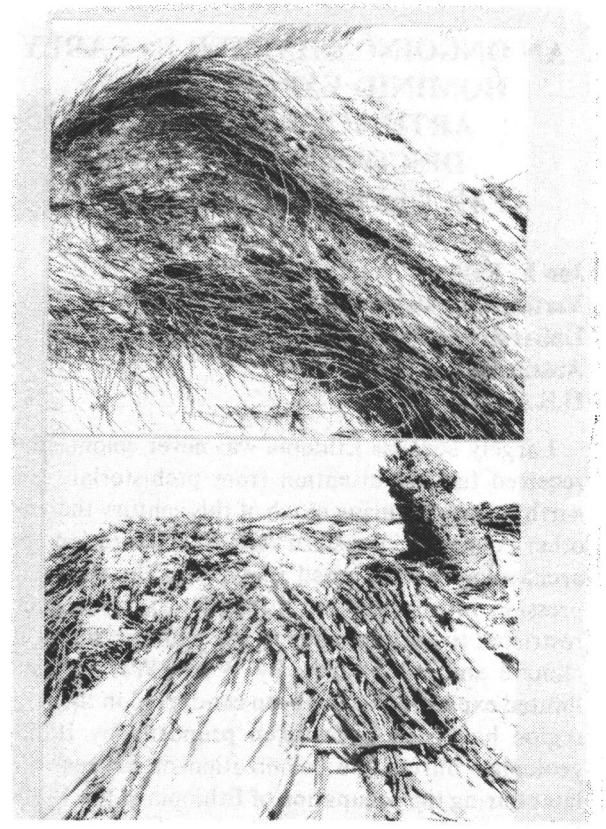

Fig. 5: Végétation relictuelle fixée au buttes sableuses et limoneuses.

En haut: Cette "Chevelure de Bérénice" correspond à *Stipagrostis pungens*.
En bas: Reseau radiciel majeur de plusieurs essences disparues; un tronc dressé de palmier doum subsiste à droite.

Clichés C. Roubet, Novembre 1981 (4ème mission).

AN ONGOING CHAPTER IN EARLY HOMINID EXPLORATIONS: ARTIFACT AND FOSSIL DISCOVERIES IN THE AFAR DEPRESSION, ÉTHIOPIA

Jon E. Kalb
Vertebrate Paleontology Laboratory
University of Texas 10100 Burnet Rd.
Austin, Texas 78758
U.S.A.

Largely because Ethiopia was never colonized, it received far less attention from prehistorians and earth scientists during much of this century than did other countries in eastern Africa. Explorations for archaeological and fossil remains in the Afar Depression in northeastern Ethiopia was even more restricted to outsiders due to the inhospitality of its climate and inhabitants. By World War II, what limited explorations had been conducted in the Afar region had been undertaken primarily by Italian geologists during the colonization of Eritrea, and later during the occupation of Ethiopia in the 1930s. By the 1960s, however, with the advent of international studies in oceanography and plate tectonics, attention began to focus on the Afar because of its unique features as a triple (rift) junction.

By the early 1970s, the uniqueness of the Afar became even more apparent with the discovery of vast fossil-bearing deposits in the Awash Valley. These finds, made by a French geologist, M. Taieb, and the author, led to the formation of the International Afar Research Expedition in 1971 (Taieb *et al.* 1972), which has become well-known for its work in the Hadar region and for such widely-publicized hominid discoveries as "Lucy", described by Donald Johanson (Johanson and Edey 1981).

In 1975, the author formed the Addis Ababa-based Rift Valley Research Mission in Ethiopia (RVRME), a multidisciplined team of Ethiopians and Americans authorized by the Ethiopian government to conduct investigations in largely unexplored areas in the Middle Awash Valley. During six field seasons (with intervening laboratory studies) spread out over a 40-month period, the RVRME surveyed and mapped an area of over 4,500 square kilometers and documented hundreds of fossil and archaeological occurrences throughout a total stratigraphic sequence over one kilometer thick (Kalb 1978). Recently completed stratigraphic and faunal analyses (Kalb *et al.* 1982b-e) indicate the fossiliferous deposits discovered are both older and younger than those in the Hadar area, such that the entire Awash sequence comprises a largely complete record of land vertebrate evolution spanning at minimum the past 5-6 million years, making it one of the most extensive fossil (and stratigraphic) records in Africa. Stone tool occurrences were discovered throughout the upper 300 meters of the Awash sequence in strata ranging from about 2-2.5 million years to the present (Larson 1977; Kalb *et al.* 1982c). These range from the most primitive known tool technologies (the Oldowan and Acheulian) to those of the latest (Middle and Late Stone Age), inclusive of Holocene sites containing ceramics. The most extensive tool industries represented are those belonging to the Acheulian Industrial Complex, which appear to be more extensive in the Middle Awash than any place yet described in Africa (Kalb *et al.* 1980; 1982c,d). In places, these are associated with occurrences of burned bone, suggesting some of the earliest records known of the use of fire.

The archaeological record in the Middle Awash appears to be one of the most continuous records of human cultural change known. The record of human habitation in the Middle Awash, documented by the occurrences of fossil hominids and/or artifacts throughout over one-half kilometer of strata, represents one of the most continuous records of human habitation known, spanning a period of some 3-3.5 million years. The presence of fossiliferous deposits antedating those in the Hadar area by at least 2-3 million years promises to extend this record yet further.

REFERENCES CITED

Conroy, G.C., C.J. Jolly, D. Cramer and J.E. Kalb
1978 Newly-discovered fossil hominid skull from the Afar Depression, Ethiopia. Nature 276:67-70.

Johanson, D.C. and M.A. Edey
1981 Lucy: The Beginnings of Humankind. New York: Simon and Schuster.

Kalb, J.E.
1978 Mio-Pleistocene deposits in the Afar Depression, Ethiopia. Sinet: Ethiopian Journal of Science 1(2):87-98.

Kalb, J.E., M. Jaeger, C.J. Jolly and B. Kana
1982a Preliminary geolgy, paleontology and palaeoecology of a Sangoan site in the Middle Awash Valley, Ethiopia. Journal of Archaeological Science (in press).

Kalb, J.E., C.J. Jolly, S. Tebedge, A. Mebrate, C. Smart, E.B. Oswald, P. Whitehead, C.B.

Wood, T. Adefris and Rawn-Schatzinger
1982b Vetebrate faunas from the Awash Group, Middle Awash Valley, Afar, Ethiopia. Journal of Vertebrate Paleontology 2(2): 22 pp.
Kalb, J.E., C.J. Jolly, A. Mebrate, S. Tebedge, C. Smart, E.B. Oswald, D. Cramer, P. Whitehead, C.B. Wood, G.C. Conroy, T. Adefris, L. Sperling and B. Kana
1982c Fossil mammals and artifacts from the Middle Awash Valley, Ethiopia. Nature 298:25-29.
Kalb, J.E., E.B. Oswald, A. Mebrate, S. Tebedge and C.J. Jolly
1982d Stratigraphy of the Awash Group, Middle Awash Valley, Afar, Ethiopia. Newsletters on Stratigraphy (in press).
Kalb, J.E., E.B. Oswald, S. Tebedge, A. Mebrate, E. Tola and D. Peak
1982e Geology and stratigraphy of Neogene deposits, Middle Awash Valley, Afar, Ethiopia. Nature 298:17-25.
Kalb, J.E., C.B. Wood, C. Smart, E.B. Oswald, A. Mebrate, S. Tebedge and P. Whitehead
1980 Preliminary geology and paleontology of the Bodo D'ar hominid site, Afar, Ethiopia. Palaeogeography, Palaeoclimatology and Palaeoecology 30:107-120.
Taieb, M., Y. Coppens, D.C. Johanson and J.E. Kalb
1972 Dépôts sédimentaires et faunes du Plio-Pléistocène de la basse vallée de l'Awash (Afar central, Ethiopie). Comptes Rendus des Séances de l'Académie des Sciences (Paris) 275:819-822.

NEW ACHEULEAN SITES AND A NEW HOMINID FROM KAPTHURIN, LAKE BARINGO, KENYA

Francis Van Noten
Koninklijk Museum voor Midden-Afrika
B-1980 Tervuren
Belgium

When Richard Leakey invited us to resume research on the Kapthurin Formation, west of Lake Baringo, an area where he and his family had worked in 1966 (Leakey *et al.* 1969), we did not realize that a new project there would turn out to be so promising so soon. [1]

After a first prospection tour in 1980, and a first series of trial trenches in 1981, work was concentrated this past summer on the most promising site, called the A site, which had been discovered during the 1980 tour. It is an area where beautiful Acheulean bifaces and cleavers could be picked up from a hill-slope surface eroding from just below the Bedded Tuff.

Earlier work in the region had revealed a ca. 100m thick formation consisting of three tuffs; the Bedded Tuff at the top, the Grey Tuff somewhere in the middle, and the Pumice Tuff at the base (Tallon 1978). Each of these tuffs were separated by thick layers of lacustrine silts and gravels. The Bedded Tuff and the Pumice Tuff had previously been dated by the potassium-argon method to ca. 0.23my and ca. 0.67my respectively.

The Leakeys discovered a hominid mandible which was described as belonging to *Homo erectus* (Leakey *et al.* 1969). Their work also revealed a very evolved stage of Acheulean in which blade production and early Levallois technique (Victoria West) were both common.

THE A SITE

The excavations in 1981 and this past summer revealed a main occupation site situated right below the Bedded Tuff. The artifacts were contained in a layer with calcrete nodules. Numerous fragments, mostly highly comminuted, of eggshells from various birds including ostrich were found. Few of the artifacts are classic tools, as they were not made into what typologists would call tools or implements. Almost the entire excavated industry consisted of flakes, blades, and what is generally considered as waste material. Almost no cores were discovered. It is not yet possible to say whether we have here a flake industry, or if we excavated only the waste while the well made tools are still to be found elsewhere. Microwear analysis will show if the flakes had been used without being shaped, or if they are really what they look like: unused waste material. Microwear analysis should also give us some hints as to which materials were used, so long as the raw materials left traces. This is likely to be rewarding for chert and obsidian, but perhaps not for rhyolite which is by far the most common rock. The industry will also be refitted to its maximum extent in order to understand the dynamics of the site. In doing this, we should be able to distinguish the places where the artifacts were manufactured, used and discarded, and thus define activity areas. The great variety of other excavated materials, such as the highly fragmented bone assemblage, suggest to us a short term camp. The site seems to extend from the bed up the banks of a dry river. Pebbles picked up from the river gravels supplied the raw material for tool manufacture.

Here again, the refitting should tell us how the banks are related to each other and to the river bed.

THE HOMINID SITE

In order to understand the Kapthurin Formation better, we organized regular prospection tours. On one of these, John Kimengich from the National Museum of Kenya, came across a rich fossiliferous horizon just below the Grey Tuff. On 4 August we visited this site, and among the remains of hippopotamus, large and small antelope, hyaena, buffalo and rodent, we discovered a nearly complete hominid mandible. This site, 33m below the top of the Bedded Tuff, also produced a number of fresh artifacts including two large choppers in absolutely mint condition. Next to them, eroding from the deposit, were a couple of trimming flakes which could be refitted to the choppers, thus proving that the site was in situ. Close by were lying the bones of at least three different animals; one hippopotamus and two antelope. The choppers may well have been used to dismember the carcasses, although one normally thinks of a butchering site as containing the remains of only a single animal.

The hominid mandible was rather well preserved, unbroken with only the thin ends missing, of which one fragment was recovered less than a meter away. We were struck initially by the extreme wear on the teeth which has left almost no enamel on the very narrow and long incisors (and we therefore called our hominid "Mz22 Augustus"). We noticed also the large size of the premolar and the typical molars. Professor Michael Day, who happened to pass by two days later, confirmed that we had discovered another typical *Homo erectus* which he called 'primitive'. A few days later we were pleased to have a visit from Mary, Meave and Richard Leakey who confirmed our feelings about the potential of the Kapthuran Formation. Screening the earth from the slope on which we found the mandible produced two teeth from the upper dentition. As we think these teeth came from the same individual as the mandible, we wonder what has happened to the skull. If it was fossilized at the same time as the mandible we may still expect to find it. If it was eroded from the deposit some time ago we may find fragments of it in the stream downslope.

In view of the 'primitive' character of the mandible, and the fact that the associated fauna might be of early Middle Pleistocene age, it now seems that the Kapthurin Formation must cover a much longer time period than previously thought.

Notes

1. We thank the Belgian National Science Foundation (N.F.W.O.) for its grant toward this expedition. Further funds came from the Belgian Center for Archaeology in Africa.

REFERENCES CITED

Leakey, Margaret, P.V. Tobias, J.E. Martyn and R.F. Leakey
1969 An Acheulean industry with prepared core technique and the discovery of a contemporary hominid mandible at Lake Baringo, Kenya. Proc. Prehist. Soc. 35: 48-76.

Tallon, W.J.
1978 Geological setting of the hominid fossils and Acheulean artifacts from the Kapthurin Formation, Baringo District, Kenya. In, W.W. Bishop (ed.), Geological Background to Fossil Man in Africa, pp. 361-373.

ARCHAEOLOGICAL OBSERVATIONS IN THE GAMBIA: 1982 (KOMBO ST. MARY AND WESTERN DIVISIONS)[1]

Matthew H. Hill
University of Waterloo
and Royal Ontario Museum

During the second and third weeks of June 1982, I made brief examinations of sites, mainly shell middens, along the bank of the Gambia River and its affluent bolons (creeks), from Banjul upriver to Bwiam. Most of the sites visited had been recorded by Geocon Lavelin, consultants to the Gambian Government, in a survey for sources of road metal.[1] In the virtually stoneless Republic of The Gambia, shell has traditionally served this purpose. My reconnaisance was intended to assess the potential danger to archaeological resources posed by such exploitation.

Since this research was carried out incidental to a visit to The Gambia for the purpose of developing, in concert with the Gambian Monuments and Relics Commission, future research plans; both time and resources including transport were limited. It was impossible for me to visit all of the sites noted by the consultants, but special effort was made to examine some of the following which are regarded as primary potential sources of shell (those prefixed by an asterisk were visited).

Designation[a]	Name [b]	Coordinates[c]
CS 14	Karanai	762 626
*CS 15	Santangaba I	773 632
*CS 16	Santangaba II	773 638
*CS 17	Gibinak	773 620
CS 21	Dubong	840 647

[a] The designation CS for Cockle Shell, followed by a number apparently indicating the order of discovery is used in the preliminary report and as a map reference. I have retained this usage.

[b] The name given is that of the nearest village, as given on 1/125,000 maps (1966 series) of the Gambia

[c] Coordinates are given using the Universal Transverse Mercator Grid System, explained on all recent 1/50,000 maps of the Gambia.

All of these sites are described, in manuscript notes on file at the Lands Office, as having 20 to 80cm of sterile overburden above the shell deposit. Those which I visited and, according to information received, CS 14 as well, are below present high tide line. Based on examination of the spoil from a number of geological test drillings, these sites contain no cultural material. The shell involved is almost exclusively *ARca*, while ancient cultural sites are typically mixed (modern market exploitation of shellfish does result in virtually homogeneous deposits). No pottery is present, the matrix is quite unlike that of cultural shell deposits, and significant numbers of the valves are still in articulation. I conclude from this that these sites are probably natural and their exploitation will not have an unfavourable impact on archaeologial resources. Taphonomic study and dating of these deposits, however, might materially advance understanding of the recent geological history of the Senegambian coast.

Even if the above conclusions are correct, and examination of the Dubong and Karanai sites is needed to verify them, it is clear that current exploitation patterns have a massively destructive effect on cultural shell sites. As long as there is a demand for shell as a building material, sites which can be reached from the land face continuous threat from small scale but persistent digging for shell. Conservation measures to ensure the preservation of some portion of these sites, and rescue excavation of some of the most threatened, should be considered. A number of the sites visited appear to be tiny remnants of formerly extensive artificial deposits. Others are substantially intact, but none is without evidence of exploitation for shell.

Brief site report forms and descriptions of sites visited as well as the limited collections made, are on deposit with the Cultural Archives of the Republic of Gambia. Some soil and shell samples have been sent to Canada for study. The following list briefly summarizes my observations. The conventions used in the previous table apply here as well.

CS 1–Oyster Creek

This site, first reported by me in 1974, is now being removed by lorryloads, with the help of mechanical equipment. Little if any of it is undisturbed. The area is littered with pottery and human bone, indicating its former richness. No artifact collections were made here in 1982.

CS 2–Old Jeswang CK 206 881

While it appears that a major site may have wholly disappeared here, there remains a fair sized island of shell, between the rice fields and the mangrove, which has been only slightly damaged. I refer to it as:

Kanifing East CK 205 871

A small collection of pottery from the surface includes sherds with an internal flange for support of a lid. This form is characteristic of the well known site of Dioron Boumak in the Saloum Delta. A possible date for this pottery may be well before AD 1000.

CS 3–Mandinari I CK 263 798

Approximately bisected by a drainage canal, this relatively large midden is bounded on the land side by rice fields, on the remaining sides by mangrove and the bolon. The eastern section has been extensively pitted by shell diggers, the western section is relatively intact. Geological evaluation pits reveal up to a metre of shell deposit in some places. Surface collections from both eastern and western sections reveal a variety of pottery, including numerous sherds of forms associated with Dioron Boumak. Since Mandinari already forms part of the "tourist circuit" it might appropriately be considered as a location for a display illustrative of shell mound archaeology.

Mandinari Southeast A

This site is probably, though not certainly, the same as CS 5 Mandinari III CK 284 773. Occupying the southwestern tip of a peninsula southeast of Mandinari Village, this large site has been only slightly pitted, relative to its size, along its northern edge. Considerable amounts of typical Dioron Boumak pottery are included in the surface collections from the site.

Mandinari Southeast B

A much smaller site, about 200m northwest of Mandinari Southeast A, this is perhaps also part of CS 5. The inland half of this site has been heavily pitted, but the remainder is relatively intact.

CS 8 Kubun I CK 264 724

A relatively small site, like the above two it is continuous with the sandy mainland. Most of the site has been disturbed, but it appears to have a relatively deep deposit along the inland side, and Dioron Boumak sherds.

CS 13 Kafuta CK 403 604

The nature of this site is uncertain. Portions of it may be the remains of a heavily mined natural deposit, the remainder may represent virtually modern shell deposition. Only three sherds were found, without clear context. Unlike the majority of shell deposit pottery, these are not shell-tempered. The significance of this is ambiguous (see below), but it suggests a relatively recent date.

Non-CS sites

More or less extended observations were made at three other sites. Only one of these, Abuko, is a shell deposit and it is not included in the listing of possible road material sources.

Abuko CK 322 818

This huge site, well in excess of 200m by over 100m, has been substantially disturbed over much of its extent. Portions of it appear to be relatively intact, and in even the disturbed portions up to 2m of cultural deposit is evident in the sides of the numerous wells dug into it for the irrigation of gardens. Dioron Boumak related pottery is widely evident. No collections were made.

Somita West CK 573 602

Two hundred metres west of kilometre post 78, somewhat west of Somita, the Banjul-Mansa Konko road cuts through a midden deposit, evident in the cut bank along the south edge of the road. Abundant shell is evident in the cut bank for about 50m, and pottery and shell can be found in scattered areas for about 50m south of the road. A sample of pottery, two iron objects, and two bottle fragments were collected. The bottle fragments are quite different. One is a fragment of what appears to be a "blob top" hand blown bottle dating probably no later than the early 19th century. The second is the base of a late 19th or 20th century medicine bottle, with molded coding.

The pottery from this site is closely comparable to that from Kafuta mentioned above. None is shell-tempered, although shell was clearly available to its users and some appears to be textured by rolling a *Tympanotonus* shell over the surface. It is much thinner and harder than the shell-tempered pottery found in the shell deposits. Clearly, time difference may be involved here, but neither the temporal nor the geographic distribution of these pottery wares is well understood. It may be noted that Linares (1971) mentions that some Casamance Diola have given up the making of shell-tempered pottery in favour of imported, sherd-tempered pottery from Fogny, which is apparently punctated.

Mandinari Southeast C CK 279 782

About 1.3km along the track trending southeast from the east end of Mandinari VIllage, on either side of the track, pits have been excavated into an old midden to obtain shell for building. Roughly 50cm of deposit is exposed at one point.

Two bottle fragments and one portion of a European stoneware container suggest a tentative dating of not later than mid-19th century. Although the pottery is shell-tempered and shares surface treatment motifs with that from the immediately coastal shell sites, it is predominately different in form. No Dioron Boumak style rims were seen.

Conclusions

Although it seems at this point that the deposits of shell which are most likely to be exploited for roadwork are not of archaeological importance, the final report of Geocon Lavelin to the government should be studied further. My information is based upon preliminary reports and extracts only.

Under the best of conditions, pressure for building material from the private sector will continue to lead to destruction of sites. A programme of identification and testing of threatened sites, coupled with conservation of a sample of sites, is desireable for the development of an understanding of cultural development in Senegambia.

It is clear that a complex history of change is represented which involves not only time, but geographic, economic and other sources of variation. The sites included here seem at first examination to vary concomitantly in their relation to geography and time. Mandinari C and Somita, both slightly inland, appear to be more recent than the others. On a larger geographic scale, the sites reported here are in some ways intermediate between those of the Saloum Delta to the north and Casamance to the south. The importance of Dioron Boumak pottery forms approaches that seen in the Saloum —

(increasing variation is to be seen there, with growing information–e.g. Descamps and Thilmans 1979), but, more like Casamance, shell burial tumuli do not seem to be present along the Gambia. It is possible that tumuli do exist on sites more isolated from the shore. Such sites are known but not yet fully reported (unpublished research of Thilmans and Descamps, Martin and Becker). As well, since human bone was observed at both Abuko and Oyster Creek, now obliterated tumuli may formerly have existed at these badly damaged sites.

Notes

1. Research reported here was supported by the West African Exploration Fund of the Royal Ontario Museum. The continuing support of this fund and its donor, who wishes to remain anonymous, is gratefully acknowledged.

2. Information concerning shell deposits under consideration as sources of road building material was derived from reports and manuscripts on file in the Geological Laboratory, Lands Office. The cooperation of this office and especially John Riegle is much appreciated.

REFERENCES CITED

Descamps, C. and G. Thilmans
1979 Les tumulus coquilliers des Iles du Saloum (Sénégal). Bulletin de Liason, Association Sénégalaise pour l'Etude du Quaternaire Africaine 54-55: 81-91.

Linares de Sapir, O.
1971 Shell middens of Lower Casamance and problems of Diola protohistory. West African Journal of Archaeology 1.

ARCHAEOLOGICAL RECONNAISSANCE AND EXCAVATIONS IN THE SHAI HILLS, GHANA

James Anquandah
Department of Archaeology
University of Ghana
PO Box 3, Legon
Accra, Ghana

In Previous issues (NA 12 & 15), preliminary reports were made of excavations undertaken in 1977/79 at Ladoku (5°45′15″N, 0°05′E), traditionally known as the ruins of the old Dangme township of Lę/La. Oliver Davies and Paul Ozanne reported in the 1960s on the ruins of Iron Age settlements in the Shai hills, located 11km northwest of Ladoku. Oral traditions documented in 1978-79 in Dangmeland have identified the Shai hill ruins as the remains of the old Dangme township called Sę/Shai, contemporary with Ladoku.

Shai is noted for its picturesque chain of hills which extend over 10km roughly in a N-S direction (5°51′N to 5°56′N; 0°02′E to 0°05′E) and rise to a peak height at Pianoyo Hill (948ft ASL). The hill area has been declared a game reserve and this has helped preserve the archaeologial remains.

The 1950 Ordnance Survey map names 25 component hills within the Shai complex. Custodians of Shai oral traditions presently living at the modern Dangme town of Doryumu located in the valley below, 2.5km west of the Shai hills, have identified the 25 hills as the village settlements which together made up the old Dangme town of Sę/Shai.

In 1892, the British Colonial Administration compelled the Dangme Shai to abandon their hill town because of their alleged practice of tradition customs associated with ritual murder.

Geologically, the Shai hills are characterized by inselbergs belonging to the Pre-Cambrian Dahomeyan series. The acidic and basic rocks of the area are rich in gneiss, garnet and hornblende. Although the soils are unsuitable for major farming, they are rich in clays suitable for making ceramics.

Between August 1981 and January 1982, a reconnaissance survey was undertaken by the author at selected sites within the Shai hills, including Mampong, Adwuku, Tetedwa, Nanne, Pianoyo and Hioweyo. Large quantities of previously known pottery types were collected which have been dated by radiocarbon in stratified Ladoku contexts. These include "Cherekecherete ware" dated to the 14th-15th century and 17th-18th century "Shai ware". Cherekecherete ware was identified at Mampong, Adwuku, Tetedwa and Pianoyo. Shai ware was widespread at Adwuku and Hioweyo. The highlight of the survey was a visit with local guides to the ruins of the old Dangme Royal Palace at Hioweyo, reputed to have been the residence of the Shai chief, La Nimo. The remains of a complex of in situ rectangular mud structures were recorded. A large midden to the west and southwest of the Palace was examined, and several artefacts were discovered including local domestic pottery, 9 cowrie shells, 5 pieces of European clay pipes, pieces of imported European pottery and 1 glass bead.

Studies conducted on the ancient Shai hills settlement potting industry by European visitors (Meredith 1812; Riis 1839; Windmann and Di-

eterle 1848; and other missionaries 1853; Kimble 1962) supported by recent ethnographic work on the contemporary Shai Valley settlement potting industry at Doryumu and Kodiabe by Quarcoo (Quarcoo and Johnson 1968), indicate a large measure of continuity in Shai potting traditions from the Iron Age hill settlements of the 14th to 19th centuries to those of today. The surface collections from the archaeological reconnaissance appeared to confirm this.

In February and March of 1982, the first of a planned series of test excavations was carried out by the writer at Adwuku Hill and Hioweyo Hill. The principal objectives of the projected excavations are:

a) to obtain a general chronology of the Iron Age settlements at Shai;
b) to study the extent, morphology and general pattern of settlements at Shai, and especially to ascertain the possible functions of various domestic and fortification works built of stone and mud;
c) to enquire into the character and evolutionary history of the principal technological and industrial traditions of Iron Age Shai, especially as regards pottery, iron working, cloth making, bead making and the production of smoking pipes;
d) to enquire into the nature of the evidence for subsistence and cash economies at Shai and thus;
e) ultimately build up data (geographic, demographic, socio-economic) for evaluating hte urban or sub-urban character of Iron Age Shai in relation to Iron Age Ladoku.

Summary of test excavations

Hioweyo Hill

A derelict circular hut site with a quantity of whole pots and a grindstone left in situ was excavated. A large quanitity of Shai ware decorated with impressions and incisions, and treated with red slip and some smoke glazing was recorded on the surface and in the two main occupation levels to a depth of 65cm. Interesting examples were found of sherds decorated with a potter's trade mark depicting a sun motif. The mark has also been found by the author in 17th/18th century levels at Ladoku, and by Thurstan Shaw at Dawu, Akuapem (Shaw 1961: plate xxxiv, nos. Giva and Gva). There is thus a suggestion that Iron Age Shai probably marketed its pottery widely in the Accra Plains and Akuapem.

A large amount of fauna was recorded, including bones and teeth of cattle, sheep/goats and antelope, and shells of *Arca senilis* and *Ostrea tulipa*, all suggestive of a mixed economy. Fragments of iron slag, a stone bead and three bauxite beads attest to a variety of local industries.

A number of smoking pipes were found. The surface produced examples of types 2a and 2b of Ozanne's (1965a) type series which are dated relatively to ca. AD 1670-1690. The upper and lower levels contained types 1a and 1b which are dated relatively to ca. AD 1640-1660.

Adwuku Hill

Ozanne (1965b) had examined a number of stone circles at Akwuku hilltop and described them as working floors of a pottery factory. The stone circles are paved on the inside with hard red-slipped clay tiles. A cluster of these circles was studied at South Adwuku, and two were test excavated to bedrock (one with a diameter of 4.2m and the other with an 8m diameter). It was evident that these structures probably constituted a single family compound and that they had most likely been circular mud huts erected on stone foundations and provided with tiled floors.

It appears the tiled-floor huts were in use in the 18th/19th century since they had completely sealed off 17th century occupation levels containing remains of domestic debris including daub, sherds of Shai ware, charcoal, ash, bones and teeth of domestic cattle, sheep/goats, dog, chicken, marine fish and mollusca (*Arca senilis, Pitaria tumens*) as well as five specimens of 17th century smoking pipes (types 1a and 1b) stratified below five specimens of type 2.

It is hoped to resume field work at Shai when the 1982/83 dry season opens.

REFERENCES CITED

Anquandah, J.
1980 Traditional potting and the pottery trade in Shai (Ghana) - an ethnoarchaeological study. Unpublished paper presented to the Aggrey Memorial Society Conference at Sierra Leone.
1982 Rediscovering Ghana's Past.

Davies, O.
1976 Ghana Field Notes, Part 4 (Southern Ghana). Cyclostyled Monograph, Department of Archaeology, Legon.

Kimble, D.
1962 Political History of Ghana. London: Oxford University Press.

Meredith, H.
1812 An Account of the Gold Coast of Africa.
Ozanne, P.C.
1965a Tobacco pipes of Accra and Shai. Bull. Inst. African Studies No. 1, Legon.
1965b Adwuku, a fortified hill-top in Shai. Ghana Notes and Queries 7: 4-5.
Quarcoo, A.K. and M. Johnson
1968 The pottery industry of the Shai people of southern Ghana. Baessler-Archiv, Neue Folge, Band 16. Basel.
Riis, A.
1838 Der Evangelische Heiden Bote. Basel.
1853 Magazin fur Die Neutse Geschichte Der Evangelischen Mission - Und Bibel - Gesell - Schaften. Basel.
Shaw, T.
1961 Excavation at Dawu.
Windmann and Dieterle
1848 Basel Mission Archives.

ARCHAEOLOGIAL SURVEY OF THE KROBO MOUNTAIN ANCIENT SETTLEMENTS

Dr. J.N. Debrah
Director, Ghana Museums & Monuments
PO Box 3343
Accra, Ghana

The Krobo Mountain ancient settlements (0°05′E–6°20′N) rest on top of a mountain about 350m ASL. Two large areas, separated from each other by a valley into northeastern and southwestern portions, were inhabited by the Manya and Yilo Krobo respectively.

In 1976, the Ghana Museums and Monuments archaeological research team carried out preliminary archaeological survey of the northeastern side. Due to problems of equipment and personnel, the survey was only recently resumed and, from April to June 1982, it was extended to the southwestern portion occupied by the Yilo people.

Oral histories were collected on both sides and, although no date could be obtained for the occupation, it was determined that the site was abandonned in 1892. Some of the more interesting features of the areas surveyed are the rock shelters and caves which were apparently inhabited; the grinding stones and hollows; the partially collapsed rectangular dry-stone buildings; and the mounds.

Most interesting are the scatter of potsherds and pottery of different types. No excavation was conducted, but a large surface collection of sherds was made. Documentation of the monumental remains was also begun.

Stone buildings of this magnitude are uncommon in Ghana and, therefore, the subject has generated considerable interest. Joint studies are planned which will link historical and archaeologial investigations into the origins of the Krobo people.

EXCAVATIONS AT DABOYA GHANA 1982

P.L. Shinnie
Department of Archaeology
University of Calgary
Calgary, Alberta,
Canada T2N 1N4

Work at Daboya, initiated in 1978 (NA 13:10-11) and continued in 1979 (NA 15:20-22) was re-started in May 1982 with a team consisting of Professor and Mrs. Shinnie, Dr. F. Kense, Miss D. Wallsmith (Simon Fraser University), Mr. R. Lazenby, physical anthropologist (Simon Frazer University), and Messrs. S. MacEachern, I. Robertson and Mohy el Din Zarug (graduates and graduate students from the University of Calgary).

This was not the easiest year to be in Ghana and as a result of the coup of 31st December, a number of new regulations were in force and many commodities previously available had vanished from the market. Political events did not seriously affect the organisation of the expedition and lack of imported foods meant greater reliance on local products with no diminution in efficiency. The main party led by Dr. Kense arrived in Ghana in mid-May expecting that the new vehicle would arrive at about the same time. Owing to shortage of shipping between Britain and Ghana it did not arrive until two months later and the Shinnies were kept in Accra for one month awaiting its arrival.

In spite of delays and logistic problems, the main aims of the project were achieved. These were:

(1) to survey a rectangular area to the north and west of the present town where all previous excavation had been concentrated;
(2) to investigate Kintampo neolithic occupation, hints of which had been discovered in the earlier work; and
(3) to open up a wide area within the present town to examine Iron age settlement with special at-

tention, if it could be identified, to the period of the Gonja occupation.

The first objective was largely completed by walking through the thick bush on a series of parallel transects and digging trial pits at selected intervals - the results did not show that there had been heavy concentration of occupation in any area away from the town, though traces of human activity in the form of sherds and stone flakes were found in most of the trial pits. The second objective was successful in finding clear evidence of Kintampo occupation, and sufficient type artefacts of the Kintampo culture were found ('cigars', typical pottery, arrow (?) heads and ground stone axes). The third objective, delayed by Shinnie's late arrival, had to be modified. It had been planned to clear an area of 20×20 metres but delay making this impossible, the area was drastically reduced and a series of 1 metre wide strips were excavated in a square of 10×10 metres; the identification of DbH has been given to this square. An open area near to the middle of the town was selected for this excavation and it was discovered that there had not been continuous occupation at this place throughout the long period now known at Daboya and that, based on the approximate dating obtained from previous work, the area was not occupied from the sixteenth to the nineteenth centuries. The predominant pottery ware suggests occupation prior to AD 1000 and subsequent to AD 1900. The main occupation thus pre-dates the arrival of the gonja and for reasons at present obscure, the area remained unoccupied until recent times - there is a tradition today that it is a sacred area, and the annual 'Damba' festival takes place here. No occupation is now permitted though in the 1930s a compound was built in the area. Little trace of it was visible above ground.

As is usual in most parts of Daboya, a number of burials were found in DbH but little study could be made of them since the physical anthropologist had to be flown back to Canada with suspected (subsequently confirmed) appendicitis. As local feeling does not permit the export of human skeletal material, little could be done other than to photograph the skeletons and re-bury them. Several showed cultural aspects of some interest and a young female was buried with two ivory bracelets and two ivory anklets.

UNE INDUSTRIE PALEOLITHIQUE DECOUVERTE DANS LA "TERRE DE BARRE" D'UNE TERRASSE PROCHE D'ANYAMA (REGION D'ABIDJAN) [1]

R. Chenorkian
Institut d'Histoire, d'Art et d'Archéologie Africains
Université d'Abidjan
08 BP 945, Abidjan
Côte d'Ivoire

G. Paradis
Ecole Normale Supérieur
08 BP 10, Abidjan
Côte d'Ivoire

Abstract: A fluviatile terrace at 57m above the Bete River is composed of pebbles (2m) and red clayey sands called "terre de barre" (8m). A quartz industry was found in the upper part of those sands. Lithic material can be classed into heavy pieces, including side-scrapers (n=2); bifaces and picks (n=8); end-scrapers and push-planes (n=2); and light pieces with Levallois technique. This palaeolithic industry resembles the so-called "Sangoan" of West Africa.

CADRE GEOLOGIQUE (Figs. 1 & 2)

Au nord de la lagune Ebrié existe un plateau de sables silto-argileux ocres à rouges, dits sables "néogènes" (Rougerie 1951a; Bagarre & Tagini 1965). Ces sables sont identiques à la "terre de barre" du Togo et du Bénin (Aubert de la Rue 1930). Dans la partie supérieure des profils des sols sur le plateau, des pédologues ont trouvé (de 80cm à 120cm) des charbons de bois (Roose & Cheroux 1966: 70,74,77,79) et nous-mêmes en avons recueillis ainsi que de petits quartz taillés (industrie vraisemblablement récente, méso ou néolithique). Cela montre qu'un remaniement récente, peut être d'origine éolienne (comme au Ghana, près d'Accra, cf. Talbot 1981), a affecté le sommet de la terre de barre.

Les nouveaux axes routiers (Abidjan-Yamoussokro, Abidjan-Agboville, Abidjan-Alépé) facilitent les observations. Ainsi, près des rivières Niéké, Béf, Djibi et la Mé, se trouvent des galets recouverts par la terre de barre. Ces galets reposent sur le socle précambrien altéré: pour cette raison ils furent interprétés comme conglomérat de base des sables néogènes (Rougerie 1951b), du Continental

terminal (Berton 1961; Leneuf & Berthelot 1966). Mais un quartz taillé a fait suggérer un âge quaternaire (Paradis 1980). Nous pensons aujourd'hui qu'il faut généraliser cette idée et considérer ces galets et la terre de barre les recouvrant comme correspondant à des terrasses quaternaires. D'ailleurs Rochat (1963), s'il n'a pas employé le terme de "terrasse" semble avoir admis cette interprétation (cf. ses figures 3 et 4).

Les objets décrits dans cette note furent recueillis dans la terrasee de la Bété, près d'Anyama. Leurs accès avait été rendu possible par l'ouverture de carrières de travaux publics. La figure 2A est une coupe, à peu près parallèle à la route Abidjan-Agboville, sur laquelle on peut distinguer du sud au nord:

- le plateau de terre de barre, d'altitude 100 à 120m (c'est le "plateau actuel de 100m" de Rougerie 1958: 229). Vers 3 à 4m, on trouve gros quartz filoniens et des éclats plus petits;
- une rupture de pente, de 100 à 60m, correspondant à une basse moyenne terrasse. Des quartz taillés sont abondants dans l'ancienne carrière du pont d'Anyama, implanté dans cette terrasse;
- la vallée de la Bété, avec des graviers sous berge, extraits juste à l'ouest du pont;
- la terrasse au nord de la Bété, beaucoup moins épaisse qu'au sud et affectée de failles deux kilomètres au delà du pont;
- le socle précambrien (shistes altérés) et son recouvrement (stone lines et limons jaunâtre).

La coup de la carrière du pont d'Anyama montre, de la base au sommet (Fig. 2B et C):

- le bed-rock en schistes birrimiens très altérés (de direction NNE-SSW et de pendage subvertical) et traversé de nombreux filons de quartz. Le bed-rock est situé à 5-7m au-dessus de la vallée de la Bété;
- 2m de galets et de sables grossiers. Les gros galets sont peu arrondis et moyennement émoussés. Deux minces niveaux de grès ferrugineux, continus et un niveaux à nodules ferrugineux (déjà signalé par Berton 1961: 29) sont disposés dans les lits à galets. En plusieurs points les galets sont cimentés en un conglomérat. Des lentilles sableuses s'y mèlent.
- un niveau fracturé et ondulé de grès ferrugineux à la base de la terre de barre. Par place, ce grès contient des concrétions ferrugineuses cylindriques allongées (6-10cm de long sur 0.5-5.5 de diamètre) paraissant correspondre à des rhizoconcrétions (mises en place par l'érosion d'un paléolsol);
- la terre de barre épaisse là de 8 à 10m. Elle contient deux lignes de gros quartz avec des éclats, vers 3 et 1.8m de la surface. Le matériel qui sera étudié *infra* ne provient, pour des raisons pratique de collecte, que de la ligne inférieur. La terre de barre montre des sortes de tubulures irrégulières de même composition granulométrique mais plus verdâtres ou plus blanchâtres traces de circulation d'eau ou traces de racines (?). Ce charactère a été aussi remarqué dans la terre de barre de Bénin (Houessou & Lang 1978: 144);
- le long de la pente du flanc de la vallée, une stone line parallèle à la topographie et composée de fragments de grès et de quartz repris de la terre de barre;
- un recouvrement sablo-limoneux, jaunâtre et riche en matières organiques, épais de 80cm à 1m et surmontant la stone line.

Une faille (direction N 80°; fort pendage 80° N; rejet faible 40 à 50cm) affecte socle, galets et grès. Elle paraît s'amortir dans la terre de barre. Elle traduit l'existence de rejeux tectoniques quaternaires.

Un essai d'interprétation géologique et géomorphologique peut être le suivant. Lors d'une régression marine, en période glaciaire aux hautes latitudes (et sans doute interpluviales en Afrique de l'Ouest), s'est produite une entaille à la fois du socle précambrien et des terrains sédimentaires néogènes: une grande vallée s'est formée. Ultérieurement, en période interglaciaire aux hautes latitudes (et sans doute pluviale en Afrique de l'Ouest), une transgression a permis le remblaiement de cette vallée par des accumulations de galets et de sables grossiers un peu argileux. La terre de barre qui surmonte les galets et sable grossier provient vraisemblablement du remaniement par ruissellement, colluvionnement, et peut être action éolien, des sables argileux situés plus au sud. Il ne nous semble pas que la terre de barre contenant l'industrie lithique puisse provenir de l'érosion de sols latéritiques du socle, car il y a une abondance de grains de sable émoussés, et même ronds. Cela paraît traduire un long transport et non une érosion d'altérites. Aussi l'explication par reprise d'un ancien sable est-elle en accord avec ces caractères. Ailleurs en Afrique divers remaniements de sables sont connus, en particulier pour ceux du Kalahari en Angola (Clark 1962) et au Congo (De Ploey 1965).

Il est possible que le haut niveau marin responsable du remblaiement corresponde à l'avant dernière grande transgression (contemporaine de l'Eémien), datée au Brésil de 120 000 BP (Martin *et al.* 1981). Le creusement antérieur serait contemporain de la glaciation de Riss. Notons que Davies (1976: 895) estime que dans les régions côtières le Sangoen peut être légèrement plus récent que 105 000 BP (soit Eémien II) et dans le Natal, un peu plus vieux que 60 000 BP.

La vallée actuelle qui entaille la terrasse s'est formée au cours de la dernière grande régression (Ogolienne). Les graviers sous berge (Fig. 2B) ont dû se déposer lors du plus haut niveau de la transgression holocène.

ETUDE DU MATERIEL

Nous avons pu distinguer, au sein du éléments recueillis:

Racloirs

1 racloir simple convex à retouche abrupte scalariforme, réalisé sur un gros fragment de quartz filonien. Sa face inférieure a été régularisée pour obtenir une surface plus plane (Fig. 3).

1 racloir simple concave sur gros fragment de quartz filonien (Fig. 7.3).

Bifaces & pics

1 biface épais, de silhouette cordiforme, de section quadrangulaire, très lourde, très appointi, mais qui ne présente de traces d'utilisation que sur l'un de ses tranchants, la pointe de semblant pas avoir été utilisée. La moitié de la partie proximale reste corticale. Cet outil correspond tout à fait à la définition du pic sangoen (cf. Davies 1967) (Fig. 4). 1 pic, également de section quadrangulaire, de plus petite taille et plus léger que le précédent. Il est à noter que la seule partie qui a pu être active est sa pointe.

1 pic à pointe, sans succès, tenté de diminuer l'épaisseur. La partie active est clairement ici l'extrémité distale. On remarque en effet, en en cette zone, sur une seule des faces, un très fort émoussé des arêtes. Son utilisation ne fut donc pas celle que son nom pourrait laisser envisager. Il ne peut s'agir non plus d'un perçoir car l'émoussé n'aurait pas alors manqué d'affecter la plus saillante des arêtes de chacune des faces. De plus celuici ne se remarque pas seulement ici sur les arêtes les plus saillantes mais aussi sur celles de moindre importance qui se trouvent sur l'ensemble de la surface concernée. Cela correspond très vraisemblablement à un mouvement latéral de creusement. La pointe a été ensuite brisée ultérieurement. Il semblerait que l'outil fut utilisé par un gaucher (Fig. 5.2).

1 fragment de biface qui devait être, pour autant que l'on puisse en juger, de silhouette ovalaire. Son tranchant est régulier et il est relativement peu épais. Il présente de nombreux esquillements d'utilisation.

1 pic très lourd et très grossier, de section triangulaire, à l'extrémité distale brisée. Ce pourrait être aussi un biface nucléiforme.

1 pièce pourvue d'un tranchant à retouches bifaciales portant de nombreux esquillements d'utilisation (Fig. 5.1).

1 pièce de silhouette subcirculaire sur laquelle on a tenté de dégager deux tranchants par retouche bifaciale. Le caractère très fracturé et ingrat de la roche a interdit le succès de l'entreprise. Les tranchants n'occupent qu'une partie de la périphérie et l'on peut relever à l'extrémité distale de nombreux points d'impacts qui témoignent de percussions répétées. On peut noter des esquillements d'utilisation sur les tranchants obtenus ainsi qu'une série d'enlèvements plus ou moins fructueux, dans la partie proximale, réalisés sur une seule face et dans le but d'affiner la pièce qui a ici 47mm d'épaisseur (Fig. 6.1).

1 pièce identique à la précédente mais de plus petite taille.

Grattoirs

1 massif, de grande taille, légèrement denticulé, à partie proximale corticale (Fig. 6.2).

1 rabot double alterne, aux fronts très abrupts (Fig. 7.1).

Divers

2 sphéroïdes de petite taille.

Conjointement à cette lourde industrie réalisée sur des fragments de quartz filonien non débités ou sur de très gros éclats (par exemple: longueur 11 et 15cm et épaisseur respectivement 5.5 et 4.4), on recontre une industrie légère sur éclat, également réalisée en quartz. Il faut remarquer qu'il semble y avoir eu un tri de la matière première, la plus apte à la taille étant réservée à cette industrie légère, aucun matériel lourd n'étant réalisé sur un tel support mais exclusivement sur des quartz de basse qualité.

Les éclats qui furent recueillis (n=76), sont à une exception, dépourvus de retouche. On peut signaler:

1 éclat à retouche continue inverse du bord gau-

che qui présente, en outre, de nombreux esquillements d'utilisation;
2 éclats levallois (Fig. 8);
2 nucléus levallois, l'un avec éclat enlevé (Fig. 7.2) et l'autre en cours de préparation;
2 nucléus à éclats.

Nous avons pu trouver également deux lames partiellement corticales qui se raccordent entre elles tête-bêche. Outre l'intérêt du détail technique (les deux nucléus reconnus étant unidirectionnels), ce remontage apporte une forte présomption en faveur de l'absence de transport naturel de cette industrie et de son origine strictement autochtone.

En conclusion l'industrie recueillie à la carrière du pont d'Anyama présente toutes les caractéristiques des industries que l'on a traditionnellement qualifiées en Afrique de l'Ouest de "Sangoennes". Sans vouloir tenter de résoudre, ni même de poser ici la question de l'existence du Sangoen dans cette région (cf. Wai-Ogusu 1973), et comte tenu de l'état actuel des recherches, il nous semble raisonnable de noter cette identité et de donner à ce matériel la même origine culturelle que ses semblables.

Notes

[1] Communication présentée au 3ème colloque del'Association Ouest Africaine d'Archéologie (AOAA), Dakar, 1981

BIBLIOGRAPHIE

Aubert de la Rue, E.
1930 Reconnaissance géologique à travers la Côte d'Ivoire. Rév. Géogr. Phys. et Géol. Dynam. 3(1): 17-75.

Bagarre, E. et B. Tagini
1965 Carte Géologique de la Côte d'Ivoire au 1/1000000. Abidjan: Direction des Mines et de Géologie.

Beton, Y.
1961 Les formations Sédimentaires du Continental Terminal de Côte d'Ivoire. Abidjan: Direction de la Géologie et de la Prospection Minière. (polycopié, 44pp).

Clark, J.D.
1962 Vegetation patterns, climate and sands in north east Angola. Actes du IV Congr. Panafr. Préhist. et Et. Quatern., Section I. Tervuren. pp. 151-165.

Davies, O.
1967 West Africa Before the Europeans. London.
1976 The "Sangoan" industries. Ann. Natal Mus. 22(3): 885-911.

De Ploey, J.
1965 Position géomorphologique, génèse et chronologie de certains dépôts superficiels au Congo occidental. Quaternaria 7: 131-154.

Houessou, A. et J. Lang
1978 Contribution à l'étude du "Continental terminal" dans le Bénin méridional. Sci. Géol. Bull. 31(4): 137-149 (Strasbourg).

Leneuf, N. et D. Berthelot
1966 Données nouvelles sur le contact socle-Continental terminal en Côte d'Ivoire. C.R. Somm. Soc. Géol. Fr. 8: 283-285.

Martin, L., A. Bittencourt, J.-M. Flexor, K. Suguio et G.S. Vilas-Bolas
1981 Modifications de la morphologie du littoral des états de Bahia et Sao-Paulo (Brésil) en fonction des variations du niveau marin. Océanis 7 (fasc. 4): 409-414.

Paradis, G.
1980 Découverte d'une industrie paléolithique d'âge Sangoen dans les sables argileux "néogènes" (ou "terre de barre") de la Basse Côte d'Ivoire. C.R. Acad. Sci. Paris 290(D): 1393-1395.

Rochat, A.
1963 Etude des Graviers de la Région d'Abidjan. Abidjan: SODEMI, rapport No. 27 (polycopié, 47pp).

Roose, E. et M. Cheroux
1966 Les sols du bassin sédimentaire de Côte d'Ivoire. Cah. ORSTOM, Pédologie 4(2): 51-92.

Rougerie, G.
1951a Etude morphologique de bassin français de la Bia et des régions littorales de la lagune Aby. Etudes Eburnéennes 2 (Abidjan).
1951b Observations préliminaires sur un conglomérat situé à la base des sables néogènes de Côte d'Ivoire. C.R. Acad. Sci. Paris 232: 1366-1368.
1958 Le niveau des 200m et les niveaux récents en Côte d'Ivoire. Etudes Eburnéennes 7: 223-233.

Talbot, M.
1981 Holocene changes in tropical wind intensity and rainfall: evidence from south-east Ghana. Quaternary Research 16(2): 201-220.

Wai-Ogosu, B.
1973 Was there a Sangoan industry in West Africa ? West. Afr. J. Archaeol. 3: 191-196.

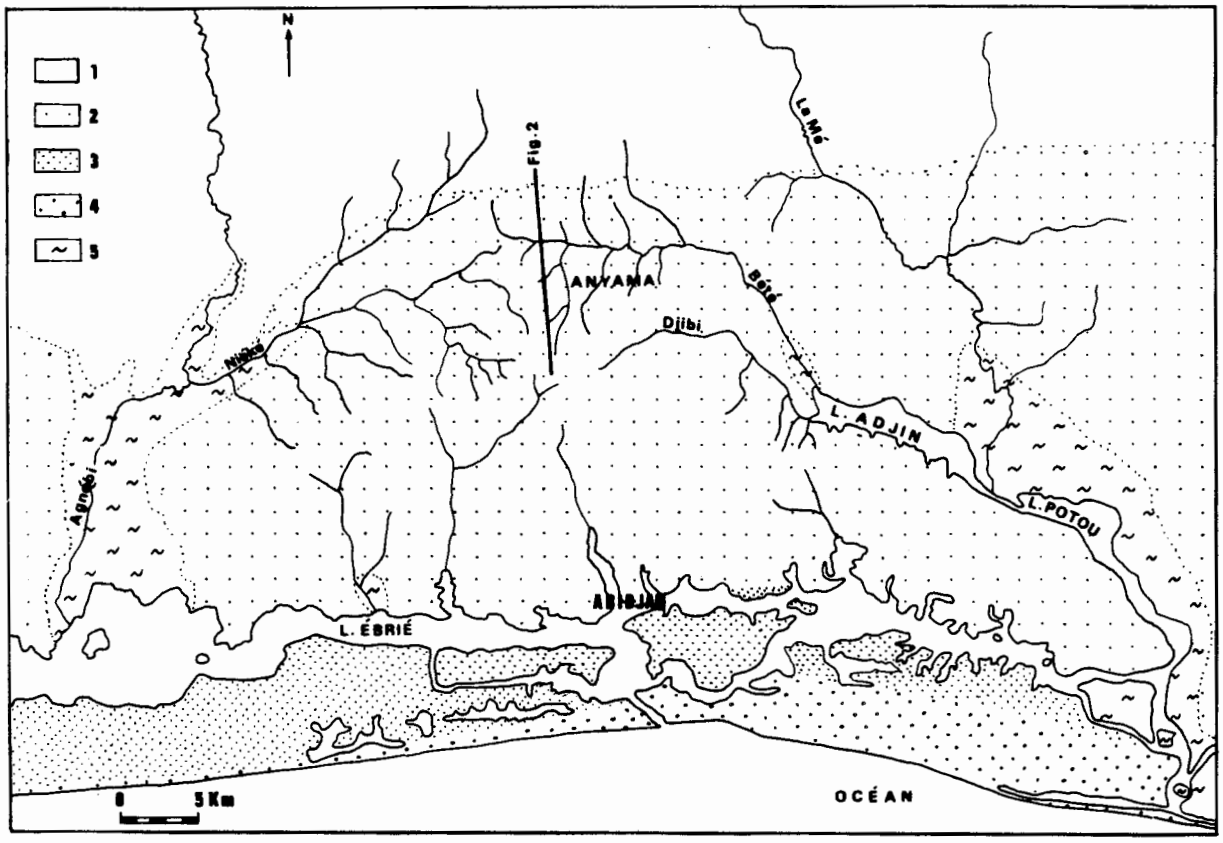

Fig. 1: Carte géologique schématique des environs d'Abidjan

(1) socle précambrien et son recouvrement de stone lines (2) terre de barre et terrasses quaternaires
(3) sables littoraux d'âge holocène moyen (4) sables littoraux d'âge holocène récent
(5) argile et tourbe holocène des vallées. Le trait près d'Anyama localise la coupe de la Figure 2A.

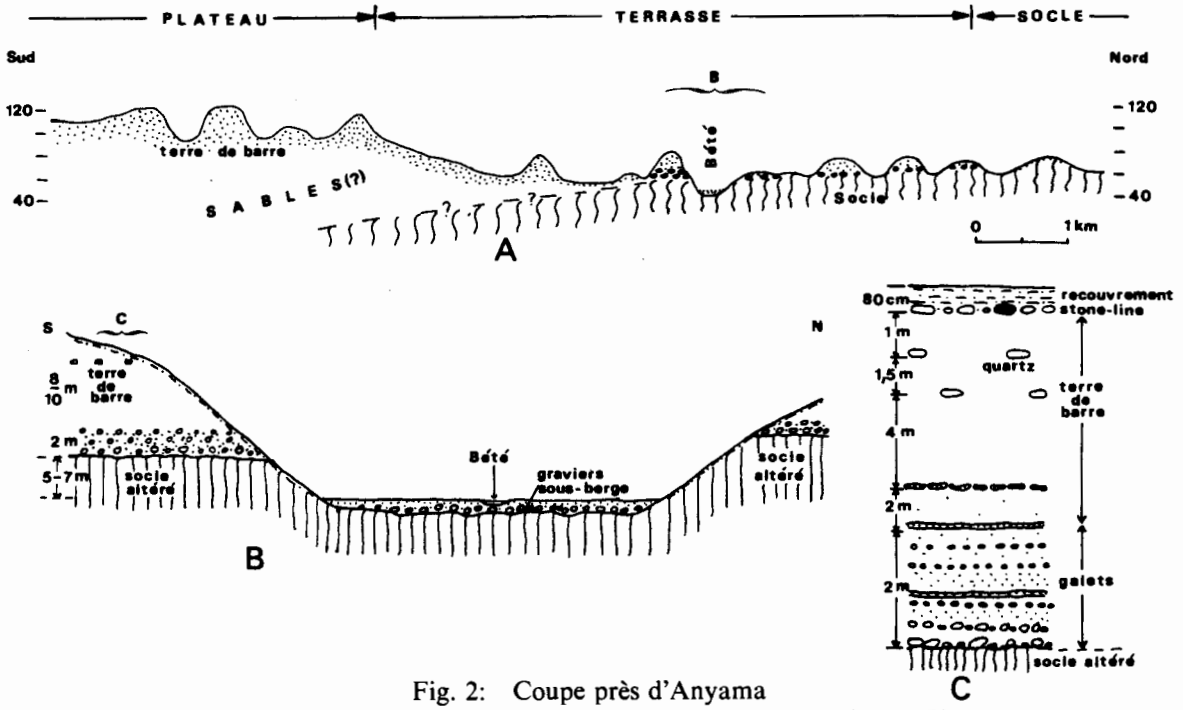

Fig. 2: Coupe près d'Anyama

(A) coupe générale montrant la terrasse entre le plateau et le socle (B & C) détails de la terrasse

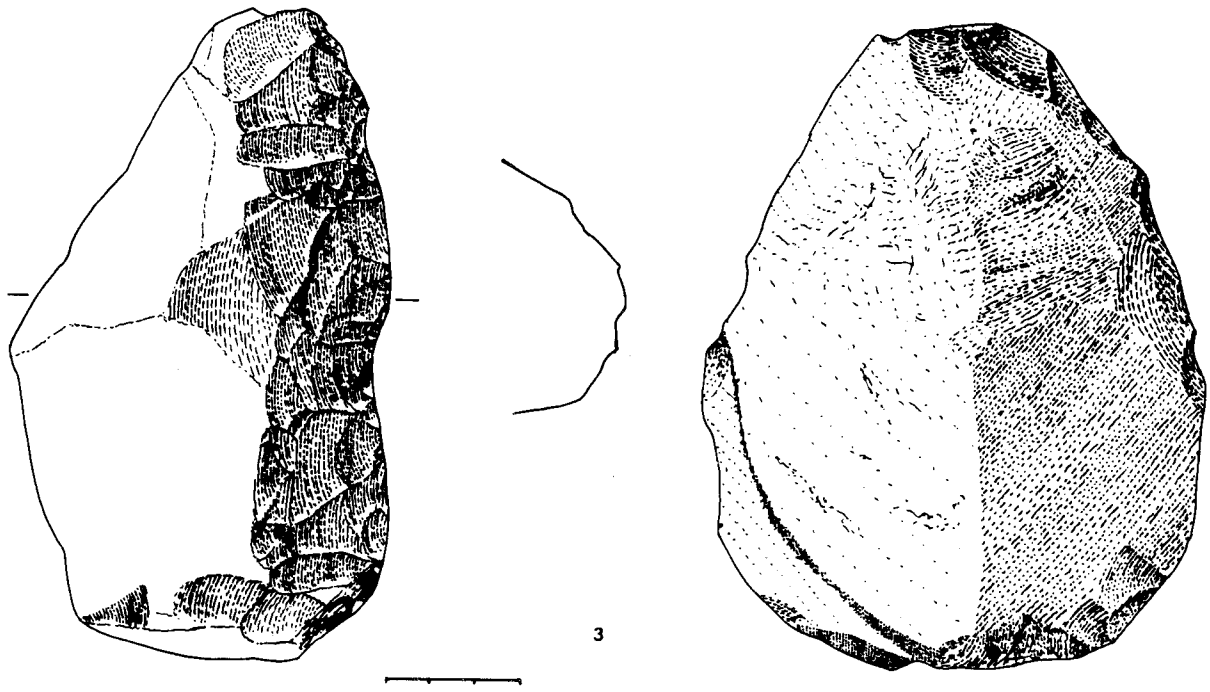

Fig. 3: Racloir simple convex

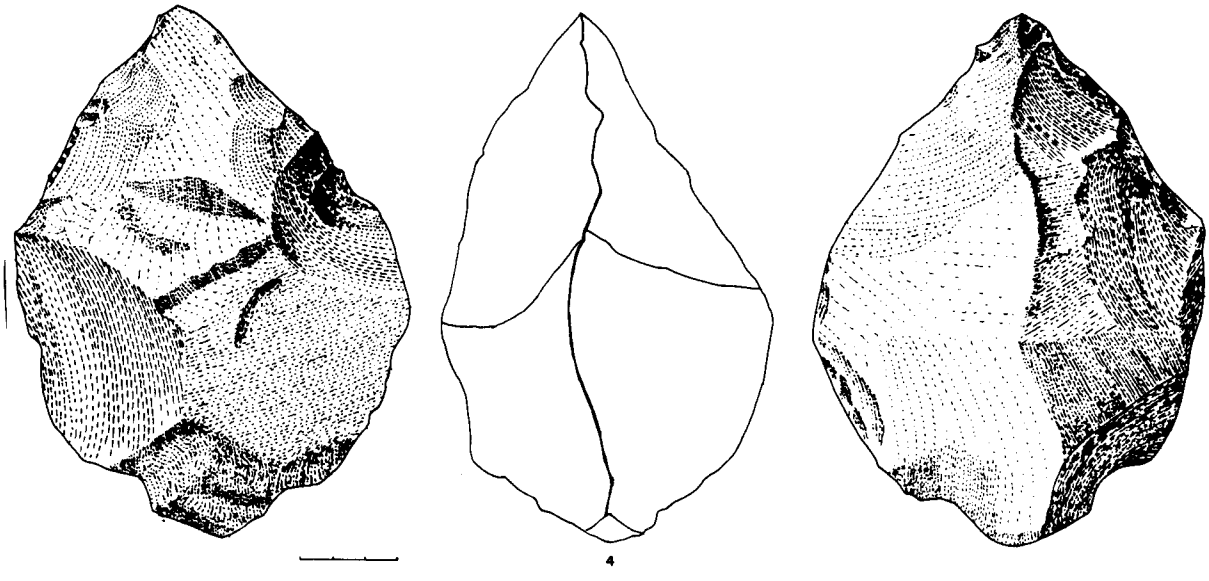

Fig. 4: Biface

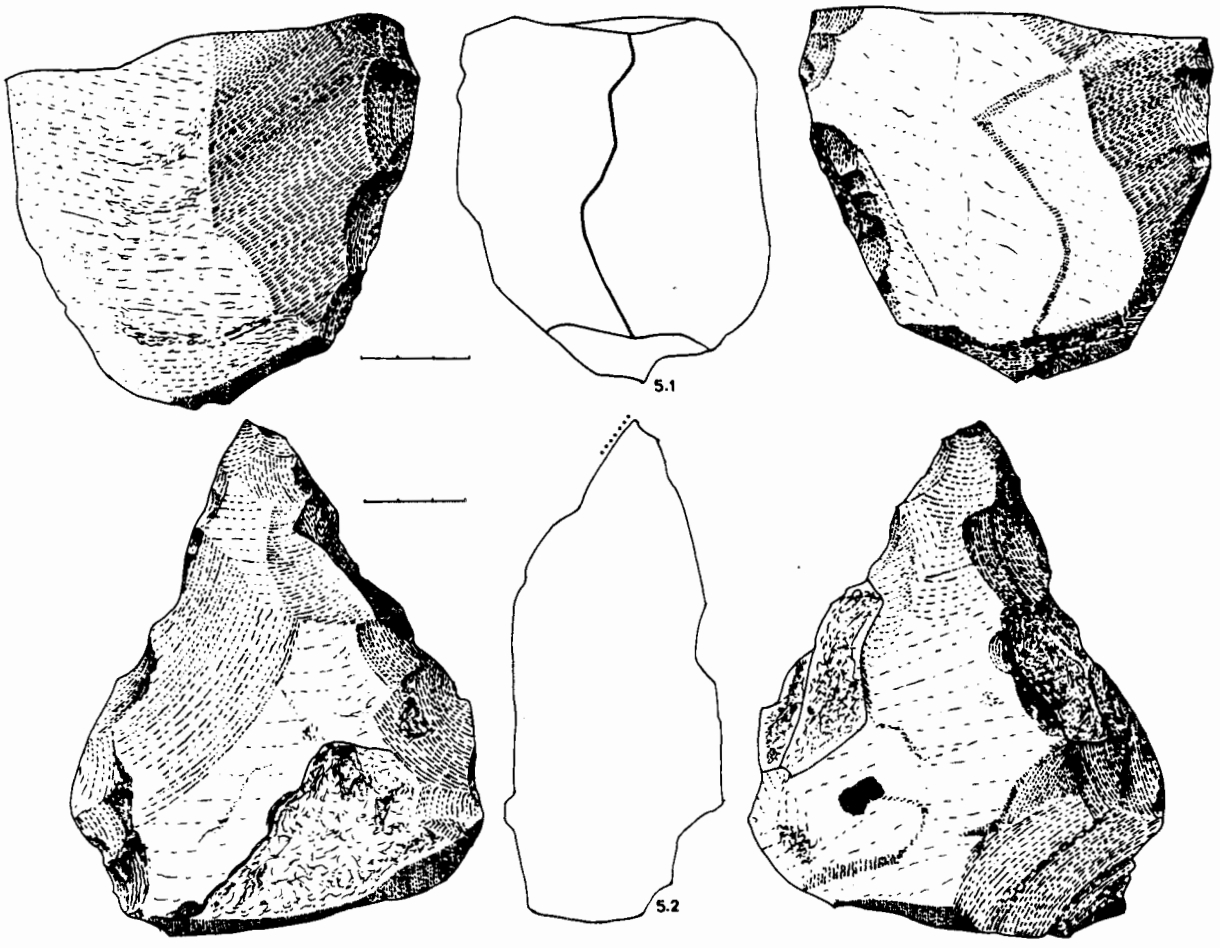

Fig. 5: Bifaces. Le pointillé matérialisé l'émoussé.

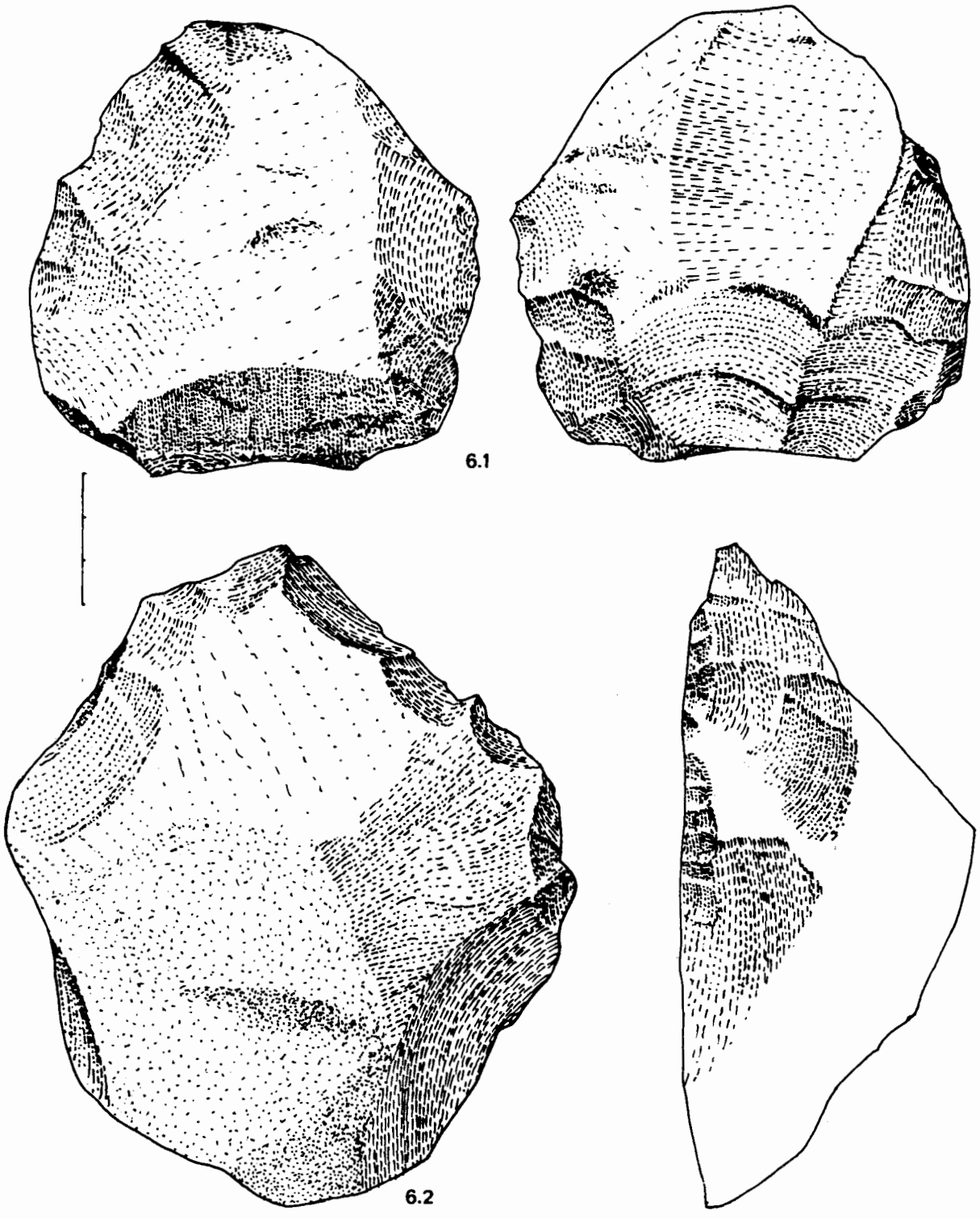

Fig. 6: (1) pièce à retouche bifaciale; (2) grattoir massif denticulé.

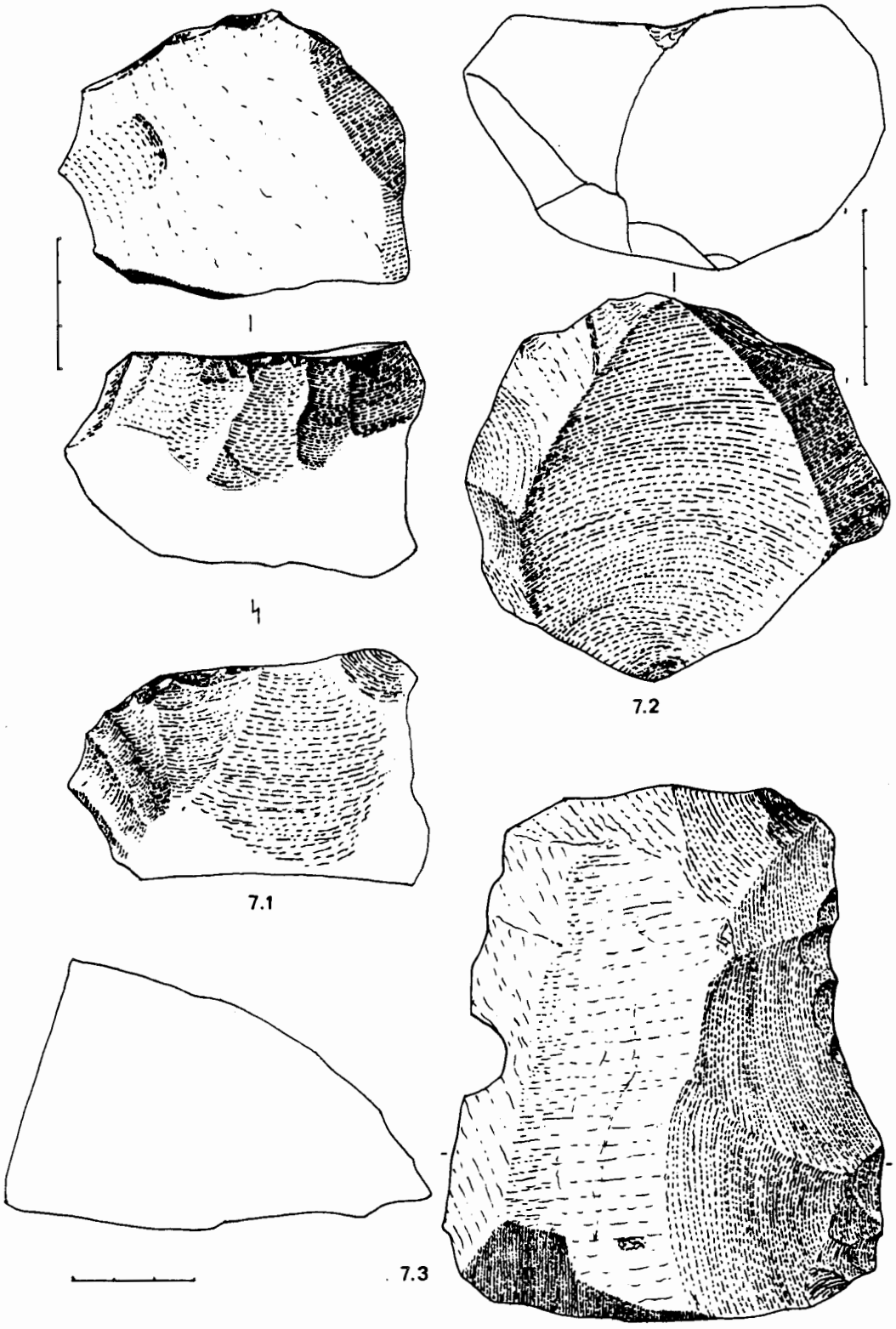

Fig. 7: (1) rabot double alterne; (2) nucléus levallois; (3) racloir simple concave

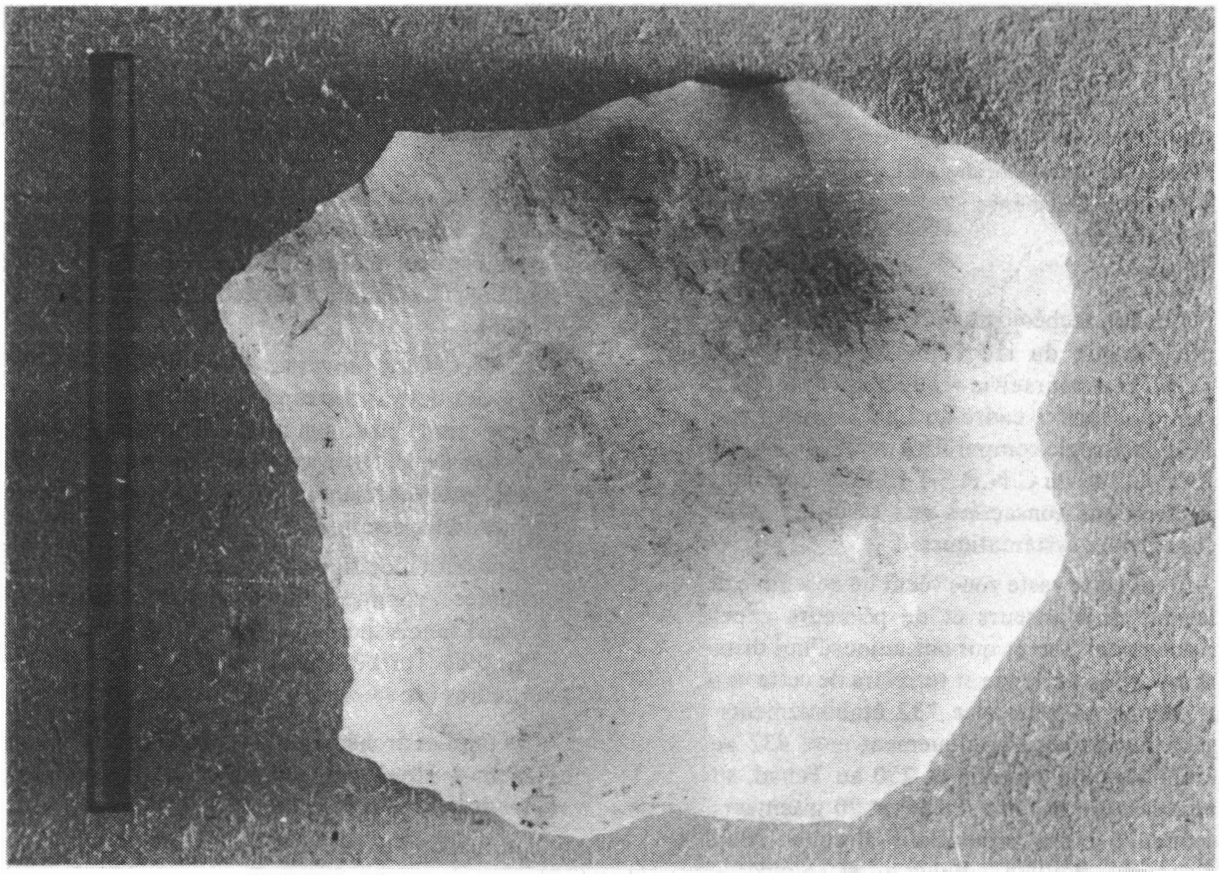

Fig. 8: Eclat levallois

NOUVELLES RECHERCES AU SUD DU LAC TCHAD

Annie et Jean-Paul Lebeuf
Directeurs de recherche au C.N.R.S.
2, impasse Guéménée
75004 Paris,
France

L'étude archéologique et ethnologique des abords méridionaux du lac Tchad (Cameroun, Nigeria, Tchad) est poursuivie régulièrement tant sur le terrain que dans le cadre du Laboratoire d'ethnologie et de sociologie comparative de l'Université de Paris X (L.A. 140 du C.N.R.S.). Elle est accompagnée de publications consacrées aux résultats obtenus par ces travaux systématiques.

Dans cette vaste zone vécut un ensemble de populations de chasseurs et de pêcheurs appelés collectivement Sao et qui ont aujourd'hui disparu. La prospection aérienne et terrestre de cette vaste zone a permis de retrouver 732 établissements qui se répartissent géographiquement enre 432 au Cameroun, 140 au Nigeria et 250 au Tchad, sites Sao auxquels il convient d'ajouter 90 gisements correspondant à des populations diverses (Moulouï ?, Kanouri, Boulala, Babalia et Kouka au 31 décembre 1981).

Les fouilles les plus récentes ont été entreprises au Tchad (Mdaga) et au Cameroun (Sou et Sou Blame Radjil). Ces travaux ont permis des observations concordantes tant pour la chronologie que pour l'utilisation des métaux, l'apparition des pipes et des représentations d'humains et d'animaux de terre cuite.

Les analyses (Laboratoire des faibles radioactivités du C.N.R.S., Laboratoire radiocarbone de Lyon-Villeurbane, Laboratoire radiocarbone de l'IFAN) de résideux charbonneux par la méthode de Carbone 14 ont permis d'établir une chronologie générale des anciennes occupations humaines de la région de même qu'elles ont confirmé l'antériorité des buttes Sao I sur les buttes Sao II qui avait été proposée sur des fondements morphologiques. Compte tenu des "fourchettes", Mdaga, au Tchad, a été occupée entre 425 avant J.C. et le milieu de 19e siècle, Sou Blamé Radjil (Sao I), de 1330 avant notre ère au milieu du 16e, Sou (Sao II) du début du 7e au début du 19e, toutes deux au Cameroun. En outre, 1330 ($\pm$360) avant est - à ce jour - la date la plus ancienne qui soit connue de la présence humaine au sud du lac Tchad.

Le fer apparaît peut-être au 2e siècle avant J.C. à Mdaga où sa présence est attestée au 6e siècle de notre ère.

Il es maintenant bien établi qu'une industrie des alliages cuivreux existait dès le 12e/13e siècles à Mdaga, la proportion d'étain dans certaines piéces, incontestablement en bronze, pouvant atteindre 9.40% à Sou, 15% à N'Djaména, 18% à Makari et avec une proportion voisine de 20% pour un bracelet de Mdaga (Laboratoire de recherche des Musées de France).

La découverte de pipes dans les couches profondes des buttes, correspondant au 11e siècle pour Mdaga, doit être considérée comme une confirmation de la tradition orale, unanime, quant à l'usage, antérieurement à celui du Tabac, de plantes à fumer telles que le *Datura métel.*

L'apparition de figurines de terre cuite peut être considérée comme remontant au 12e siècle (Mdaga) tandis que les représentations d'animaux (la Grande Tortue d'eau) les plus anciennes sont antérieures (2e siècle avant notre ère pour Mdaga).

Les fouilles archéologiques sont poursuivies actuellement à Houlouf (Cameroun) où une nouvelle campagne est prévue pour 1983.

Les recherches archéologiques et ethnologiques sont désormais menées au Cameroun dans le cadre de l'ONAREST (Office de la recherche scientifique et technique) par une équipe franco-camerounaise en liaison avec le C.N.R.S.

En revanche tout travail scientifique est impossible au Tchad où les bâtiments de l'Institut Pour les Sciences Humaines ont été détruits et le Musée National saccagé et vidé de ses irremplacables collections qui ont été vendues, volées ou détruites au cours des récentes hostilités.

Recentes publications des missions Lebeuf

Lebeuf, A.M.D.
1981 L'origine et la constitution des principautés kotoko. Actes du 551e colloque international du CNRS (1973). Contribution de la recherche ethnologique à l'histoire des civilizations du Cameroun, pp. 209-218.

Lebeuf, J.-P.
1980 Travaux archéologiques dans les basses vallées du Chari et du Logone (1936-1980). C.R. Séances de l'Académie des Inscriptions et Belles-Lettres, avril 1980: 636-656.
1981 Du rôle de l'archéologie dans la connaissance de l'histoire (Cameroun septen-

trional). Actes du 551e colloque international du CNRS (1973). Contribution de la recherche ethnologique à l'histoire des civilisations du Cameroun. Paris: Editions du CNRS, pp. 21-24.

1981 Supplément à la Carte archéologique des abords du lac Tchad (Cameroun, Nigeria, Tchad). Paris: Editions du CNRS.

Lebeuf, J.-P. et A.

1977 Les arts des Sao. Paris: Editions du Chêne.

Lebeuf, J.-P., L.P. Hurtel et M. Menu n.d. Bronzes camerounais anciens. (sous presse)

Lebeuf, J.-P., A.M.D. Lebeuf, F. Treinen-Claustre et J. Courtin

1980 Le gisement sao de Mdaga (Tchad); fouilles 1960-1968. Paris: Société d'ethnographie.

THE 1982 EXCAVATIONS AT QASR IBRIM, EGYPTIAN NUBIA

William Y. Adams
Department of Anthropology
University of Kentucky
Lexington, Kentucky 40506
U.S.A.

Qasr Ibrim is a fortress site in the extreme south of Egypt, about 40km from the famous temples of Abu Simbel. Throughout its 3000-year history the fortress was perched atop a steep, rocky promontory overlooking the Nile floodplain, but the filling of Lake Nasser has left it an island projecting forlornly from the lake surface. It is the last important site in Lower Nubia that has not been inundated by the rising waters, and where, in consequence, excavations are still continuing.

Excavations as Qasr Ibrim were begun in 1963 as a contribution to the Nubian rescue campaign, and have continued intermittently ever since. The main sponsoring institution is the Egypt Exploration Society of Great Britain, but substantial assistance is also provided by the American Research Center in Egypt, the Smithsonian Institution, and the University of Kentucky. The season of 1982 was the 11th season of excavations at Qasr Ibrim. Work was carried on between 14 January and 1 April, with an Egyptian labor force of 60 and a supervisory and technical crew of 15. The expedition directors were Drs. John Alexander of Cambridge University and William Y. Adams of the University of Kentucky.

Qasr Ibrim was known anciently by such names as Premnis, Primis, Pedeme and Phrim. Textual evidence, as well as archaeology, indicates that during much of its history it was the most important administrative and military center in Lower Nubia, as well as being a center of commerce and of religious worship. Although the lowest levels of occupation have not yet been penetrated, there is evidence to suggest that the earliest occupation goes back at least to the Egyptian New Kingdom, perhaps around 1300 BC. The final abandonnment of the site in AD 1811 is historially recorded.

The main objective of the 1982 campaign was to complete the excavation of all Islamic-period house remains, dating from the period between AD 1550 and 1811. These rather crudely built stone houses were thickly clustered over the whole surface of the site. About half of the total area of Islamic houses had been cleared in seasons prior to 1982, and the most recent campaign saw the successful completion of this phase of the Qasr Ibrim excavations. Qasr Ibrim between 1550 and 1811 was primarily an Ottoman garrison outpost, and had lost most of the religious and commercial significance which the site had enjoyed in earlier centuries. Our excavations showed nevertheless that the place was by no means simply a barracks compound, but rather a substantial commerce persisted even under the Ottoman regime. None of the buildings excavated in 1982 was recognizably of a military character; for the most part they were large family dwelling compounds, many of which included open courtyards. The largest of the houses were almost certainly polygamous family dwellings, and they may have included slave quarters as well.

Material finds from the Islamic levels were mostly locally made products such as hand-made pottery, basketry and matting, woolen textiles, leather goods and iron tools. The most interesting imported goods were glass bracelets and beads, Egyptian and Near Eastern glazed pottery, and fine textiles of silk and linen. A very few pieces of Chinese porcelain were also recovered. Perhaps the most unexpected find of the season was a complete sword and scabbard, probably of European origin and dating from the 17th or 18th century.

The 1982 excavations yielded, as usual, several thousand fragmentary written texts and over one hundred complete ones. The vast majority of written material was on paper, but there were also examples of writing on wood, stone, potsherds and eggs. Over one hundred of the documents included dates, which range between AH 967/AD 1559 and AH 1223/AD 1808. A wide variety of topics are covered in the texts, including military adminis-

tration, inventories of possessions, official correspondence and loans. Among the most interesting items are a number of small dockets written in Turkish, relating to the pay of individual soldiers. Some of these pertain to the garrison at Sai Island, 200 miles to the south of Qasr Ibrim.

Some excavation was also carried out in house remains of the late medieval period, dating between about AD 1150 and 1500. This was during the period when Nubia still adhered to the Coptic Christian faith, despite occasional military incursions by the Ayyubid and Mameluke rulers of Egypt. Qasr Ibrim was then the site of a major cathedral and was also the normal residence of the Eparchs, or Viceroys, who governed Lower Nubia on behalf of the Sudanese Kingdom of Makouria.

Five houses of the late medieval period were excavated in 1982. They were relatively compact, square buildings of a type already well known in Lower Nubia. At least two of the houses had originally been two stories high, with living quarters primarily on the upper floors and storerooms on the ground floor. The largest of the excavated houses was of special interest because it had once belonged to an Eparch of Lower Nubia, a man called Isra'il. Deposits within the house yielded over 1200 whole and fragmentary letters, of which about 600 are in the Old Nubia language, 400 are in Arabic, 150 are in both languages, and 140 are too fragmentary for positive identification. One letter is from the son of Isra'il, congratulating his father on his appointment as Eparch.

A second late medieval house was of interest because it had been destroyed by fire with much of its material content in situ. Over 60 pottery vessels and various other goods were found crushed on the floors where the burned roof timbers had fallen upon them.

The late medieval period was a prosperous one at Qasr Ibrim, and this is reflected in he wealth of material goods of both local and foreign origin. The most important local manufactures were fancy decorated pottery, colored woolen and cotton textiles, leather goods and lathe-turned wooden furniture elements, while imports included Egyptian glazed pottery and glass, fine textiles, paper, and decorative objects of bronze and ivory. Because of the total preservation of organic deposits at Qasr Ibrim, material goods of all kinds were recovered in enormous quantities both from the late medieval and from the Islamic levels. Over 4,000 individual items were catalogued and entered on object record cards.

An innovation of the 1982 season at Qasr Ibrim was the systematic collection and analysis of animal bone and plant remains. Altogether about 20,000 specimens of bone, hoof and horn were collected. The only common bones, as might be expected, were those of food animals: sheep and goats, and to a lesser extent cattle. Transport and draught animals – camels, horses, donkeys and water buffalo – were rare, and dogs and cats even more so. Wild fauna that have been tentatively identified include gazelle, crocodile, hippopotamus, snakes and lizards, although none is at all common.

Plant remains were recovered especially from underground storage pits and from winnowing surfaces, both of which were numerous at Qasr Ibrim. Sorghum, wheat and barley were the most common foods, along with some kinds of beans, peas and lentils. Broad beans, chickpeas and sesame were surprisingly rare. Both flax and cotton were either grown locally or were imported in raw form to support the large weaving industry that flourished at Qasr Ibrim.

1982 saw the completion of all projected work in the houe remains of the Islamic period. A few houses of the late medieval period remain to be excavated when work is resumed in 1984. The bulk of attention will, however, be given to townsite remains of the earlier medieval period, which at this point are still largely uninvestigated.

PRELIMINARY REPORT OF ARCHAEOLOGICAL INVESTIGATIONS AT THE SITE OF MAHAL TEGLINOS (KASSALA) NOVEMBER 1981

Lorenzo Costantini
Museo d'Arte Orientale, Roma

Rodolfo Fattovich
Seminario di Studi Africani
Instituto Universitario Orientale, Napoli

Edoardo Pardini
Instituto di Antropologia
Università di Firenze

Marcello Piperno
Museo Preistorico Etnographico 'L. Pigorini'
Roma

In the summer of 1981, the Italian Archaeological Mission in Sudan (Kassala), sponsored by the Department of African Studies, Instituto Universitario Orientale, Naples, started systematic in-

vestigations at the site of Mahal Teglinos (K 1) near Kassala. The research was conducted within the framework of the Gash Delta Archaeological Project, in progress since 1980, which aims to reconstruct the dynamics of the ancient peopling of the delta and to elucidate the role it played in the cultural history of northeastern Africa (NA 17: 64-71, 19: 26-30).

The 1981 season was devoted to preliminary description of cultural features visible on the surface of the site and excavation of two stratigraphic tests in order to get more detailed information about the phases of occupation and to settle the temporal sequence of the other sites previously discovered in the delta.

The team included Dr. R. Fattovich (archaeologist), Dr. M. Piperno (prehistorian), Dr. E. Pardini (physical anthropologist) and Mr. Gamal El Din Mohammed Idris, Inspector of the Sudan Antiquities Service, Khartoum (archaeologist). Floral remains were studied by Dr. L. Costantini (palaeobotanist) and faunal remains were assigned to Dr. Danis Geraads, Musée de l'Homme, Paris (palaeontologist).

The site

Mahal Teglinos (K 1) is located in a basin at the NE end of Jebel Taka (or J. Kassala), 15°25′30″ N and 36°26′25″ E. It has an approximate area of 90,000 m² (450m×200m), covering the whole surface of the basin, with major architectural concentrations along the southern and western sides. The archaeological deposit is well preserved and very rich in artefacts. In the western sector only, it is disturbed by a sand quarry.

The site was discovered in 1917 by J.W. Crowfoot (see JEA, 1928, 17: 112-116) and recorded by Kirwan in 1939 (see S.A.S. File CA/31-1-7, Khartoum). Some materials were collected on its present surface by Wellcome, Sandison and Haycock. They are presently kept in the Sudan National Museum, Khartoum (SNM 2580, 3336, 3651, 3782, 3783, 3784, 7766, 7768) and the Ashmolean Museum, Oxford. It was also visited by R. Fattovich in 1978 and surveyed by the I.U.O. mission in 1980.

In 1980 two possible main assemblaages were recognized on the surface. The first, characterized by brushed ware, is found in the eastern and central sectors of the site. The second, characterized by rippled ware, is found in the western sector. A few Early Khartoum wavy line potsherds, collected in naturally opened sections, suggested that the site was inhabited by the 5th millenium BC.

Surface remains

Different kinds of remains visible on the surface of Mahal Teglinos are:

a) *Circular tumuli of stones.* These have an average diameter of 2-4m and are almost completely eroded and flat. They are clustered along the southern side of the basin in the eastern and central sectors of the site. One of them, partly excavated during testing, will be described in the next section. Similar structures were also found by the I.U.O. mission in other sites near J. Taka, J. Mokram, J. Tukulabab and J. Timberi Tie.

b) *Rectangular tumuli of stones.* These are clustered in the central sector of the site along its southern side. One of them, examined in 1980, was 150cm×80cm with an E-W orientation. They might be quite recent.

c) *Circles of stones.* These have an average diameter of 150-200cm and are scattered on the surface of the site. They might be very recent.

d) *Hearths.* Two circular hearths of baked clay, 50-70cm in diameter, are visible in the western sector of the site. They are definitely ancient and can be related to the archaeological deposit.

e) *Burials without superstructures.* These are visible in natural sections along the southern side of the basin in the central sector of the site. Some of them were opened in the test excavations and will be described in the next section.

Test excavations

Two trenches were opened in the central sector of the site in order to test the possible stratigraphic sequence of the archaeological deposit and to collect palaeoenvironmental evidence and samples for radiocarbon dating. They were designated K1 I and K1 II, K1 indicating the site and I or II the trench.

K1 I was originally a square of 4×4m, enlarged to 4×6m westwards. It was excavated to a depth of 100cm. Two soil strata were observed. The upper one, grayish brown in colour, had a very soft dust-like texture and an average thickness of 45-50cm. The lower one, brown in colour, had a compact texture. In both strata the same pottery was collected, suggesting just one archaeological level. No confirmed living floor was observed, save for a major concentration of materials with some large fragmentary pots, possibly in situ, at a depth of 30-40cm. In the upper stratum five badly preserved burials were found, without superstructures and ex-

cavated directly into the archaeological deposit. They were dug to different depths from 10-15cm to 45cm. No grave goods were found near the skeletons. Only burials 1 and 4 were sufficiently intact to be described. They contained single skeletons lying on the left side in contracted position with NW (burial 1) and W (burial 4) orientation. In both burials the head lay over a flat stone. In burial 1 another flat stone covered the face. In the lower stratum, at a depth of 50-70cm, an oval stone cairn, 277×147cm with an E-W main axis, was found. It was constructed of large stones arranged in concentric circles. About 50cm to the west of it a small flat stone, 40×30×4.5cm in size, was recovered. This structure, found at the end of the season, was left intact to be excavated in 1982.

K1 II was originally 2×6m in size with an E-W main axis, and was later restricted to 2×3m on the east side. It was dug to a depth of 215cm. Three different soil strata were observed. The upper one, grayish brown in colour, had an average thickness of 45-50cm and very soft texture as in K1 I. The middle stratum, reddish yellow in colour, had an average thickness of 60cm and a more compact texture. The lowest stratum was brown in colour with a compact texture. Different layers of occupation were indicated by hearths at 35/40-50cm, 90-100cm, 125-130cm and 150cm depth. These were round clay structures, save for the one at 125-130cm, which was a circular arrangement of stones. In the hearth at 150cm some floral remains were collected.

The pottery of the upper stratum is different from the lower strata, suggesting two main archaeological levels. One oval grave, 80cm deep and 170×90cm in area, was found in this trench. It was marked by two flat stones immediately beneath the surface, and contained a double burial with the skeletons of an adult and a child, both lying on the left side in contracted position with the heads pointing to the east. Three fragments of an iron bracelet were found near the child. In the SE corner of the trench a circular stone cairn was exposed accidentally and part of a burial was revealed. It covered a hole 200cm deep, filled down to 170cm with stones, and contained one skeleton lying on the left side with the legs slightly contracted. No grave goods were found.

Pottery

Two different levels of pottery can be recognized in the sequence from K1 I and K1 II. However, in both areas the most common ware is an orange brushed one, decorated with rhomboidal patterns covering the whole surface of the pots which are characterized by pinched rims. It usually represents 66% of the potsherds in each of the layers, with an increasing amount from the deepest layers to the surface.

The first level is documented by the materials collected in the upper soil strata of both trenches and the lower stratum in K1 I. It is characterized by coarse brushed ware with thick walls, brown ware decorated with geometric patterns incised along the rim (vertical wavy lines, commas, etc.), and reddish brown ware decorated with oval impressions covering the whole surface of the sherds. The second level is represented by the materials found in the middle and lower strata of K1 II. It is characterized by thinner and better decorated brushed ware, sometimes with clay balls applied to the outside surface, red ware with a polished black coating on the outside rim and inside surface with geometric decoration, and orange ware decorated with molded zig-zags along the rim. These data suggest two main phases of occupation at the site.

Lithic industry

The lithic industry is quite homogeneous in both trenches. It is characterized by backed pieces, mainly geometrics. Crescents are the most frequent tools, while triangles and trapezes are also present.

Blade technology is very limited. True blades with regular sections are practically absent and only a few geometrics are made on blades or bladelets. The cores are usually shapeless or globular and show the negative scars of numerous broken flakes.

The other tools exhibit little variety of types. They include flakes with irregular retouch on part of the edge; rare denticulated and notched pieces; a few flakes with deep terminal oblique truncations. One burin was found in K1 I at 100cm depth. More frequent are flakes which might best be defined typologically as *pièces écaillés*, with traces of many terminal and proximal bifacial detachments. Two flakes of obsidian were also collected in the upper stratum of K1 I.

Small objects

Some small objects were collected in the different layers of both trenches. They include: 18 stone and clay lipstuds similar to those found at Jebel Moya; 11 discoidal ostrich eggshell beads; 1 stone bead; 11 discoidal stone beads; 1 stone spindle whorl; 1 fragmentary figurine and 1 small celt.

The lipstuds occured only in the upper stratum of

K1 I and K1 II. The beads were found at different depths in all the strata of both trenches. The spindle whorl was collected in the upper stratum of K1 I.

Floral remains

About 20cc of carbonized floral remains were collected in K1 II at 155cm and 175cm. Three different species have been identified: *Hordeum* sp., *Zizyphus* sp. and *Leguminosae* (?).

Hordeum is represented by only one fragmentary sample. *Zizyphus* is documented by many fragments of fruit stones. The *Leguminosae* are represented by many large fragmentary seeds with the same morphology but they are not yet identified exactly.

Human remains

Only two skulls (K1 I burial 4 and K1 II burial 1) were sufficiently well preserved to be examined in detail. They probably belong to adult males about 30 years old. Both are prognathic, suggesting a possible attribution to the negroid stock.

Absolute chronology

Three samples of charcoal were submitted for radiocarbon dating and two samples of bone for amino acid racemization were sent to Dr. G. Belluomini at the Institute of Geochemistry, University of Rome. Only one charcoal sample was sufficient for an age determination. It was collected in K1 II at 155cm, in the same layer as the floral remains described above. The sample is dated at $3,860 \pm 60$ BP. The amino acid dating of the bone samples is still in progress.

On the basis of the pottery, both archaeological levels at Mahal Teglinos can be connected to the cultural tradition of the Butana Group in the Khashm el Girba region. The materials of the lower level in particular, are comparable to those from sites ES 1 and M 1 in the northern Gash Delta, and from Agordat in the Baraka Valley. They might confirm, therefore, the existence of a large cultural area, stretching from the Atbara to the Baraka Valley, between the 3rd millenium and the beginning of the 1st millenium BC.

FRANCO-SUDANESE EXCAVATIONS IN THE SUDAN (1981-1982)

Francis Geus
Sudan Antiquities Service
French Archaeological Unit
Khartoum, Sudan

Since the previous report published in NA (18:37-42) the French Archaeological Research Unit of the Directorate General of Antiquities and National Museums has been working in the Shendi area (sixth campaign, 20th January - 19th February 1982) and at Gereif East (first campaign, 5th December 1981 - 18th January 1982).

El Kadada

New ^{14}C datations have been obtained from Gif-sur-Yvette for el Kadada (KDD) and el Ghaba (GHB). The conventional uncalibrated dates are given in table 1.

These confirm that el Ghaba is contemporary with the Khartoum Neolithic and prior to the Neolithic of el Kadada. Nevertheless, the date obtained for the occupation layer in 107 is earlier than the latest date of el Ghaba. More excavation and additional ^{14}C dates will be necessary to analyze the transition between el Ghaba and el Kadada. A thermoluminescence study (M. Schvoerer) has started recently on the Neolithic pottery. The first results are quite positive and two specialists will accompany the mission next winter.

A. Gautier (Gent University) is about to finish the study of the shells and animal bones from KDD 12-22-32. He noticed a high frequency of small-sized domesticated species as compared to el Kadero and the presence of personal decorations (rings and pendants) made out of shells from the Red Sea. R. de Paepe (Gent University) started the petrographical study of the stones used for the lithic industry and the petrographical and chemical study of the pottery. The stones used at el Kadada seem to come mostly from the east and northeast, few of them originating from the 6th cataract area. The study of 111 pottery pieces, most of them from complete pots, is about to be finished and a similar quantity of Meroitic samples has recently been sent to Paepe.

The main objectives of the sixth campaign at el Kadada were to undertake soundings in order to obtain a better idea of the extent and content of the archaeological areas. This took us beyond the original area of 500m E-W, referred to as el Kadada (KDD). Therefore, two new areas of the same size,

situated to the west and to the east have been squared in the same way. They have been given the local names of el Kudra (KDR) and Umm Heidan (HDN).

Work progressed in the Neolithic cemetery inside KDD 75-76-85-86 (NA 18:39-40) and the work was completed by soundings in KDD 95, 107 (NA 18:40) and 108. A new excavation started in KDR 01 and various soundings inside KDR, KDD and HDN tried to define the extent of the Meroitic cemetery.

KDD 75-85-86-95-107-108

A few more burials have been excavated in this area. New soundings show that the Neolithic cemetery is mainly situatedd in 85-86. In 107 and 108 the excavated areas have been disappointing and the Neolithic cemetery in 107 remains to be explored.

KDR 01

This new area appears to be a settlement of the Dotted Wavy Line culture. It has been disturbed by burials of Napatan date. On the other hand, sherds of an unknown culture, which are also found on other parts of the site, are mixed with the Dotted Wavy Line material. Many of them are of a fine black and red ware, similar to the A-Group and Kerma wares. The three periods of occupation found in this area confirm that el Kadada was occupied for a very long time during Neolithic and historic periods.

The Meroitic necropolis

The Napatan graves excavated in KDR 01 belong to the large burial area which extends on more than 15ha. New soundings around the muslim cemetery, SW of the site, led to the discovery of post-Meroitic burials. The graves are similar in shape to the Meroitic ones, but the pottery differs completely from earlier wares.

El Ushara

During the campaign at el Kadada a sounding eas organized at the threatened site of el Ushara, situated between el Kadada and Shendi. Only $10m^2$ were excavated. The archaeological layer is about 40cm thick, with no clear stratigraphy. The pottery sherds are similar to those found at el Ghaba. Samples of shells have been collected for ^{14}C dating.

Gereif

The site of Gereif East was discovered in 1981. In a flat area of Nile alluvium, quarrying destroyed a large number of Meroitic graves. Some fragmentary objects, including bronze bowls and fine painted or stamped Meroitic pottery were found on the surface. One of the bronze fragments was decorated with lotus flowers. As destruction progressed during the summer of 1981, an excavation was organized in December 1981 and January 1982. Eleven Meroitic and one post-Meroitic graves have been cleared. The Meroitic graves appear as small caves containing a contracted skeleton with, in some instances, personal adornments and pottery vessels. More work will be undertaken next winter.

Table 1.

Number	Proveniance	Material	Yrs. BP
1. KDD 21	Neolithic occupation layer	shell (*Pila sp*)	4790 ± 110
2. KDD 107	Neolithic occupation layer	shell (*Limicolaria sp*)	5170 ± 110
3. GHB	Neolithic grave 25	shell (*Aspatharia sp*)	5660 ± 120
4. GHB	Neolithic grave 6	shell (*Aspatharia sp*)	4990 ± 110
5. GHB	Neolithic grave 7	shell (*Aspatharia sp*)	5660 ± 120
6. KDD 01	Meroiyic grave 15	charcoal	2190 ± 60

WORK AT THE NORTHERN GROUP OF PYRAMIDS AT BEGRAWIYA (MEROE), 1981-82

Friedrich W. Hinkel
Akademie der Wissenschaften der DDR
Zentralinstitut für Alte Geschichte Und Archäologie
Berich Alte Orient
DDR-108 Berlin, Leipziger Strasse 3-4

The reconstruction and restoration work of the Directorate General of Antiquities and National Museums continued with scientific and practical assistance by the Central Institute for Ancient History and Archaeology of the Academy of Sciences of the GDR from 14 December 1981 to 21 March 1982, for its fifth season (cf. NA 11, 14, 15 and 17).

Work concentrated on the reconstruction and restoration of the chapel complex of pyramid N 11 which is attributed to Queen Shanakdakhete (ca. 145-125 BC). The structural arrangement in front of the chapel proper is unique in Merotic funerary architecture and is therefore of special importance. One of its remarkable features is the otherwise unparalleled presence of two pylons in front of the chapel.

A careful search during the last three years in the vicinity of the chapel remains for fallen relief and architectural blocks resulted in the recording of more than 80 blocks or broken parts belonging to the collapsed pylons and chapel walls.

The original placement of the reliefs and blocks in the structure was located last year by a graphic anastylosis based on photographic records and facsimile drawings of the newly found material. The now reconstructed building complex with the incorporated blocks consists of the following architectural members and engraved decorations.

(1) Access from the east seems to have been provided by an axial ramp leading to a raised terrace which is bordered by a combination of retaining and enclosure wall. The remains of this wall were observed by Lepsius in 1844, and recorded as the foundations of a small pyramid which was numbered A 42. Similar remains in front of pyramid N 12 were recorded by Lepsius as A 43 and are now recognized to be the foundation of the Temenos wall (NA 15: 62).

(2) The decorated pylon I, 6m high, stood on the terrace. Its northern wing was originally (after the burial took place) erected on the sand-filled staircase to the burial chambers. All evidence found so far indicates that this pylon wing collapsed in antiquity, soon after it was erected.

The southern part of the pylon was found still standing to a height of about 5m, but hollowed out, devoid of mortar, and in a state of near collapse. The structure was therefore carefully dismantled and a 9m long reinforced concrete beam bridging the staircase to the burial chamber was cast 2m deep beneath the surface. The reconstruction of the whole pylon was carried out on this foundation, thereby incorporating a number of newly secured blocks from the northern wing, the lintel with its laurel decorated cavetto cornice, and the upper cornice of the pylon wing.

The incorporated reliefs on the northern part show fragments of a striding figure of a god making a libation and corresponding in general, as well as in many details, to the 4m high engraved representation of Horus on the southern wing.

(3) Behind the first pylon a succession of two open courts leads to pylon II and to the offering chapel. The walls of the first court are decorated with grapes and vine leaves on its northern and southern sides. The engravings on the western and eastern walls represent four large wine jars into which large scoops dip. Engraved *udjat* eyes protect the access to the second court through a broken lintel doorway.

(4) The top of the exterior walls of the second court were adorned by three short columns, each ending in capitals most probably in the form of dom palm leaves, which did not carry an architrave. The north and south walls were decorated with the well-known procession of cattle led by men and gods. The east side of the partition wall to the first court again shows two large wine jars with their scoops as well as two large palm branches ending in 'ankh signs at the jambs of the broken lintel doorway.

(5) The most elaborate scenes are the ones decorating the eastern face of pylon II. The anastylosis made use of about 30 newly found relief blocks, thereby providing enough information to allow a general description of the composition of reliefs. The elaborate 1.6m high lintel shows, with the Torus roll, three crouching deities facing a central sun disc with uraei from each side. On top of it there is a slightly projecting cornice decorated with a winged Osiris head *en face* flanked by Anubis and Nephthys libating on both sides onto offering tables. The upper part of this heavily decorated lintel consists of a cavetto cornice adorned by the winged sun disc and uraei above a deeply cut denticulation and crowned by an uraei frieze.

On the south wing, Queen Shanakdakhete in an elaborate garment and adorned with jewellery, is shown in sunk relief seated on a Lion throne holding a spear and palm branch in her right hand with her left hand raised in adoration. Under the throne there is space for a block now in the Boston Museum of Fine Arts (MFA 23.871) showing a row of prisoners. An offering table and a priest with an incense burner are standing in front of the queen. In front of her eyes the small side corner of the lintel uraei frieze provided by the projecting cornice bears a relief of two bound fowl as offerings. The seated queen appears again on the north wing in a new kind of triumph scene holding spears in both hands and killing bound enemies.

The reconstructed complex in front of the offering chapel N 11 exhibits a special architectural attraction in its succession and variation of high pylons, well proportioned space and low relief walls in a unique arrangement.

Further work of this season included the dismantling and reconstruction on new foundations of chapel N 28. A protecting roof and a door have been added to chapel N 18 as well. More relief blocks belonging to chapels N 17 and N 34 were secured from the same place where earlier finds of blocks were made. All these architectural and relief blocks were found immediately under the debris of Reisner's activities in 1921-22 when he most probably excavated the burial chamber of N 17.

The facsimile recording of fallen relief blocks and wall scenes continued during the last season. The material now represents photographic and graphic information on about 145 wall scenes in complete, reconstructed or fragmentary state, and is now under preparation for final documentation. Of the 145 scenes only 44 were already known and partly published, but none in a facsimile manner. Furthermore, the cataloguing of reused blocks is progressing.

The examination of the iconographic material together with the evaluation of the structural remains from an architectural point of view will be of importance to future studies on building technology, building sequences, chronology and funeral customs during the last 600 years of Meroitic history.

PRELIMINARY REPORT ON ARCHEOLOGICAL EXCAVATION AT DEBBAT EL EHEIMA, UPPER NILE PROVINCE, SUDAN

Else Johansen Kleppe
University of Bergen Historical Museum
Department of Archaeology
J. Frieles gt. 3 5000
Bergen, Norway

This report describes field work which is a continuation of the research programme presented in NA 15 (1979). The aim of the 1981 field season was to detect sequences of archaeological material which could be useful in seriation studies to work out a chronology for the sites in question. Another aim was to recover data on the subsistence economy.

With reference to ethno-archaeological investigations carried out in the research area it was assumed that in such archaeological sites - so-called *debbas* - the part which had functioned as a dump for rubbish would also yield data needed for chronological studies. With reference to present-day practices among Shilluk as well as among Dinka living the the area, the outskirts of the villages seem to have been preferred as casual dumping places. It is believed that this had been a practice of long standing; the topography of the sites supports this hypothesis. Consequently the excavation trench at Debbat El Eheima was located at the northeastern outskirts of the site where the most prominent rise is seen. The archaeological data revealed in the excavations confirmed the hypothesis.

Debbat El Eheima was selected as one of four sites where archaeological field work will be carried out within the terms of the programme referred to above. With reference to differences in items of material culture noticed on previous inspections of riverine sites in the Upper Nile Province, two sites were selected near Er Renk and two in the vicinity of Malakal. The four sites are:

Er Renk area

Debbat El Eheima 11°45′N 32°46′E Debbat Bangdit 11°35′N 32°46′E

Malakal area

Wij Bur 9°36′N 31°48′E Pareth Kur (Golo) 9°57′N 32°09′E

Debbat El Eheima is situated right at the bank of the White Nile, and it was chosen for this very fact and because interesting information about random

finds had been obtained from here in connection with my first visit to the site in 1975. The excavation during the 1981 season consisted of a trench 12m long and 1m wide, in an ENE-WSW direction, which meant that a section was cut through the highest as well as the lowest part of the habitation mound at the very outskirts of the site.

The trench was excavated in $1m^2$ squares, and the deposits were recorded in 10cm thick artificial strata. In addition to separating artificial strata, differences in soil texture as well as other structures observed were recorded within each stratum. All soil was sifted in order not to miss small finds such as beads, fishbones, etc. The cultural deposits proved to be much more extensive than estimated, and consequently it was not possible during this season to excavate the whole trench area down to natural deposits. Only in five of the twelve squares was this done. The deposits were ca. 2m deep in this part.

The archaeological material revealed was abundant and of a varied nature. Our assumption that the excavation trench might yield parts of a rubbish heap proved to be correct. Osteological material as well as shell fragments were abundant, primarily in the lowest part of the trench. Potsherds were numerous; throughout the excavated area 33,965 sherds were recorded, excluding sherd fragments (Hultén 1974:29), and several nearly complete pots were found. Stone artefacts or fragments were scattered throughout the excavated area, but they were not numerous and total only 1,030 pieces including 70 fragments of grinders and 14 hammerstones. Fragments of 40 iron objects were found, the majority between 0 and 90cm below the surface. Only 4 fragments occurred in deeper levels, and none below 1.30m. A number of personal adornments were found including ceramic bracelets (17 fragments), shell pendants (31 fragments) and various kinds of beads: ceramic (19 pieces), glass (1 piece) and ostrich eggshell (240 pieces). A few unidentified fragments of organic material and a few fragments of *galous*, i.e. dried mud used in house construction, were found.

None of the structures observed in the excavation trench could be identified as remains of dwellings. The deposits were chiefly parts of a kitchen midden. The biggest concentration of food remains – osteological material and shells – was found at the lowest part of the excavation trench, i.e. at the very outskirts of the archaeological site. The material is being studied by Dr. Gautier in Gent. Further comments will have to wait until his work on the material is finished.

Parts of two burials were recovered in the trench. Both graves had been covered by a layer of large potsherds which was at least 25cm thick. The skeletons were found just below the sherd cover. Attempts to identify possible downcuttings into the deposit made at the time of burial were unsuccessful. The skeletal remains enabled us to reconstruct the disposition of the deceased. It was possible to associate specific objects with one of the burials; namely a brass bracelet and 214 ostrich eggshell beads.

The work of analysis is still in progress, and one radiocarbon date is being processed. When the result is ready two more samples will be processed. Almost no charcoal was recovered, and only one sample proved to be of a standard acceptable for dating purposes. This sample comes from square 12, stratum 7, on the outskirts of the site in a part of the kitchen midden where little or no disturbance seems to have occurred. The two other samples to be dated are osteological material. These will be selected so that they can be taken to represent the earliest part of the cultural deposits in this part of the site.

A second field season is planned to start in December 1982, and will be devoted to excavation at one or more of the other sites included in the licence. The following features have guided the selection of these sites. Debbat Bangdit was selected because of its location on the main wadi in the Er Renk district, Wadi Gasir el Abyad. One would assume that this water course had been active at the time represented by the archaeological deposits. This assumption is to be tested through excavations. The two sites in the vicinity of Malakal were chosen because of their proximity to the homes of potters, and because of information collected during previous visits (Kleppe 1982) about deposits of pottery clay. The site at Wij Bur is situated close to the White Nile, while Pareth Kur is located at a distance of at least half an hour's walk away from the river with no other water source, seasonal or perennial, closer by.

Ethno-archaeology has been included as a vital part of the project. During the coming field season extra time is to be devoted to this when working in the Malakal area, i.e. within the land of the Shilluk kingdom. Last year's field season yielded some interesting ethno-archaeological data of a general nature. Debbat El Eheima has a mixed population; the majority are Shilluk, but in addition some claim to be descendants of the Khalifa and to come from Aba Island. Some westerners and some southerners also live here.

References cited

Hultén, B.
1974 On Documentation of Pottery. Acta Archaeologica Lundensia, Series in 8° minore, No. 3. Lund.

Kleppe, E.J.
1982 Habitation mounds in Shilluk land. In, P. van Moorsel (ed.), New Discoveries in Nubia. Proceedings of the Colloquium on Nubian Studies, The Hague, 1979. Leiden.

RADIOCARBON MEASUREMENTS FOR THE NEOLITHIC SETTLEMENT AT KADERO (CENTRAL SUDAN)

Dr. Lech Krzyzaniak
Muzeum Archeologiczne
ul. Wodna 27
61-781 Poznań
Poland

The Neolithic settlement at Kadero is dated so far by six radiocarbon measurements. The following uncalibrated results have been obtained for the two middens which constitute the remains of the Neolithic occupation on the mound.

Southern midden

5260 ± 90 BP (T-2188)

5030 ± 70 BP (T-2189)

5280 ± 90 BP (SMU-482)

Northern midden

5500 ± 70 BP (KN-2821)

5610 ± 55 BP (KN-2822)

5380 ± 65 BP (KN-2823)

All measurements were obtained from river shell (Nilotic bivalves). The differences in age between the two middens are also evident from the ceramics and lithic implements. Both middens contain similar and very high frequencies of domestic animals, mainly cattle.

An account of the excavations at Kadero in 1972-1980 (first nine seasons) is to be delivered to the press in 1983.

BUTANA ARCHAEOLOGICAL PROJECT: INTERIM NOTE

Anthony Marks
Southern Methodist University
T.R. Hays
North Texas State University
Yousef Elamin
University of Khartoum
Abbas Mohammed Ali
University of Khartoum

Since the end of the first field season (initial results reported in NA 20), work has been given over to initial laboratory analyses, faunal identification, ^{14}C dating, etc. To date, no conclusions may be reached as to the details of the culture history of either the eastern or the western fringes of the Butana, yet our picture of each is slowly coming into focus.

Western Butana: Shaqadud Area

Initial sorting of sherds and lithic materials from both the midden and the cave at Shaqadud confirms our first impressions, and those of Otto as well. The midden material may be stratigraphically divided into three main periods. The upper 40cm is a late Neolithic (pre-Meroitic) which is comparable to much of the material in the cave. From ca. 40cm to ca. 90cm there is a dense accumulation of burnished sherds which are comparable to the Shaheinab Neolithic, although the proportional distribution of motifs is quite distinct from that at Shaheinab or from Kadero (as reported in NA 18). A single ^{14}C sample on charcoal from level 75-80cm has provided a MASCA-calibrated date of 4490 BC ± 81 (SMU-1134). From ca. 90cm down, the sherds *tend* to lack burnishing and fall within the range described for Early Khartoum. To date, only the top 60cm of these lower deposits have been opened out of a total depth of about 1.4 meters. At the moment, however, the second field season is underway and excavations at the midden are again in progress. Thus, we may expect the complete sequence to be sampled and datable materials recovered for all the main occupation horizons.

Within the midden, faunal material is in good condition but not abundant. There is no sign of domestic forms in either the Early Khartoum or Neolithic occupations, but there is a wide range in the animals found, from frog to buffalo.

The chipped stone material from the midden is

curious. First, although a considerable amount of debitage was recovered, there were few formal tools. By far the dominant tools in both the early and Neolithic levels are lunates, followed by retouched flakes, notched pieces, and denticulates. Virtually all tools were made on quartz, although a very few pieces were made on a locally available low-grade quartzite. Totally missing from the chipped stone assemblages were gouges and large lunates, while scrapers were exceedingly rare. By any standards, these assemblages are very limited.

Analysis of the cave materials has indicated that, although some ceramic changes are apparent, at least the top 2.5m of deposit belong to a basically homogeneous cultural manifestation.

The ceramic materials indicate a wide range of motifs and surface treatments but the most common form is unburnished and has been decorated with parallel incised lines. These may be horizontal, oblique, zoned or even banded. Some sherds are virtually identical to those illustrated by Arkell and called "Pan-grave".

The lower third of the cave deposits provided only small ceramic and lithic samples. These, however, appear to differ from those above in having a much higher percentage of undecorated, burnished sherds and a much smaller range of incised motifs. Current excavations are trying to acquire significantly larger samples from these lower levels.

Three ^{14}C dates have been run so far. They only date the upper two-thirds of the deposits but suggest that the upper 2.5m accumulated very rapidly. The calibrated dates range from 2178 BC$\pm$93 (SMU-1133) to 2801 BC$\pm$91 (SMU-1128). This places the cultural materials into the "late" Neolithic of which so very little is known. Geus refers to it as Phase 2, Arkell as pan-grave, and, perhaps, it is comparable to Middle Kerma. So little is known of it that it is not even clear whether it represents a Nilotic development or whether it is intrusive into the Nile Valley.

Faunal materials from the cave indicate the exploitation of both domestic and wild animals, including a large range of bovids, giraffe, hare, porcupine, mongoose, aardvark, equids and suids. To the best of our knowledge, these are the first skeletal elements of giraffe which have been recovered archaeologically from the central Sudan. Their late date – 3rd millenium BC – indicates that the area might well have been rich in large game until fairly recently.

The lithic materials from the cave are similar to those from the midden; mainly lunates, retouched pieces and denticulates. However, some microliths are made on chert and agate, both of Nilotic origin. Ground stone was present throughout but the only form associated solely with the cave deposits was an elongated handstone with a square cross section. All the others are rather nondescript and, of course, those earlier ones associated with the midden occupations would have been available to the later residents of the cave.

In summary, present studies suggest that the midden was formed beginning in Early Khartoum times (actual date still unknown), was occupied intensively at about 4500 BC during a Neolithic stage, and was later occupied during the 3rd millenium BC. The two early occupations, so far, seem to be associated solely with hunting, although faunal samples are still small. The beginning of the cave occupation is not yet dated but the meager ceramic sample hints at a post-Shaheinab occupation. The majority of the cave sediments, however, were accumulated during the 3rd millenium BC when the cave was occupied by peoples who had domestic animals but also hunted to a considerable degree. The presence of large numbers of grinding stones in both the midden and cave is indicative of considerable plant processing. To date, however, the macrobotanical material has not been identified.

While it is probably that the two early occupations of Shaqadud represent significant habitations within, at best, seasonally determined settlement systems, it is probable that the cave occupation represents an outlier of what was probably a complex and stratified settlement system. Thus, while the cave may well provide the first reasonable chronological control from 3rd millenium BC ceramics in the central Sudan, it is unlikely to provide great insight into the range of adaptive patterns which existed in very late Neolithic times. The excavations now in progress are planned to increase the sample sizes from the midden and the cave, as well as to stratigraphically tie pond deposits in front of the cave with the midden deposits. By the end of this field season, sufficient datable materials will be available from all levels of the midden and, with luck, from the lower third of the cave as well.

The Eastern Butana: Khashm el Girba

The artifact samples from sites in the area of Khashm el Girba on the Atbara were considerably larger than those from Shaqadud and analyses are still in preliminary stages, for the most part. It is clear, however, that the pioneering work of Joel Shiner needs serious revision. It is already apparent that there are basically two ceramic traditions, one

of which incorporates what he called the Saroba, the Butana and the El Hagiz. It seems that he may have been seeing phases within a single tradition but analyses so far indicate continuous development of basic ceramic forms, treatments and styles. The earliest ceramic site, KG14, may stand alone in that it appears to be related more closely to the Khartoum Tradition than it does to any later ceramic assemblage. The only anomaly is the presence of "nobbed" ware of a type found at early Kerma and in the Gash Delta. This site is of particular interest, since it is the only one where fishing seems to have been a significant activity. A calibrated ^{14}C date places it at 5040 BC $\pm$ 90 (SMU-1139). In the light of the absence of ^{14}C dates from early Kerma, this date indicates that, perhaps, the latter's guess- date may need some revision (NA 16).

The vast majority of ceramic sites were found on the eastern side of the Atbara River in the area known as the Atbai. This region of flat plain between the Atbara and the hills of Ethiopia seems to be full of related sites (including those reported in the Gash Delta by Fattovich in previous issues of NA). It is suggested that these sites are part of a single tradition which covers a huge area and which might best be called the Southern Atbai Tradition. Its temporal and geographic parameters are still unknown but a series of ^{14}C dates are eagerly awaited from our work and the previous work of Shiner and Fattovich suggests that it was certainly present during the 3rd and 2nd millenia BC.

At the moment, its ceramic manifestations might best be described as containing a variable but always significant number of thick sherds from unslipped open bowls which have decorations formed by regular scraping of the interior, exterior, or both. Less regular wiping is also characteristic at many sites. Others include very fine black burnished wares, rare red burnished wares, unburnished wares with incised lines (rather like the sherds from Shaqadud cave), sherds with exterior burnished decorations, sherds with interior burnished decorations, and even ripple ware. Sherds with zoned decorations are present at some sites, while those with impressed decorations are found at most sites. In short, there are a large number of types, with a multitude of decorative techniques and patterns. Seriation studies have begun but, without question, ^{14}C dates will be vital in establishing a realistic sequence.

This Southern Atbai Tradition is characterized by large sites, up to 150,000m^2 in area and with 2m of midden deposit. It seems that these were villages of some size, although it is not yet clear whether they were occupied year-round or only seasonally. Domestic cattle and goats are present at some sites but the faunal samples are still small and more are required before we can tell whether there are significant differences through time or space.

Also in the Khasm el Girba area is a series of sites which seem to represent temporary camps. They are generally large but lack deep cultural deposits and evidence for structures (daub). At these sites the ceramics tend to be chaff-tempered (rare in the Southern Atbai Tradition), the decorative motifs are never more than simple incised lines, and the sherds are usually red slipped. None of these sites has been dated but it is likely that they post-date the Southern Atbai Tradition.

Aside from the ceramic sites, a series of non-ceramic sites are located on the east side of the Atbara. Analyses have shown that they are based on a developed blade tradition, the tools are outsized geometrics or tiny complex scrapers, among others, and the exploitation seems to have been mainly a combination of fishing and big game hunting. A very few ground stone fragments were recovered and two of the sites have large geometric-like tools with sheen. Again, we await radiocarbon dates from one of them. This complex of sites is curious in that the developed technology is quite isolated geographically. The earliest of the ceramic sites, KG14, has no blade technology and none is present at even later sites. Comparable technology is unknown in the central Sudan and, perhaps, such is not found except in the western desert of Egypt.

In spite of the emphasis on ceramics which seems to be the normal outcome of dealing with ceramic-containing sites, the chipped stone of the Southern Atbai Tradition is quite distinctive, although the proportions of the various classes shift markedly from site to site and, perhaps, even between different areas of the same site. First, there is always a bipolar technique present but it is almost exclusively associated with agate. The major tool classes are perforators, picks, denticulates and small geometrics. In fact, at some sites the numbers and varieties of perforators are incredible. Other tools include poor scrapers, notches, retouched pieces, truncations, etc., but for these classes there is little variability which is not seemingly idiosyncratic.

SOCIO-ECONOMIC ASPECTS OF METAL PRODUCTION IN THE WESTERN TRANSVAAL (SOUTH AFRICA)

Dr. H.M. Friede
Archaeological Research Unit
University of the Witwatersrand, Johannesburg
1 Jan Smuts Avenue
Johannesburg 2001
South Africa

In one of the earliest discussions on metal production in South Africa A.J. Goodwin (1952) stated,

> The use of metals in Africa is essentially professional and can in only rare instances be regarded as a village craft. 'Iron doctors' sometimes despised, sometimes respected, were generally itinerant, moving from one tribe or village to the next.... The craftsman spent his life making essentials where they were needed and never rose above the level of the travelling smithy.

However, there is little archaeological or ethnographical evidence for the activities of such "iron doctors" in South Africa. It appears that contrary to Goodwin's opinion, iron production was mostly in the hands of village smiths or small family groups, fitting into the general pattern of the agricultural subsistence economy of the South African Iron Age people. The village smiths worked either part or full time, depending on the demands of the community. In some cases, a village-based workshop may have been organised by a chief or may have developed to a larger commercialised enterprise of a corporate group of miners, smelters and smiths (Bullock 1936). Only in a few cases was metal produced on a large scale at factory sites by clans or in a royal arsenal (Ryburn 1940).

Such patterns of organisations were also present amongst the Tswana/Sotho people living in the S.W. Transvaal. In some tribes metal production was traditionally connected with certain families or clans. The Bakgatlas believed that no one could smelt iron if he had no knowledge of certain medicines and that such knowledge was possessed by a few families only (Livingstone 1961). Boshier (1969) says in his report on the copper mines of the Dwarsberg area (W. Transvaal) that,

> ...each mine was owned by a family who, apart from working the mine themselves, employed labourers. As many as one hundred persons, both men and women, might work at a single mine. The head of the ruling family was called mogolwe, father of them all.

There were a number of South African tribes who were renowned as iron workers, such as the Ba-Rolong, the Hurutse and the Lete of the Western Transvaal.

The history of the Ba-Ga-Malete (Ellenberger 1936) records that one of their chiefs who lived around the end of the 16th century, led the tribe to a place called Lekgopung (near the present Pietersburg) "where they dug for iron". Later the tribe migrated to the iron-rich Magaliesberg and finally (around 1830) to Rabogadi in the Western Transvaal, "where they also mined iron". The Ba-Ga-Malete did not have cattle when they settled there, but they built up a large trade with the neighbouring tribes supplying axes, spears, hoes and bracelets in return for goats and later for cattle.

These reports show that the iron producing activities of a tribe could last for centuries and were even continued when its people moved to places far away from their original settlements and ore sources.

There are no indications that any organisation resembling the 'Guild system' (as established in pre-industrial Europe and to some degree in Iron Age West Africa) existed in South Africa. Specialisation in metal production seldom went beyond the separation of iron workers and copper workers and the functional division of miner-smelter-blacksmith (Bullock 1936).

REFERENCES CITED

Boshier, A.K.
1969 Mining genesis. Mining survey. Chamber of Mines of South Africa 64: 21-28.

Bullock, J.B.
1936 Primitive iron-smelting in South Africa. Iscor News, pp. 399-405.

Ellenberger, V.
1936 Di Robaroba Matlhakola – Tsa Ga Masodi-a-Mphela. Trans. Roy. Soc. S. Afr. 25(1): 33-44.

Goodwin, A.J.H.
1952 Metal age or iron age ? S. Afr. Archaeol. Bull. 7: 81.

Livingstone, D.
1961 Missionary Correspondence 1841-1856 (edited by I. Schapera). London.

Ryburn, G.
1940 Dingaan's iron mines. Iscor News, p. 420.

SOUTH AFRICA

Aron Mazel sends the following report on the activities of the Archaeology Department, Natal Museum, Pietermaritzburg, South Africa.

Aron Mazel is presently engaged in a large scale excavation project of Later Stone Age sites in the Tugela Basin, the largest water catchment area in the province of Natal, South Africa. The project began in April 1981, and to date six sites have been excavated. These are concentrated in three of the four main ecological regions which have been recognized in the basin by Edwards (1967). Clarke's Shelter and Diamond 1 are in the Montane Region, Gehle Shelter and Mgede Shelter in the Uplands Region, Nkupe Shelter is in a thin tongue of the Upland Region which extends into the Savanna Region, and Sikhanyisweni Shelter is in the Savanna Region.

Four of these sites (Clarke's Shelter, Diamond 1, Mgede Shelter and Nkupe Shelter) have been dated by Dr Vogel of the National Physical Research Laboratory, Pretoria, and all are within the last 5000 years. It should be pointed out, however, that there is still some 70cm of deposit below a layer dated to 4590 ± 70 BP (Pta 3276) at Nkupe Shelter, but the initial occupation of the site is not expected to be older than 8000 years. Preliminary analysis of the artefact assemblages shows that there are substantial chages in the artefact record in this area over the last 5000 years, and also that there is considerable variability in the formal tool frequencies among the sites in the different ecological regions. Faunal assemblages have been recovered from all sites and these are being analyzed by Professor Richard Klein of the University of Chicago. Botanical specimens were recovered from Nkupe Shelter (in large quantities) and Mgede Shelter but analysis of these has not yet begun. Cultural remains in the form of worked bone, pottery, ostrich eggshell and achatina beads, iron and ochre have also been recovered from the sites.

Further field research will be concentrated in the savanna and possibly coastal regions, depending on the time available and the finding of suitable sites. The fieldwork programme is to be completed by the end of 1983, whereupon the work will be concentrated on completing the analyses of the collections and writing up the results.

Other than the Tugela Basin project, members of the Department have been engaged in the survey and rescue of archaeological sites in two areas scheduled for flooding. A foot survey of the Mkomazi Dam site in southern Natal was undertaken in September 1982, and 54 new archaeological sites were located. Thirty two of these were Stone Age sites and the remaining 22 belonged to the Late Iron Age. An aerial survey has been done of the Mvumasi Dam site on the Tugela River in central Natal, and a foot survey is scheduled for the middle of 1983.

PASTORALISM IN THE WESTERN CAPE

Andrew B. Smith
Department of Archaeology
University of Cape Town
Rondebosch, Cape 7700
South Africa

The previous work done by the writer on prehistoric pastoralism has failed to identify and isolate the discrete characteristics of pastoral sites in the Cape Province. This is due to several factors:

(a) the archaeological "invisibilty" of transhumant pastoralists;
(b) the short period of time pastoralists have occupied the southern part of the continent, i.e. since after 2000 BP;
(c) the transition from small stock to cattle herding;
(d) the similarity in many ways between the Khoi herders and San hunters in the Western Cape.

The research is focussed in two directions. The first of these is excavation in an area where pastoralists and their animals are known historically to have conregated in sizeable population densities. Attempts are being made to identify what constitutes a "pastoral", as opposed to a "hunter" site. The test excavation at one site, Kasteelberg, has produced significant quantities of sheep bone throughout the sequence. Large bovids are also represented, but we are as yet unsure whether cattle are included.

The second direction of research involves an ethno-archaeological study being conducted among Nama-speaking herdsmen along the Orange River. This is designed to elicit land-use and settlement data in a permanent riparian system as a key to identification of similar processes among pastoralists described by early travelers along the river in the 18th century.

Site surveys are being conducted in the Swartland area of the Western Cape and it is hoped eventually that we will be able to reconstruct the seasonal transhumant patterns of the early Khoi in this area.

SWAZILAND ARCHAEOLOGICAL RESEARCH ASSOCIATION

David Price Williams and Larry Barham
Swaziland National Trust Commission
P.O. Box 100
Lobamba
Swaziland

Following an extensive season of excavation from June to August 1982 we can provisionally report on an item of considerable interest. Recent excavations concentrated in the Lubombo Mountains in north-east Swaziland were initially centred upon the Siphiso Rock Shelter. The sequence here commences with modern and Late Iron Age traces at or near the surface, beneath which are a detailed series of ash and spall lenses containing material of Wilton type. The assemblages are dominated by small, convex, steep-nosed scrapers made of chalcedony. Accompanying material includes small numbers of segments and quantities of eggshell beads. Provisional morphometric analysis suggests that on comparison with other sites in southern Africa, the main levels here are 'Climax Wilton'. Considerable interest naturally surrounds this occurrence.

Beneath these Wilton levels are further discrete horizons containing totally different material. The characteristics of these underlying assemblages are small ($\pm$15mm) microblades, together with prismatic microblade cores. Microblades and cores are sometimes bipolar. In a typical horizon blades may occur in numbers up to 20 per square meter. Raw materials include chalcedony and quartz, with the emphasis on quartz. With the microlithic elements are large flakes ($\pm$70mm) of coarse rhyolite. The flakes are as broad or broader than their length and several types have already been identified. One recurring form has a sloping flange opposite the striking platform. Whilst the microblades seem to show little if any retouch, the larger flakes often exhibit heavy edge damage through use. Eggshell beads also occur in these levels, as well as extensive faunal remains. It is noticeable that no 'Wilton' type scrapers or segments have been found here.

The stratigraphy of the site indicates that these microblade levels are pre-Wilton, but indications are that they are still Late Stone Age. However, none of this material seems to parallel the Oakhurst/Albany industries which immediately preceed the Wilton elsewhere in southern Africa. In any case, the Oakhurst/Albany industries have probably already been seen in Swaziland, and they do not resemble the microblade industries presently under discussion. The best comparison of the microblades and cores is with the provisionally-named Robberg Industry as seen at Nelson's Bay Cave and Boomplas, and which is known from very few sites. The dates in the Cape cover the period approximately from 12,000 to 18,000 BP. This material has never before been seen as far north or east as Swaziland, hence the importance of the site. There is substantial area and depth as yet unexcavated.

Even more noteworthy are the numerous open-air occurrences of this microblade industry which have been identified in the immediate vicinity within a radius of 15km so far surveyed. Rhyolite quarries have been located, adjacent to which are cores from which the large flake component has been made. There are also a number of sub-surface scatters of the material, including microblades and microblade cores, near areas which presently have winter standing water. It appears that this pre-Wilton industry of the Lubombo is to be found generally in the Swaziland Bushveld and the Lubombo Mountains. Detailed excavation both of the Rock Shelter and the open sites is planned over the next few years.

A number of samples have already been submitted for ^{14}C determination. Other analytical programmes are being conducted at the University of London, the University of Oxford and the University of Pennsylvania. Particular success has been achieved with the new palaeobotanical project at Imperial College, University of London, where charcoal fragments from these sites are being examined using Scanning Electron Microscopy. More detailed results of these programmes will be published shortly.

RECENT PUBLICATIONS

Price Williams, D. and A. Watson
1982 New observations on the prehistory and palaeoclimate of the Late Pleistocene in southern Africa. World Archaeology 13(3):372-381

Price Williams, D., A. Watson and A.S. Goudie
1982 Quaternary colluvial stratigraphy, archaeological sequences and palaeoenvironment in Swaziland, southern Africa. The Geographical Journal 148(1):50-67

ZAMBIA

Mr. J.S. Jambo sends the following report on research projects of the Zambia National Monuments Commission.

Mr. Joseph Jambo, Deputy Director of the National Monuments Commission of Zambia, will be carrying out archaeological survey in the Mumbwa area of the Central Province. This will involve field work in search of potential archaeological sites for future excavation. Those sites discovered will be mapped, and test pits will be sunk on a few selected sites. It is hoped that this survey will identify sites to be thoroughly excavated next year. Excavation in the Mumbwa area will be tied in with the Mulungushi research which was carried out by Mr. Robertson, and will also provide good archaeological coverage of the Central Province.

The National Monuments Commission will also be carrying out rescue/salvage work in the Chishimba Falls area which is being developed for an irrigation scheme. The Department of Agriculture, Kasama, has already provided funds for salvage. The whole area will be surveyed for archaeological sites and a few test trenches will probably be excavated on selected sites.

Mr. N.M. Katanekwa, the Director of the National Monuments Commission, will continue his Upper Zambezi research project in parts of western and northwest Zambia.

RESEARCH IN ZAMBIA:

PERMITS FOR RESEARCH AND AFFILIATE STATUS

The following information is abstracted from a leaflet dated October 1980 and sent by the Director, National Monuments Commission, PO Box 60124, Livingstone, Zambia.

Applications for all archaeological and palaeontological research should be addressed to the Director. Permits will normally be issued by the staff, but may be referred to one of the Commission's biannual meetings. A visiting research worker, whether senior scholar or registered student, will normally be expected to apply for status as an Affiliate of the Commission. Application for either a Research Permit or Affiliation must be by means of a fully documented research proposal which sets out clearly:

1. The problem, scope and objectives of the research;
2. The scholarly significance, relevance and desireability of the research in terms of the overall pattern of Zambia as a country or as part of the African continent;
3. The organization of the research project including particular areas of emphasis, theoretical approach, research area, plans and methods;
4. Length of time envisaged to complete the project;
5. Facilities likely to be needed from the Commission;
6. Full details of the applicant including:
   (a) finance available and publication programme - especially guarantees that can be given regarding full and adequate publication of results;
   (b) how, and by whom, the research will be supervised;
   (c) if the applicant is a student, information on his or her status from the institution including the degree for which the research is being undertaken;
   (d) evidence that independant and adequate funds are available for both the research and personal needs while in Zambia;
   (e) names of at least two academic referees;
   (f) feasibility of the project;
   (g) a curriculum vitae.

In that the Commission has equal duties to promote research and protect sites, applications will be considered in both of these areas. However, re-excavation of a recently excavated site would be unlikely to gain approval, nor would a proposal to work in areas which are currently, or have recently been, under investigation. A research student planning excavation should be able to give some formal expectations of proper publication other than in dissertation form.

Obligations and Privileges of a Research Affiliation: Permits are issued subject to written acceptance by the permit holder of a series of formal conditions. These define the area, type and period of work, determine the final destination of the finds within Zambia, and require the completion of a final report in a limited time and the submission of copies to the Commission among other conditions.

Once accepted as an affiliate or issued a permit, the applicant will be required to pay in advance an

affiliation fee of K250 or a permit fee of K25 per year. The affiliate will have access to the Commission Library, the Museum Library and archival material, and the advice and assistance of members of staff.

The applicant will, in addition, receive support from the Commission in his application for a study permit to enable him to enter the country and to conduct research. If required, the Commission will also administer the research grant. Other facilities include the provision of limited work space if desired and when available; loans of some equipment; in exceptional cases loans of vehicles or personnel may be given at extra fees and the payment of a subsistence allowance; access to or assistance with residential accomodation when available. Plans should not, however, assume that most of these will be available.

Export Permits: Visiting researchers are encouraged to study their finds in Zambia. Export permits may be granted for temporary export of finds for analysis or illustration subject to a guarantee of their return to the Commission, in a specified period of time at the expense of the permit holder. Certain classes of palaeontological material (e.g. microfauna samples) may receive permits for permanent export with the concurrence of the Commission and the Geological Survey Department.

For more detailed information, those interested should write to the Director, National Monuments Commission at the address given above.

ARCHAEOZOOLOGY

Dr. C.S. Churcher, of the University of Toronto, reports that he is working on the faunal remains from Dakleh Oasis, Western Desert of Egypt. Most remains are from Neolithic levels, both ceramic and 'aceramic', and include medium and small sized mammals in both horizons. The 'aceramic' apparently yields larger mammals such as elephant, Grevy zebra and buffalo. Avian remains occur in the ceramic Neolithic horizons and others attributed to Old Kingdom times. A tortoise has been recovered from an Old Kingdom site. Four genera of freshwater mollusca are common at sites from Neolithic times onwards.

A second project is a report on the zebras in the Olduvai Gorge deposits. This is a long-term project based on the various elements recovered by the Drs. Leakey over their years excavating in Olduvai Gorge.

Dr. Achilles Gautier (Laboratorium voor Paleontologie, Rijksuniversiteit Gent, Krijgslaan 271, B-9000 Gent, Belgium) and collaborators are currently investigating archaeozoological assemblages from the following Neolithic sites in the Sudan: El Kadada (F. Geus), Geili, Saggai (I. Caneva), El Kadero (L. Krzyzaniak) and Umm Marahi (A. Mohammed-Ali). Work has also been started on faunal remains from Shaqadud and sites in the Atbara region which are being excavated by A. Marks and associates. A revision of the fauna of El Shaheinab and Early Khartoum collected by the late A.J. Arkell is also planned.

A revision of the fauna of Ti-n-Torha (Acacus, Libya) has been finished and should be published shortly (in Origini, Rome). The study of the fauna from Uan Muhuggiag in the same region will be combined with new materials excavated by B. Barich.

A detailed analysis and re-assessment of the faunas collected at Nabta and Bir Kaseiba in the Western Desert (Combined Prehistoric Expedition, F. Wendorf and associates) will be published shortly. The team is also processing materials from Wadi Kubbaniya near Aswan, and has finished a revision of the faunas of both Kom Ombo and predynastic Toukh, originally studied by C. Gaillard.

The general aim of the research program is to gain more insight into the origin of African domestic cattle and their movements and import in prehistoric times. If archaeozoological assemblages from other regions in North Africa are available for study we would appreciate receiving information about these. We would also appreciate information on recent publications concerned with prehistoric cattle pastoralism etc. which may not be easily available.

PEOPLE

Dr. J.R.F. Bower, Iowa State University, informs us that he has received a Fullbright Fellowship to study collections of Pastoral Neolithic artifacts in the Kenya National Museum, with special attention to the lithic materials. The project is aimed at identifying stylistic and technical characteristics of the industries which may be useful for distinguishing among cultural entities. As well, he will try to recognize attributes (such as wear patterns) that may be helpful in the interpretation of settlement behavior. With luck, the results of the study may dove-tail with ceramic analyses of Pastoral Neolithic pottery being conducted by Peter Robertshaw and Dave Colette; with the obsidian source study being carried out by Harry and Joan Merrick and Frank Brown; and with Stephen Mbutu's investigation of use-wear patterns in Pastoral Neolithic assemblages from the Central Rift Valley. Dr. Bower arrived in Kenya during October 1982, and expects to complete the project by April 1983.

Graham Connah of the Department of Prehistory and Archaeology, University of New England, Australia, wishes it to be known that during 1983 he will be attached, as a research associate, to the African Studies Centre of the University of Cambridge, England. His intention is to work on a book concerning aspects of the prehistory of African iron technology, using both archaeological and ethnographic data. He would be very interested to correspond with others interested in this field or in parts of it. He would be particularly interested to hear about relevant theses whose existence he might be unaware of and about other unpublished data of significance. He would also be grateful for news of any relevant research projects presently being pursued. Colleagues wishing to contact him should address correspondence to him at The African Studies Centre, University of Cambridge, Free School Lane, Cambridge, CB2 3RQ, United Kingdom. He will be at that address from 5 January 1983 onwards.

NEW PUBLICATIONS

The British Institute in Eastern Africa

The Institute (PO Box 30710, Nairobi, Kenya) informs us of the following recent and forthcoming publications.

Azania 16 (July 1982) contains the following:

- -David Phillipson: *A preliminary archaeological reconnaissance of the Southern Sudan, 1977-78.*
- -Nicholas David, Paul Harvey and C.J. Goudie: *Excavations in the Southern Sudan, 1979.*
- -P.T. Robertshaw and Andrew Mawson: *Excavations in Eastern Equatoria, Southern Sudan, 1980.*
- -Hamo Sassoon: *Ceramics from the wreck of a Portuguese ship at Mombasa.*
- -Richard Pankhurst: *Imported textiles in Ethiopian eighteenth century manuscript bindings in Britain.*
- -Daniel Stiles and S.C. Munro -Hay: *Stone cairn burials at Kokurmatakore, northern Kenya.*
- -David Phillipson and Diane Gifford: *Kulchurdo rock shelter and the Stone Age of Mount Marsabit.*

Culture History in the Southern Sudan: Archaeology, Linguistics and Ethnohistory, edited by John Mack and Peter Robertshaw is due at the end of 1982. The volume contains archaeology papers by N. David, E.J. Kleppe, P. Robertshaw and B.M. Lynch, with geomorphological background by C.P.D. Harvey. Ethnography is provided by J. Mack and S. Tornay, while linguistic analyses are contained in essays by C. Ehret and G. Dimmendaal. Historical perspective and an overview are presented by Sir Laurence Kirwan, R.S. O'Fahey and Professor Roland Oliver. The monograph contains 178 pages, 33 figures and is available from the Institute for £15.

Azania 17 will appear in 1983 and the contents will include:

-Michael G. Kenny: *The stranger from the lake.*
-Hamo Sassoon: *The mosque and pillar at Mbaraki.*
-Nicholas David: *Tazanu, megalithic monuments of Central Africa.*
-Richard Pankhurst: *A regional analysis of Gabata and other board games of Ethiopia and the Horn of Africa.*
-Robert Soper: *Archaeo-astronomical Cushites, some comments.*

PALAEOECOLOGY OF AFRICA, VOL 15

Volume 15, containing the proceedings of the congress of the South African Society for Quaternary Research (SASQUA) held at Pretoria in 1980, has been issued. In this volume 30 articles appear dealing with Caves and Fossil Sites, Palaeoclimates, Cenozoic Stratigraphy and the Namib Desert.

Manuscripts for volume 16 can be sent to the editors or to the publisher before 1 April 1983 at either of the following addresses.

Dr. J.A. Coetsee & Dr. E.M. Van Zinderen Bakker
Institute for Environmental Sciences
University of the O F S
Bloemfontein, South Africa

or

Mr. A.A. Balkema
P.O. Box 1675
NL 3000 BR Rotterdam
The Netherlands

Dr. Matthew Hill has drawn our attention to the following which, he says, "must now be considered the basic reference on the stone monuments of Senegambia".

Thilmans, G., C. Descamps and B. Khayat
1980 Protohistoire du Sénéga. Recherches Archéologiques, Tome I: Les Sites Mégalithiques. Mémoires de l'Institut Fondamental d'Afrique Noir, No. 91.

Volumes II (Les Sites du Fleuve) and III (Les Amas Coquilliers) are still in preparation.

Allyn L. Kelley of the Egyptian Department, Royal Ontario Museum announces that his edited volume *Papers of the Pottery Workshop, Third International Congress of Egyptology, Toronto, September 1982*, will be available in January 1983 at a cost of $5.00. Orders may be placed with: The Egyptian Department, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, M5S 2C6, Canada.

AFRICAN OCCASIONAL PAPERS

This new series, to be issued from the Department of Archaeology of the University of Calgary is intended to make available factual information contained in theses on topics relevant to the archaeology, and related subjects, of Africa, submitted for higher degrees and which are not normally available.

A need for such a series has become noticeable in recent years since valuable information from such theses is being quoted and used to support arguments, hypotheses and interpretations by the few with access to the works. Frequently these theses are available only in single copies in universities where facilities for copying are scarce and it seems that making the information contained in them more easily available would be useful.

The series will consist of edited versions of theses – mostly, but not exclusively, from African universities. The aim of the editor will be to ensure that the factual information is presented clearly and as well illustrated as costs will permit.

The format and method of production will be as economical as possible with the aim of keeping the selling price to the minimum necessary to cover costs. It is not intended that the series should make a profit. The series will be edited by P.L. Shinnie.

The first issue, which will be available by December 1982, will be:

Traditional African Iron Working by François J. Kense (M.A., University of Calgary).

The following will appear shortly thereafter:

Bono: Manso An Archaeological Investigation Into Early Akan Urbanism by K. Effah-Gyamfi (Ph.D., University of Ghana).

An Archaeological Contribution to the History of Wenchi by K.J. Boachie-Ansah (M.A., University of Ghana).

The degrees listed after the authors' names indicate the degree for which the thesis was submitted.

The price will be $10.00 per issue and copies can be obtained from the editor:

P.L. Shinnie
Department of Archaeology
University of Calgary
Calgary, Alberta, Canada
T2N 1N4

Who would be pleased to hear from those who wish to have their theses published. Archaeology, Anthropology, Ethnography and Historical Linguistics are all appropriate.

MEETINGS

International Symposium On Late Cainozoic Palaeoclimates of the Southern Hemisphere: Swaziland 1983

This symposium organized under the auspices of SASQUA, will be held from 28 August to 2 September 1983, at the Royal Swazi Spa, Swaziland. The main topics to be covered will be:

1. Major Hemispheric Features and Trends

- Development of the Antartic Ice Sheet
- Southern ocean palaeotemperatures and circulations
- Past atmospheric circulations
- Late Cainozoic vegetational changes
- The last glaciation in the Southern Hemisphere
- The development of the western deserts - Atacama, West Australian and Namib

2. Regional Evidence for Climatic Change

- Palaeobotany and palynology
- Palaeozoology and marine palaeontology
- Archaeology
- Palaeopedology
- Geomorphology and sedimentology
- Isotopic variations

3. Regional Palaeoclimatic models

- South America
- Southern Africa
- Australia
- Antarctica

Overseas colleagues who have provisionally agreed to present keynote papers include: J.M. Bowler, K.W. Butzer, H. Flohn, A.S. Goudie, J.D. Hays, C.J. Heusser, V. Markgraf and J.H. Mercer. Papers will also be presented by E.M. Van Zinderen Bakker, C.K. Brain, H.J. Deacon, T. Partridge and J.C. Vogel.

There will be both pre- and post-Symposium excurions as well as two post-Symposium workshops (Evidence for Late Cainozoic climatic change in southern Africa; Climatic change and evolution–evidence from the African hominid sites).

The full proceedings of the Symposium will be published as rapidly as possible. Further details may be obtained from:

Dr. David Price Williams
Swaziland National Trust Commission
PO Box 100
LOBAMBA
Swaziland, Southern Africa

9th Panafrican Congress

The 9th Congress of the Pan African Association on Prehistory and Related Studies will meet in Jos, Nigeria, from 11 to 18 April, 1983.

All titles and abstracts were supposed to reach the **National Secretariat, Congress for Pan African Association, PMB 12556, Lagos, Nigeria,** by October 1982.

The list of participants, papers and themes will be mailed to participants after September 1982 (not received as of 21 November–ed.). Themes will follow those established at the 8th Congress held in Nairobi: (1) Method and theory; (2) Chronology; (3) Palaeoenvironment; (4) Acheulean cultures; (5) African hominids; (6) Microlithic industries; (7) The development of settled life and food production; (8a) Iron Age technology and economy; (8b) The prehistoric Iron Age archaeology of Africa; (9a) Historical archaeology in Africa; (9b) Relations between prehistoric peoples of the interior of Africa and the outside world.

Full texts of papers, typed double-spaced and with tables and illustrations, should reach the Secretariat by 31 December 1982.

LIST OF LAPSED SUBSCRIBERS

DR DC JOHANSON
LABORATORY OF PHYSICAL ANTHRO
CLEVELAND MUSEUM OF NAT HIST
WADE OVAL UNIVERSITY CIRCLE
CLEVELAND OHIO 44106
USA

DR A MARKS
DEPT OF ANTHROPOLOGY
SOUTHERN METHODIST UNIVERSITY
DALLAS TEXAS 75275
USA

MS SHELA MCFARLIN
4400 NORTH TURNER RD
LANSING MICHIGAN 48906
USA

DR JW MICHELS
1188 SMITHFIELD ST
STATE COLLEGE PA 16801
USA.

DR N B MILLET
EGYPTIAN DEPT
ROYAL ONTARIO MUSEUM
100 QUEENS PARK
TORONTO ONT
M5S 2C6

DR C NELSON
DEPT OF SOCIOLOGY AND ANTHRO
UNIVERSITY OF MASSACHUSETS
100 ARLINGTON STREET
BOSTON MASS 02116
USA

DR F VAN NOTEN
KONINKLIJK MUSEUM VOOR MIDDEN-AFRIKA
B-1980 TERVUREN
BELGUIM

DR D OCONNOR
UNIVERSITY MUSEUM
33RD AND SPRUCE STREETS
PHILADELPHIA PENN 19104
USA

PROF S OTTENBERG
DEPT OF ANTHROPOLOGY
UNIVERSITY OF WASHINGTON
SEATTLE WASHINGTON 98195
USA

MR J PARKINGTON
DEPT OF ARCHAEOLOGY
UNIVERSITY OF CAPE TOWN
RONDEBOSCH CAPE
SOUTH AFRICA

MR J ROBERTSON
907 35 ST NW
CALGARY ALBERTA
T2N 2Z8

MISS AM SCHOKKENBROEK
DEPT OF SOC AND ANTHRO
UNIVERSITY OF NORTHERN IOWA
CEDAR FALLS IOWA 50613
USA

DR PR SCHMIDT
DEPT OF ANTHROPOLOGY
BROWN UNIVERSITY
PROVIDENCE RI 02912
USA

DR R SCULLY
OEPT OF ANTHROPOLOGY
HARTWICK COLLEGE
ONEONTA NEW YORK 13820
USA

DR ROY SIEBER
INDIANA UNIVERSITY MUSEUM
STUDENT BUILDING 107
BLOOMINGTON IND 47401
USA

MR AL WAIBEL
DEPT OF EARTH SCIENCE
PORTLAND STATE UNIVERSITY
PORTLAND OREGON 97207
USA

PROF IVOR WILKS
DEPT OF HISTORY
HARRIS HALL
NORTHWESTERN UNIVERSITY
EVANSTON ILL 60201
USA

MR T WYNN
DEPT OF ANTHROPOLOGY
UNIVERSITY OF COLORADO
COLORADO SPRINGS
COLORADO 80907
USA

DR JE YELLEN
DEPT OF ANTHROPOLOGY
SMITHSONIAN INSTITUTION
WASHINGTON DC 20560
USA

LESLIE R PETERS
2300 E LAMBERT RD
LA HABRA CA 90631
USA

MR EDWARDS KETEKU
DEPT OF ARCHAEOLOGY
UNIVERSITY OF CALGARY

MR FRANCIS MUSONDA
DEPT OF ANTHROPOLOGY
UNIVERSITY OF CALIFORNIA
BERKELEY CALI 94720
USA

DIRECTORS OFFICE
NIGERIAN MUSEUM
LAGOS
NIGERIA

DR ARI SIIRIANEN
NATIONAL MUSEUM
PO BOX 913
00101 HELSINKI 10
FINLAND

MR ROBERT DICK-READ
BOX 73 ROAD TOWN
TORTOLA
BRITISH VIRGIN ISLAND

DR DAVID HENIGE
MEMORIAL LIBRARY
UNIV OF WISCONSIN-MADISON
728 STATE STREET
MADISON WISCONSIN 53706
USA

DANIEL CAISTER
665 HARRY L DRIVE
JOHNSON CITY NY 13790
USA

DANIEL STILES
DEPT OF HISTORY
UNIVERSITY OF NAIROBI
PO BOX 30197
NAIROBI
KENYA

LEON JACOBSON
STATE MUSEUM
PO BOX 1203
WINDHOEK 9100
SW AFRICA/NAMIBIA

PROFESSOR H ZIEGERT
ARCHAOLOGISCHES INSTITUT
UNIVERSITAT HAMBURG
JOHNSALLEE 35-D-2000
HAMBURG 13
DEUTSCHLAND

LIBRARY OF CONGRES
EXCHANGE AND GIFT DIVISION
WASHINGTON DC 20540
USA

GERALD K HUMPHREYS
PO BOX 224
WASHINGTON TEXAS 77880
USA

PETER P ANDREWS
DEPT OF ANTHROPOLOGY
354 BAKER HALL
MICHIGAN STATE UNIVERSITY
EAST LANSING MICH 48824
USA

MISS S MCBREARTY
C/O TILLMIAP
PO BOX 46727
NAIROBI
KENYA

MR A J MILLS
EGYPTIAN DEPT
ROYAL ONTARIO MUSEUM
100 QUEEN'S PARK
TORONTO ONTARIO
M5S 2C6

MS R BRADLEY
DARWIN COLLEGE
CAMBRIDGE CB3 9EU
ENGLAND

MR M L WILSON
DEPT OF ARCHAEOLOGY
SOUTH AFRICAN MUSEUM
PO BOX 61
CAPE TOWN 8000
SOUTH AFRICA

L LEPIONKA
2717 OAK LAWN STREET
BEAUFORT SOUTH CAROLINA 29902
USA

DR E ROCHE
MUSEE ROYAL DE L'AFRIQUE CENTRALE
B-1980 TERVUREN
BELGIUM

PROF B HAIGHT
COLLEGE OF GENERAL STUDIES
WESTERN MICHIGAN UNIVERSITY
KALAMAZOO MICHIGAN 49001
USA

M MUYA KAMWANGA
MUSEE ROYAL DE L'AFRIQUE CENTRALE
B-1980 TERVUREN
BELGIUM

MR BR HALLAM
DEPT OF ARCHAEOLOGY
UNIVERSITY OF IBADAN
IBADAN
NIGERIA

WILLIAM F MCDONOUGH
1003 N 11TH
ALPINE TEXAS 78930
USA

R CHRISTOPHER
3200 ROSEDALE NO 2
DALLAS TEXAS 75205
USA

DEBBIE WALLSMITH
DEPT OF ARCHAEOLOGY
SIMON FRASER UNIVERSITY
BURNABY BC
V5A 1S6

ARCHAEOLOGY DEPARTMENT
CITY OF BIRMINGHAM MUSEUM
CHAMBERLAIN SQUARE
BIRMINGHAM
ENGLAND

PROF D MATO
FACULTY OF FINE ART
UNIVERSITY OF CALGARY

SEC FRANCAISE RECHERCH ARCHEOL
PO BOX 178
KHARTOUM
SUDAN

DR MARCEL OTTE
SERVICE DE PREHISTOIRE
UNIVERSITE DE LIEGE
PLACE DU XX AOUT
B-4000 LIEGE
BELGIUM

DR MANFRED EGGERT
UNIVERSITAT HAMBURG
ARCHAOLOGTSCHES INSTITUT
VON MELLE PARK 6
D2000 HAMBURG 13
GERMANY

SEMINARIO DI AFRICANISTICA
INST UNIVERSITARIO ORIENTALE
PIAZZA SAN GIOVANNI MAGGIORE
NAPLES
ITALY

MICHAEL J MEHLMAN
921 ROSE AVENUE
MENLO PARK CA 94025
USA

INDIANA UNIVERSITY LIBRARY
SERIALS DEPARTMENT
BLOOMINGTON INDIANA 47401
USA

ALI TIGANI EL MAHI
ZOOLOGISK MUSEUM
UNIVERSITET 1 BERGEN
N-5014 BERGEN
NORWAY

LIBRARY
INSTITUTE OF AFRICAN STUDIES
UNIVERSITY OF NAIROBI
PO BOX 30197
NAIROBI
KENYA

LAB. GEOLOGIE DU QUARTENAIRE CNRS
FACULTE DES SCIENCES DE LUMINY
13288 MARSEILLE CEDEX 2
FRANCE

MR AND MRS J F THACKERAY
DEPARTMENT OF ARCHAEOLOGY
UNIVERSITY OF STELLENBOSCH
STELLENBOSCH
CAPE PROVINCE 7600
SOUTH AFRICA

CATHERINE VEREECKE
DEPT OF ANTHROPOLOGY
UNIVERSITY MUSEUM
PHILADELPHIA PENN 19104
USA

DR ARNOLD RUBIN
ART DEPARTMENT
U.C.L.A.
405 HILGARD AVENUE
LOS ANGELES CA 90024
USA

BAYERISCHE STAATSBIBLIOTHER
SPECIAL PERIODICAL ACCOUNT
ERWERBUNGSABTEILUNG DFG/ZS
POSTFACH 150
D8000 MUNCHEN 34
GERMANY

PERKINS FOSS
DEPT OF ART
DARTMOUTH COLLEGE
HANOVER NEW HAMPSHIRE 03755
USA

ANNALISA ZARATTINI
VIA G ANIMUCCIA 10
ROME
ITALY

MR J DENBOW
NATIONAL MUSEUM & ART GALLERY
PO BOX 114
GABORONE
BOTSWANA

CENTRE WEST AFRICAN STUDIES
UNIVERSITY OF BIRMINGHAM
PO BOX 363 EDGBASTON
BIRMINGHAM B15 2TT
ENGLAND

WASMUTH BUCHANDLUNG
HARDENBERGSTRASSE 9A
1 BERLIN 12
GERMANY

KIMBALL M BANKS
DEPT OF ANTHROPOLOGY
SOUTHERN METHODIST UNIVERSITY
DALLAS TEXAS 75275
USA

SMITHSONIAN INSTITUTION
LIBRARIES
WASHINGTON DC 20560
USA

DEPT OF ARCHAEOLOGY AND ANTHROPOLOGY
INST OF INVESTIGACAO CIENTIFIC
CP1780
MAPUTO
MOZAMBIQUE

KONIKLIJK MUSEUM VOOR MIDDEN AFRIKA
81980 TERVUREN
BELGIUM

KATHY YUNGER
DEPT OF ANTHROPOLOGY
SUNY STONY BROOK
STONY BROOK NY 11790
USA

DR H N CHITTICK
BRITISH INSTITUTE
PO BOX 30710
NAIROBI
KENYA

MARTIN HALL
DEPT OF ARCHAEOLOGY
SOUTH AFRICAN MUSEUM
PO BOX61
CAPE TOWN
SOUTH AFRICA

G W HOHMANN
92 ALTE LANDSTRASSE
CH-8803 RUSCHLIKON
SWITZERLAND

M C VAN GRUNDERBEEK
MECHELSTEENWEG 60
B 1970 WEZEMBEEK-OPPEM
BELGIUM

SIGNORA B BARICH
VIA PANARO 17
ROMA
ITALY

MR E K AGORSAH
DEPT OF ANTHROPOLOGY
288 KINSEY HALL
UNIV OF CALIFORNIA
405 HILGARD AVE
LOS ANGELES CA 90024
USA

DR RAYMONDE BONNEFILLE
LAB DE GEOLOGIE DU QUATERNAIRE CNRS
920190 MEUDON BELLEVUE
FRANCE

PROF GH CURTIS
DEPT GEOLOGY AND GEOPHYSICS
UNIVERSITY OF CALIFORNIA
BERKELEY CA 94720
USA

MRS J DEACON
DEPT OF ARCHAEOLOGY
UNIVERSITY OF STELLENBOSCH
STELLENBOSCH 7600
SOUTH AFRICA

J GALLAGHER
DEPT OF SOCIOLOGY AND ANTHROPOLOGY
UNIV WISCONSIN AT LA CROSSE
LA CROSSE WISCONSIN 54601
USA

DR F HASSAN
DEPARTMENT OF ANTHROPOLOGY
WASHINGTON STATE UNIVERSITY
PULLMAN WASHINGTON 99163
USA

DAVID S REESE
11 BROOK BRIDGE ROAD
GREAT NECK NY 11021
USA

ALISON BROOKS
DEPARTMENT OF ANTHROPOLOGY
GEORGE WASHINGTON UNIVERSITY
WASHINGTON DC 20052
USA

KEITH RAY
CLARE HALL
HERSCHEL ROAD
CAMBRIDGE CB3 9AL
ENGLAND

MR F BARTELL
COMMUNITY COLLEGE OF PHILA
34 S 11 ST
PHILADELPHIA PA 19107
USA

DR RL CARLSON
DEPT OF ARCHAEOLOGY
SIMON FRASER UNIVERSITY
BURNABY BC
V5A 1S6

MR S G DANIELS
8 GURNARD'S AVENUE
FISHERMEAD
MILTON KEYNES MK6 2EV
ENGLAND

PROF SERGIO DONADONI
VIA DI NOVELLA 22
00199 ROMA
ITALY

MR J B GRAHAM
TVA CULTURAL RESOURCES
FORESTRY BUILDING
NORRIS TENN 37828
USA

DR TR HAYS
ARCHAEOLOGY PROGRAM DIRECTOR
INSTITUTE OF APPLIED SCIENCE
NORTH TEXAS STATE UNIVERSITY
DENTON TEXAS 76203
USA

CERELTA
INST DES SCIENCES HUMAINES
BP 193
YAOUNDE
CAMEROUN

MARINA LUPACCIOLU
VIA S MARIA DELLA SPERANZA 5
00139 ROMA
ITALY

JUSTIN WILKINSON
736 WEST JACINTO STREET
TUCZON ARIZONA 85705
USA

DR JC BELLIS
DEPT OF SOC AND ANTHROPOLOGY
NOTRE DAME UNIVERSITY
NOTRE DAME IND 46556
USA

PROF J DESMOND CLARK
DEPT OF ANTHROPOLOGY
UNIVERSITY OF CALIFORNIA
BERKELEY CA 94720
USA

DR HJ DEACON
DEPARTMENT OF ARCHAEOLOGY
UNIVERSITY OF STELLENBOSCH
STELLENBOSCH 7600
SOUTH AFRICA

PROF C GABEL
AFRICAN STUDIES CENTER
BOSTON UNIVERSITY
10 LENOX STREET
BROOKLINE MASS 02146
USA

DR MICHAEL GRAMLY
BUFFALO MUSEUM OF SCIENCE
HUMBOLDT PARK
BUFFALO NY
USA

DR M HILL
MANNHEIM RR#2
PETERSBURG ONTARIO
N0B 2H0