

## EDITORIAL

NYAME AKUMA is in a precarious situation. Of the 247 names on the active list of subscribers, only 138 have paid for 1983. Of the remainder, 46 receive their copies free, three are exchanges, and 61, whether through disinterest or negligence, have failed to renew. I am writing to each of the latter in the hope that they will renew their subscriptions. If paid subscriptions do not increase I will have to consider one of the following options: (a) increase subscription rates, (b) reduce publication to one number per year, (c) cease sending free copies, (d) suspend publication.

While I think the major problem lies with those who could easily pay their subscriptions but fail to do so, it is also clear that many of those who receive free copies could pay for them with Unesco coupons. Since the cost of producing and mailing each number is just about \$5.00, the free copies cost \$500 per year. This could be easily reduced if those on the free list would pay with Unesco coupons, which can be purchased in local currency for U.S. dollars from the following offices (if none is listed for your country, write to Unesco Coupon Programme, 7 Place de Fontenoy, 75700 Paris, France).

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In order to simplify subscription payments, I am making the following change effective immediately. Subscriptions can now be paid by personal cheque in any major currency, *so long as the cheque is drawn in the currency of the country in which the bank is located and made payable to "The University of Alberta - Nyame Akuma"*. All subscriptions in U.S. dollars should now be paid in this way and sent to Edmonton. Do not send cheques to Sheryl Miller. Those who subscribe in sterling should only send banker's orders to Stephen Green. If paying by personal cheque in sterling please send it to Edmonton.

Those who subscribe through an agency will please note that as of No. 23 I shall include an invoice rather than a notice of subscription due. Please send this invoice to your subscription agency with instructions that I am *not* to be asked to supply additional invoices. The time and expense involved are prohibitive.

I apologize for the delay in producing this number. I was out of the country for six weeks beginning in the middle of May and insufficient material had arrived by the end of April to warrant publication. I hope this will not be so in future. I intend to publish No. 23 by the end of December. *Please send contributions for No. 23 by 15 November, 1983.*

David Lubell

## APERCU DES TRAVAUX REALISES EN ALGERIE DE 1978 A 1982

*The following report was received in January 1983 from the Centre de Recherches Anthropologiques, Préhistoriques et Ethnographiques in Algiers.*

Menée en quasitotalité par les chercheurs du CRAPE, la recherche préhistorique s'attache à établir la stratigraphie du Quaternaire dans une optique paléogéographique.

### Le littoral méditerranéen

Il a été l'objet des travaux de M. Betrouni et N. Saoudi qui ont étudié les dépôts récents pour l'un, les dépôts anciens pour l'autre, dans la région immédiatement à l'ouest d'Alger dénommée Sahel occidental d'Alger.

N. Saoudi souligne la physionomie tardive de la région. Ses conclusions montrent:

- la grande homogénéité tectono-sédimentaire du Pliocène et du Calabrien (I et II);
- l'individualisation du Sicilien final et la paléogéographie du cycle sicilien;
- l'importance de la néotectonique. Entre deux môles surélevés, ceux de la Bouzareah et du Chenoua, un mouvement de bascule a été identifié. Vers l'ouest les niveaux sont superposés, vers l'est ils sont emboîtés. Le point neutre qui les sépare a été retrouvé à Tipaza.

M. Betrouni a montré l'existence de plusieurs formations marines appartenant probablement au Tyrrhéniennien, affectées elles aussi de déformations tectoniques.

Des occupations préhistoriques se rapportant à l'Atérien, l'Ibéromaurusien et le Néolithique qui ont été retrouvées en divers endroits, peuvent être mises en relation avec les mouvements de la mer.

### L'Algérie orientale

Dans le bassin du Hodna, A. Amara a reconnu 6 cycles de sédimentation qui correspondent à des séquences climatiques. Des manifestations tectoniques sont perceptibles du fini-Pliocène au Villafranchien. Au niveau du chott, la déflation a joué un rôle important à la fin du dernier pluvial. Ce trait doit être mis en relation avec des empâtements sableux fréquents dans les cluses de l'Atlas saharien pour la même époque. Celui de l'oued Bou-Saâda en amont de cette oasis atteint 20m d'épaisseur, son

sommet a été daté de 9000 BP par divers gisements épipaléolithiques qu'il renferme.

Quant aux gisements acheuléens reconnus en 1976 près de N'Gaous, ils sont liés à des phases lacustres et quoique n'ayant pas encore faits l'objet de fouilles, ils sont rapportés à l'Acheuléen ancien, moyen et supérieur par A. Amara.

### L'Algérie centrale

Les seuls travaux effectués dans cette région concernant l'art rupestre. M. Hachid en établit un corpus. Actuellement elle termine l'analyse de deux sites: Djebel Doum et Ain Mouillah.

### Sahara

Les recherches concernant les marges du massif du Hoggar. Elles visent à préciser l'amplitude et la chronologie des phases climatiques afin de permettre une comparaison fine avec cette même succession sur la frange septentrionale du Sahara.

Au nord du massif, N. Ferhat montre que la *sebkha* de Timimoun est issue d'une paléovallée qui s'est obstruée et a évolué par surcreusement éolien depuis le Pléistocène moyen. Encastrés dans des terrains crétacés, deux glacis y ont été identifiés. L'un se rapporte probablement au Quaternaire moyen "Tensiftien", l'autre au "Soltanien". C'est ce dernier qui supporte en nombre des occupations humaines atériennes. Le changement climatique perçu à l'époque néolithique, s'y traduit par des éléments d'une petite terrasse.

A l'est du Hoggar, A. Heddouche a découvert un important site des galets aménagés dans la paléovallée de Tan Kena (Illizi). Les pièces gisent dans et sur une crôte gypseuse qui coiffe le niveau le plus élevé. Deux niveaux de lacs qui ont été retrouvés sont à mettre en relation avec des sources du Quaternaire moyen et des débuts du Quaternaire récent ("Soltanien"). Les glacis identifiés sont tous coiffés de gypse, mais il offre des caractéristiques différentes selon l'époque de son dépôt.

La cartographie des gisements préhistoriques du massif du Hoggar, faite par S. Hachi, souligne une disposition particulière du Paléolithique qui ne se retrouve qu'en altitude, alors que le Néolithique s'est développé indifféremment sur la totalité du pays.

Au Tassili-n-Ajjer, la fouille du gisement de Ti-n-Hanakaten - gisement dont les couches archéologiques de quelques 6m de puissance sont en relation avec des peintures pariétales - se poursuit. Débutés en 1973, les travaux ont permis de reconnaître 18 niveaux sur une épaisseur de 2,50m.

Une importante discontinuité sédimentaire a pu être datée de 7220 BP. Elle marque un net changement dans le milieu. La faune comporte alors des restes de poissons et tortues qui ne se retrouvent pas dans les niveaux sus-jacents. *Acacia albida* disparaît, remplacé par *Acacia seyal* et *Acacia raddiana*.

Les inhumations de sept individus montrent des pratiques funéraires diverses qui supposent au moins trois cultures successives – ce que devra préciser l'étude du matériel qui est en cours. L'un des individus, un enfant qui conservait encore des fragments de peau attachée aux os, a été daté de 7900 BP.

Dans le niveau actuellement fouillé, une structure circulaire de 4m de diamètre a été identifiée. Elle est limitée par une sorte de muret fait de blocs de grès appuyés les uns contre les autres, parfois superposés. L'intérieur est pavé. Dans un secteur, il supportait des petites branches feuillues rappelant une litière. On est tenté d'y voir une sorte de hutte.

Dans le domaine de l'art rupestre, M. Hachi s'attache à des études sur la conservation des peintures de la région, en collaboration avec l'Office National du Parc du Tassilli (Alger) et le Laboratoire de Conservation et de Recherches des Monuments Historiques de France (Champs-sur-Marne).

La majorité de ces travaux est publiée dans *Libyca*. La revue dont le dernier numéro remonte à 1977 a vu résoudre ses problèmes et le numéro XXVI-XXVII (1978-1979) doit sortir de presse incessamment.

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## ANGOLA

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In December 1982, the Laboratório Nacional d'Anthropologia d'Angola (LANA) invited me to Angola for two weeks, in order to assess the future of archaeological research in Angola and to give a lecture at the University of Luanda. I was very impressed by the keen interest shown in the highest political spheres for local archaeology. Since 1980, small excavations (mainly for training purposes) have been carried out under the supervision of the Director of LANA, Mr. H. Abranches, in collaboration with his assistant, Mr. S. Souindoula. Near the mouth of the Zaïre River at Mpangala, the site of Mbanza Soyo, a former provincial capital of the Kongo Kingdom, was tested. Several graves of the nearby cemetery of the old Solongo chiefs were also excavated, yielding some interesting grave goods from early colonial times.

On the coast just south of Luanda, two shell layers with pottery and faunal remains are being excavated at Kamabanga and Kitale. Samples have been collected for dating. In connection with these excavations, the systematic study of the interactions between man and the environment around the Luanda Sound is now one of the main topics of research.

A brief journey to Benguela allowed me to visit the Museum Nacional de Arqueologia, and to meet the Director, Mr. P. Pinto and his assistant, Ms. P. Tavares. Most of the archaeological collections, once scattered around the country, have now been grouped together there. We also visited some promising sites along the coast where small scale excavations are beginning. This area should reveal a sequence going back to the Acheulean, if not earlier.

The great archaeological potential of Angola has been stressed many times before. An extremely useful synthesis of previous work has now been published by Carlos Ervedosa: *Arqueologia Angolana* (Ministério da Educação, Angola, 1980).

Undoubtedly the current reorganization of archaeological research in Angola will reveal a great deal about this area which has been largely neglected in recent years.

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## THE DAKHLEH OASIS PROJECT

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The 1982 season has seen the completion of the survey phase of our study of the Dakhleh Oasis in the Egyptian Western Desert. The study is of this whole oasis through time and has been designed so that the entire surface of it is inspected for both cultural and environmental remains before any intensive excavation is undertaken. Annual field seasons since 1978 have gradually seen the expansion of our data base across this 80km-wide area.

Archaeological material from Middle Palaeolithic and Epipalaeolithic sites is heavily represented in Dakhleh, although the earliest (Acheulean) horizon is not abundant. Little, if any, of the artefactual material is in situ and present contexts and weathering suggest a largely vertical displacement, chiefly through the agency of deflation. Two Neolithic phases – one without and one with ceramics – are now distinguished. The former is characterized by nodular flint tools, with an extensive repertoire of points, scrapers and blades in the tool kit; but, apart from gindstones, having nothing to suggest architectural activities. The latter, ceramic, Neolithic displays a number of advanced characteristics, including the use of copper tools, hand made pottery, tabular or mined flint and the appearance of sickle elements. Some Neolithic sites do have material in situ and deposits promise good future excavation resources. There is evidence for continuous human occupation in the oasis since the Neolithic, despite the hyperarid climatic conditions over the last 5,000 years. However, apart from a brief interlude around the end of the Old Kingdom (ca. 2200 B.C.), there seems only to have been a token, minimal population in Dakhleh until the time of Christ. At that point, there was a population explosion and our view of Roman Dakhleh sees great expansion and settlement, agricultural development and a generally prosperous community for several centuries with a population of perhaps as much as 40,000. After the fourth century there is a sharp decline in size and prosperity and the community does not fully recover until the present century.

During wetter periods, the oasis had considerable standing water above ground. Settlement patterns,

faunal remains and the geomorphological history of the oasis all suggest a varied environment through time. In the Neolithic, the extensive faunal remains are of an 'Ethiopian' or east African complex, and identified species include elephant, equids and Cape buffalo. This is unrelated to contemporaneous groups in the Nile Valley. It will be interesting to see if this, the result of a land bridge during a wet phase, is paralleled in the cultural material. Certainly the resemblance to Nile Valley cultural material is minimal, although good parallels have yet to be found anywhere else. Again, Neolithic remains can be seen gradually moving to lower contours – the settlements probably following receding water resources. It seems that Pharaonic Egyptian settlement was so slight partly because a lot of the oasis floor was still permanently wet and partly because a lack of advanced hydraulic technology precluded a use of higher ground. By the Roman period both of these problems were overcome and the resulting expansion was remarkable and energetic to the point of soil impoverishment.

Our next few seasons in the oasis will be devoted to the expansion and elucidation of the details of the broad trends that we now see. Surface data can never yield the complete picture of any archaeological context and we must now excavate.

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## BELGIAN MIDDLE EGYPT PREHISTORIC PROJECT - 1982

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### Nazlet Khater (Tahta)

Excavations at Nazlet Khater 4 (*Science* 1982: 626-628) on a Nile terrace in the lower desert, were continued in 1982 and led to the discovery of an Upper Paleolithic flint mining area. Two different exploitation systems could be observed. A first one is the exploitation by means of bell-shaped shafts, which were dug down into the chert cobble layer of the Nile terrace. The chert cobbles were extracted by undercutting the clay deposits of the terrace at the bottom of the shaft. Another method of extraction consisted of undercutting a probably man-made clay cliff, which could be followed over 18m. The exploited area was filled by sand and gravel containing large amounts of flaked flint material among which were found numerous blade cores,

core preparation pieces and pebbles with percussion traces. The tool inventory is rather restricted. Some burins, dihedral or on a break, are present; scrapers are rare; the best represented tools are denticulates. Most astonishing is the presence of bifacially worked tools with sharp edges, which are quite similar to Neolithic axes. They were probably used for digging purposes. All the artifacts were found in stratified, and sometimes consolidated, levels composed of the rubble the mining area was filled up with. Between the strata, charcoal deposits were found for which nine  $^{14}\text{C}$  dates could be obtained, extending from 35,000 to 31,000 BP.

On a nearby hill (N.K.2), two burials were excavated. The skeletal remains of one of these are badly preserved. The skeleton from the other tomb, although clearly not of neandertal type, shows very prominent archaic features. A bifacial tool, similar to those from the flint mining site, was found in association with one of the skeletons. The hypothesis that the paleolithic flint miners themselves were responsible for these burials has to be considered.

#### **Maghara (Danadara)**

A predynastic settlement, discovered in the cut of a canal along the Nile, has been tested. Beside traces of hearths with charcoal and bone (mostly fish remains), the archaeological layer yielded numerous flints and potsherds. The charcoal gave a date of  $4,810 \pm 50$  BP (Lv-1236).

On a flat elevation nearby, concentrations of lithic artifacts and limestone blocks seem to be preserved in their original position on the surface. Their mapping was started and  $4\text{m}^2$  of the site have been excavated. Charcoal accumulations and the bottom of a buried predynastic pottery vessel were found in their original position. A  $^{14}\text{C}$  date, on charcoal from the buried vessel, gave a date of  $5,110 \pm 90$  BP (Lv-1312).

Other members of the research team are M. Otte, E. Paulissen, G. Gijssels, R. Lauwers and Ph. Van Peer.

## **NEW RESEARCH ON PALAEOLITHIC SITES IN THE MAKHADMA AREA, NEAR QENA**

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Taking over the research on the Upper Palaeolithic site of El Makhadma, which was kindly assigned to us by Dr. F. Wendorf, the members of the Belgian Middle Egypt Prehistoric Project of Leuven University started the 1983 campaign with a brief survey of the area. Work in the vicinity of Makhadma 1, the site investigated by Wendorf and his colleagues, yielded several new Upper Palaeolithic sites (Makhadma 2, 3 and 4), and a Middle Palaeolithic site called Wadi Makhadma. Makhadma 2 was excavated in its entirety, and excavations were begun at Makhadma 4. In order to better understand the stratigraphy in the area, the existing sections at Makhadma 1 were opened and restudied.

It appears that during Upper Palaeolithic times, groups settled on the lower part of steep slopes connecting a higher level build up of Qena sands and overlying exotic cobbles with lower levels, situated at most a few metres above the present floodplain. Sites 2 and 4 are located just above the maximum inundation level of a Nile aggradation, consisting of black silts (the Sahaba Formation according to Wendorf and Schild, 1976). This aggradation attained a level of about 5m above the present floodplain.

At Makhadma 2, which was partially destroyed by quarrying, the black and very powdery archaeological layer is covered by scree deposits. The archaeological deposits, which are more or less in situ, consist of a moderately well preserved living floor which includes two hearths and several post holes.

At Makhadma 4, in the upslope portion of the site, man-made terrace-like steps still exist in the underlying slope deposits. They are filled with sandy deposits rich in charcoal, artifacts and faunal remains, and in some instances recall the black and powdery deposits at Makhadma 2. Lower on the slope the archaeological material is embedded in a single layer of black powdery sediments, containing a wide range of pebbles and cobbles. Both areas are covered by slope deposits similar to those at Makhadma 2.

Downslope of the sites, reworked Late Palaeolithic artifacts were recovered under the black Nile silts. At Makhadma 4, the black powdery sediments overly these silts, whereas at Makhadma 2 no direct correlation could be established between the silts and the cultural layer. The presence of charcoal, as well as the character of the artifacts underlying the black silts, suggests that occupation of Makhadma 2 occurred towards the end of the period of silt deposition.

Typological differences between the assemblages of Makhadma 2 and 4 are obvious, although similarities do exist. Levallois technique is absent in both. The cores, mostly with single platforms, indicate blade and bladelet production. At Makhadma 2, blades are more numerous than bladelets, whereas the reverse occurs at Makhadma 4.

Distinction between the two assemblages is most apparent in the composition of the toolkit. A few denticulates, some scrapers and notched pieces, numerous burins, truncated pieces and geometric microliths (such as isocles trapezes and segments) are all characteristic of Makhadma 4. At Makhadma 2, burins, truncated pieces and geometrics are completely absent.

The faunal remains from both sites contain fish (mostly *Clarias* sp. and *Tilapia* sp.), waterfowl, *Hippopotamus amphibius*, *Bos primigenius*, *Alcelaphus buselaphus*, and some small carnivores. The abundance of catfish may indicate the exploitation of small or shallow (residual ?) ponds.

From both a stratigraphical and typological viewpoint, Makhadma 2 is considered earlier than Makhadma 4. Radiocarbon dates on several samples should enable us to establish a reliable chronology for the successful geomorphological events in the area as well as the dates of occupation for the sites.

Other members of the research team are E. Paulissen, G. Gijssels, H. Van de Konijnenburg, D. Drappier, J. Janssen and W. Van Neer.

#### References cited

- Wendorf, F. and R. Schild  
1976 Prehistory of the Nile Valley. New York: Academic Press.

## RESULTS OF ARCHAEOLOGICAL RESEARCH IN THE MIDDLE AWASH, ETHIOPIA - 1981 FIELD SEASON

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Systematic archaeological survey of the Middle Awash was undertaken in 1981 as part of a multidisciplinary palaeoanthropological investigation coordinated by one of us (J.D.C.). The study area is located along the center of the Awash River Valley south of Hadar and north of the town of Gewani in the low lying Afar Depression at the northeast terminus of the Ethiopian Rift Valley. Extensive deposits of Miocene, Pliocene, and Pleistocene sediments are found outcropping along the eastern and the western Awash valley margins as well as in the basin center, which contain a virtually uninterrupted palaeontological record over the last 6 million years. Dr. M. Taieb was the first person to realise the palaeoanthropological significance of the Middle Awash deposits during geological reconnaissance in the late 1960s (Taieb 1974). Small scale exploratory studies of the area were subsequently undertaken by Dr. J. Kalb and a Southern Methodist University archaeological group coordinated by Dr. F. Wendorf for short periods between 1975 and 1978 (Kalb *et al.* 1982; Larson 1977). Our 1981 survey of the Middle Awash deposits yielded significant new geological, geochronological, paleontological and archaeological results (Clark *et al.* in prep.). This included the discovery of early hominid cranial and limb fragments from 2 localities situated near a datable tuffaceous horizon, which is estimated to be approximately 4 million years on the basis of biostratigraphic correlation. In this short report, we summarize the results of our archaeological survey and test excavations undertaken in the suite of Pleistocene sediments. Sedimentary deposits of Pleistocene age are particularly well-exposed east of the present day Awash river, which bisects the study area (Fig. 1). For this reason, survey was concentrated in this area and numerous archaeological occurrences were located with associated fauna of Lower and Middle Pleistocene age. Some of these were test excavated

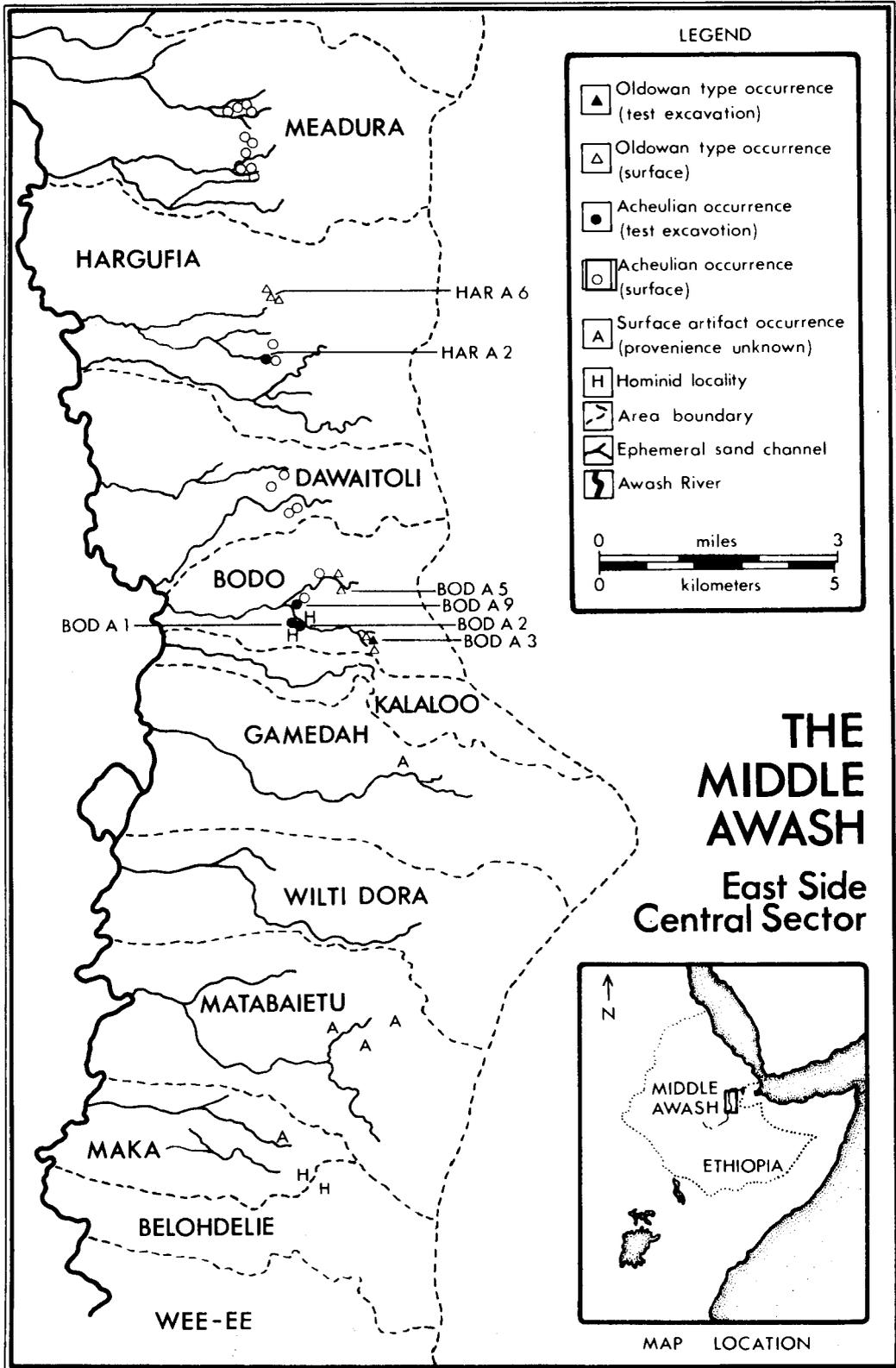


Fig. 1: Lower Pleistocene and Middle Pleistocene archaeological sites in deposits east of the present Awash River.

with important results. In addition, early Acheulian occurrences were located during a brief reconnaissance at the southern end of the study area on the west side of the river, which thus showed high priority for further large scale survey.

The earliest stratified occurrences of stone artifacts in the Middle Awash were found at five previously undiscovered localities in the Bodo drainage. The localities are clustered in two fault-bounded blocks of sediment that are informally called the "Middle Bodo Beds" following Kalb *et al.* (1982). The northern block contains diagnostic suids, equids and bovids which indicate an age of 1.3 to 1.5 myr. Stone artifacts and fragmentary fossilized fauna were found stratified together in river channel sands and gravels as well as in lateral finer grained flood plain silts.

The artifact assemblages are comprised predominantly of small cores, unmodified flakes and flaking debitage with the addition of several flake scraper forms. These assemblages are broadly comparable to stone assemblages found just to the north at Hadar and elsewhere in the Rift Valley of East Africa, which have been attributed to the Oldowan Industrial Complex based upon morphological and technological features in common.

In the time available, several surface samples of stone artifacts were identified, plotted, lifted and removed to the National Museum in Addis Ababa for study. One small test excavation was undertaken that yielded stone artifacts with fragmentary fauna in a fine grained undisturbed sedimentary context. Up to six species were present amongst the surface and in situ faunal assemblage, including several bovids, an equid, an elephant and possibly a hippo. Survey elsewhere on the east side of the Middle Awash produced stone artifact occurrences that at present can only be tentatively assigned to the Oldowan Industrial Complex (Fig. 1).

Of potentially great significance is the evidence for fire. This takes the form of localized patches of clay, which were shown to be baked by fire in antiquity following magneto-thermal analysis by Dr. M. Barbetti of the University of Sydney Radiocarbon Laboratory. Although these traces of fire appear to be a widespread phenomenon in the Middle Awash, they were observed and in one case sampled close to one of the Oldowan archaeological sites in the Bodo locality. In view of the controversy regarding the controlled use of fire by early hominids prior to one million years ago further detailed excavation sectioning and sampling will be undertaken in an effort to determine the agencies that caused the localised

patches to be baked.

An earlier stage of the Acheulian Industrial Complex was found at two localities. At one of these, Dakanihyalo, which is situated on the west side of the Awash, an in situ horizon of artifacts could be dated by the presence of an advanced *Mesochorus limnetes* to ca. 0.7 myr, equivalent to Olduvai Upper Bed III. The artifact assemblage comprises thick-butted and sometimes triangular-sectioned bifaces, core/choppers, and flakes of lava technologically and typologically characteristic of the earlier Acheulian.

The study area contains probably the richest record of Acheulian occurrences so far discovered in the African Middle Pleistocene. Assemblages found associated with streambank and channel sediments are basically of two kinds:

- (a) both large and small concentrations of handaxes and cleavers together with flaking waste but a significant paucity of light duty artifacts and fauna;
- (b) assemblages of flakes some of which are re-touched, chopper/cores, etc. more usually associated with broken faunal remains.

These contrasting occurrences appear to indicate relatively brief periods of occupation at any one locality and where artifacts were manufactured and used in connection with a single set of activities. Four test excavations were undertaken. At one of these a possible hippopotamus butchery site was partially excavated which yielded artifacts and the bones of hippopotamus from a single individual distributed over 25m<sup>2</sup>. Although in a channel silt context, the bones and artifacts show minimal evidence for transport and movement. Purely geological concentrations of artifacts and bones have been previously reported as "butchery sites" so that one of the main inquiries in future archaeological investigations will be to define criteria and develop strategies for recognizing butchery sites and demonstrating a functional relationship between artifacts and bones.

One of the intriguing finds in the Middle Pleistocene beds was the discovery of several small density concentrations of massive boulder sized basalt cores. These are some of the largest cores known from paleolithic times and they appear to have been the source of the flakes from which Acheulian cleavers and handaxes were made. These occurrences, together with replicative experimental studies planned for the future, offer the opportunity to reconstruct the technological stages of implement manufacture, their function, and the technological

One of the most important discoveries made during the field season was the surface find of a hominid parietal fragment by Dr. T.D. White, approximately 400m south of the original Bodo cranium recovered by J. Kalb's group in 1976 (Conroy *et al.* 1978). This specimen has been studied by one of our group, Berhane Asfaw (in press), and preserves part of the vault not seen in the original Bodo specimen and represents a second, geologically contemporary adult individual of the same Middle Pleistocene species.

In summary, based upon the preliminary pattern for the distribution of archaeological occurrences in relation to sedimentary contexts across the ancient landscape in the Middle Awash, Lower and Middle Pleistocene hominids were locating their occupation sites close to the margins of local tributary stream channels in the hinterland of the sedimentary basin and avoiding the low-lying swampy floodplain of the palaeo-Awash in the center of the basin (Clark *et al.* in prep). We are treating this as a working hypothesis. However, in the future, studies of the concentrations of stone artifacts together with diagnostic and identifiable faunas and their differential distribution across the landscape provide a rare opportunity to define a range of adaptive behaviours and to systematically document the land-use patterns of early hominids occupying the basin. Taken together with the Terminal Acheulian, Middle Stone Age and Later Stone Age sites, which were also located during our survey, the Middle Awash study area provides one of the few opportunities for making a detailed study of the archaeological traces for hominid activities over the last million and a half years in the lowland ecosystem for comparison with that from the high plains on the Western and South-East Plateau of Ethiopia (Chavaillon *et al.* 1979; Clark and Kurashina 1979).

*Acknowledgments*

Dr. Hiro Kurashina, Rob Blumenschine, Berhane Asfaw and Carol Sussman were also members of the archaeological contingent. The success of our field season was to a large part attributable to the interdisciplinary nature of the enquiries. We would like to thank our colleagues Drs. White, Krishtalka, Williams, Walter and a geological team coordinated by Dr. G. Assefa from the University of Addis Ababa for their contribution during the archaeological survey. We are grateful for permission and assistance in our research by the Government of Socialist Ethiopia. Funding was provided by the National Science Foundation and the L.S.B.

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**References cited**

Asfaw, B.  
in press A Further Middle Pleistocene Hominid from Bodo, Middle Awash, Ethiopia. American Journal of Physical Anthropology.

Chavaillon, J., Chavaillon, N., Hours, F., and Piperno, M.  
1979 From the Oldowan to the Middle Stone Age at Melka-Kunturé (Ethiopia): Understanding Cultural Changes. Quaternaria 21:87-114.

Clark, J.D. and H. Kurashina  
1979 Hominid Occupation of the East-central Highlands of Ethiopia in the Plio-Pleistocene. Nature 282:33-39.

Clark, J.D., Asfaw, B., Harris, J.W.K., Walter, R., White, T.D., and Williams, M.J.  
in prep. Paleoanthropological Discoveries in the Middle Awash Valley, Ethiopia.

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

Kalb, J.E., Jolly, C.J., Mebrate, A., Tebedge, S., Smart, C., Oswald, E.B., Cramer, D., Whitehead, P., Wood, C.B., Conroy, G.C., Adrefis, T., Sperling, L., and Kana, B.  
1982 Fossil Mammals and Artifacts from the Middle Awash Valley, Ethiopia. Nature 298:25-29.

Larson, P.A.  
1977 Matabaietu: An Oldowan Site from the Afar, Ethiopia. Nyame Akuma 11:6-10.

Taieb, M.  
1974 Evolution Quaternaire du Bassin De L'Awash. Ph.D. Thesis. L'Université de Paris VI.

## DABOYA PROJECT UPDATE: MORE DATES AND EVIDENCE FOR A "KINTAMPOID" CULTURE

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Analysis of the Daboya material has continued through the fall and winter of 1982/83. In addition, a major portion of the fall was devoted to the completion of a substantial report summarizing the results of the archaeological investigations of the 1978 and 1979 seasons and submitted to the Social Sciences and Humanities Research Council of Canada in December.

Material excavated in 1982, requiring professional conservation, was treated by Eleanor J. Wilson of Edmonton, Alberta. A relatively large number of well preserved metal artifacts was recovered. Many of the pieces are buckles and little bells suggestive of horse accoutrements; this certainly supports the view that the horse was much more common in the recent past than today in the area (there have not been horses in the Daboya area since the 1950s). The other item of interest is the brass arm of a weigh scale from which the weights would have been suspended. This piece is the first clear evidence of trading paraphernalia from Daboya, and was presumably used to weigh gold dust. Further study of the 1982 material is underway.

Two points of immediate interest are presented in this note. The first concerns the nature of the ceramic material excavated from the 6m to 2m unit known as DbR. Analysis indicates that a change in form and decoration of the pottery occurred in the lower third of the deposit. This change is tentatively interpreted as a shift from a Kintampo culture related tradition to that of the Ware B tradition, previously identified at Daboya (but nowhere else, to date).

Attention was first drawn to the the DbR area by the discovery of Kintampo culture associated artefacts such as fragments of terracotta cigars, polished stone axe fragments, stone beads and comb-stamped sherds upon the surface. Most of these fragments were found eroding from the northern slope of the 5m deep trench that was dug about 10 years ago to install a water pipe from the river. It was evident that the Kintampo material had been

removed from the trench and scattered on either side of the cutting; a further 50cm of sterile yellow sandy clay from the deepest part of the trench was then dumped over a large area alongside the trench. DbR itself was located about 5m to the NW of the trench. Excavation through the yellow sandy clay overburden revealed the pre-1970 land surface at about a half metre below the surface. Very little recent material was recovered from the next 10-20cm indicating the area had not been occupied for some time. By 70cm below surface the material consisted predominantly of the plaited roulette type sherds and inverted rim bowls, very characteristic of Ware B1 and B2. This ware has been identified elsewhere at Daboya to date between the late first millennium BC and the early first millennium AD and is interpreted as representing the Early Iron age phase in the area.

Some 60cm below the Ware B horizon, the ceramic material changes to mostly comb-stamped and walking comb decorated sherds and a near absence of plaited roulette material. Artefacts associated with this different pottery type include one terracotta cigar fragment from 160cm below surface, numerous bits of reddish-orange burnt clay (daga), and many flakes of quartz and quartzite material (hitherto an uncommon artefact class at Daboya). This horizon represents the first archaeologically controlled indication of a Kintampo-related cultural phase at the site. The overall character of the pottery, however, after preliminary examination, appears to be somewhat different from the classically described Kintampo material from other parts of Ghana. Until the <sup>14</sup>C samples have been processed from seven spits in the unit, further discussion as to the status of this "Kintampoid" tradition at Daboya must be delayed. Kodzo Gavua, an MA student in the Department of Archaeology at Calgary, is undertaking a more detailed analysis of the DbR material as part of his re-examination of the Kintampo culture as a whole. He will participate in the 1983 excavations at Daboya and will focus his attention on the DbR area, in conjunction with the writer.

The second point relates to the return of three dates from thermoluminescent testing on potsherds from previous excavations. The samples were submitted to Alpha Analytic Inc. of Coral Gables, Florida, who produced results within three weeks of obtaining the samples.

These dates are of interest in comparison with <sup>14</sup>C dates from the site (see NA 15:22 and 17:39).

The DbWA10 material from the dated spits is

clearly Ware B in form and decoration and can be dated with confidence to at least the very early first millenium AD (and tentatively to the late first millenium BC on the basis of S-1856, S-1858 and S-1855). Such a time range would not conflict with similar dates for the Early Iron Age from other areas in Ghana.

The DbDA12 material from spits 27 through to 21, while very different from the Kintampo material found under extremely poor circumstances in spits 28 to 32, is also quite distinct from the Ware B pottery. This Ware C material predates the introduction of painted line pottery, extensive vessel red slipping, terracotta figurines and, somewhat later, tobacco pipes, to Daboya. This horizon appears to have extended from the latter half of the first millenium AD through to the opening third of the second millenium. Although some mixing of the archae-

ological material is suspected in spits 21-26 of DbKA12 as a result of a type of multiple burial feature, no significant difference is noticeable between the material within and without the circular feature. There was, however, a major change in the ceramic forms in the spits immediately above spit 20/21, representing the introduction of Ware D. Ware D cannot, unfortunately, be related to the arrival of the Gbanya peoples (the founders of the Gonja state); certainly, the evidence from oral and written traditions indicates an appearance of the "northern warriors" some two centuries or more later. Very little change, in fact, is archaeologically visible to reflect the introduction of a new linguistic/social/political group to the area. Perhaps the most indicative change is the appearance of horse skeletal material at about the time when the Gbanya would have arrived during the early seventeenth century.

Lab. No.	Site Provenience & spit no.	Yrs. BP	Caledrical Date
Alpha-562 (TL)	DbWA10-28	1500 BP ± 20%	ad 150-750
Alpha-563 (TL)	DbKA12-26	730 BP ± 20%	ad 1074-1366
Alpha-564 (TL)	DbA50-3	410 BP ± 20%	ad 1458-1622
GX-6133 (C-14)	DbWA10-27	2010 BP ± 140	200 bc-ad 80
GX-6134 (C-14)	DbKA12-25	1180 BP ± 165	ad 605-935

**GHANA**

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I have recently completed 7 months of dissertation field work in Ghana focused on the Kintampo Culture. The research was directed towards further elucidating the subsistence and settlement systems of Kintampo Culture. Questions of interest included the degree of reliance of Kintampo peoples on domesticated vs. wild plant and animal resources, a reconstruction of environmental conditions, and locational considerations involved in site selection by Kintampo peoples. Investigations directed towards answering these questions consisted of archaeological survey and excavation in the areas surrounding Banda-Ahenkro and the vicinity of Kintampo, both in the Brong Ahafo Region of Ghana. Systematic survey in the Banda area resulted in the mapping of 38 archaeological sites, 3 of

which clearly relate to the time period of interest. The remaining sites date to the Iron Age occupation of Ghana and are probably relatively late in time (e.g. late first to second millenium A.D.). In addition, excavations were conducted at a rockshelter site (K6) in the vicinity of Kintampo. Previous excavations at the site were conducted in the late 1960s by Colin Flight. I returned to the site in order to obtain a sample of organic remains for detailed analysis.

The rockshelter is characterized by good preservation of botanical and faunal material and excavation of a relatively small area (roughly 3m<sup>2</sup>) yielded a sizeable sample of such materials. Six discrete levels were documented, at least three of which relate to the Kintampo occupation. These are underlain by a ceramic bearing "Late Stone Age" assemblage. A thin layer of "Iron Age" occupation occurs at the top of the deposits. Locational data recovered by the survey will be combined with the data from excavation on subsistence and environmental conditions as a means of elucidating the questions of interest. Additionally, information on the location of Iron Age sites in the Banda area will

be incorporated into the study as a means of illustrating contrasting patterns of land utilization. Analysis of the materials is currently being undertaken and I hope to complete the study by the spring of 1984. Funds for the research were provided by several agencies including the National Science Foundation (Doctoral Dissertation Improvement Grant BNS 8213368), the Joint Committee on Africa of the Social Science Research Council, and the American Council of Learned Societies with funds provided by the Ford Foundation and the National Endowment for the Humanities.

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**NOTE SUR LA DECOUVERTE D'UN  
OUTILLAGE  
LITHIQUE DANS LES ALLUVIONS  
DE LA KUMA  
(REPUBLIQUE DE GUINEE)**

**Cyr Descamps**  
IFAN, B.P. 206  
Dakar, Sénégal

**Amadou Oury Diallo**  
INRDG, B.P. 561  
Conakry, R.P.R. Guinée

La Kuma est un affluent de la rive droite de la Teminé, elle-même tributaire du rio Corrubal puis rio Geba dont l'estuaire se trouve en Guinée-Bissau.

Sur le trajet d'une mission de recherches archéologiques, le 8 mars 1982, l'un d'entre nous (C.D.) a eu l'occasion d'observer les indices de l'existence d'un outillage lithique dans les alluvions de cette rivière, au voisinage immédiat du pont de la route Gaoual-Labé qui enjambe la Kumba. Le site se trouve à 24km de Bantala et à 33km de Tiangel Bori (cordonnées approximatives 12° 45' W et 11° 40' N).

Une dizaine de pièces ont été recueillies et sont en cours d'étude à l'INRDG de Conakry où elles ont été déposées. Le matériel est en roche noirâtre à grain très fin. Toutes les pièces, à l'exception d'une seule, sont extrêmement émoussées par l'action fluviale, au point de rendre difficile – et parfois impossible – l'identification typologique des outils. On note l'existence d'un gros nucléus prismatique, d'une lame à cassure proximale, et d'un éclat à talon facetté. Certaines autres pièces présentent des enlèvements bifaciaux, mais leur diagnose typologique serait à préciser par la récolte d'objets similaires

moins émoussées.

Une observation vient renforcer l'intérêt de la découverte de ces pièces. Un lambeau de terrasse alluviale dénommée "gravier sous berge" par les géomorphologues (Michel 1973) a été observé sur la rive droite de la Kumba, à une cinquantaine de mètres en amont du pont. Ces graviers sous berge sont datés d'environ 30 000 ans. La brièveté du stationnement sur le site n'a pas permis de prospecter minutieusement cet affleurement pour y repérer d'éventuels objets taillés. Mais la granulométrie moyenne des éléments, très comparable à celle des alluvions libres du lit mineur dans lesquelles ont été récoltés les pièces, rend probable cette présence. On disposerait ainsi d'un élément stratigraphique situant dans un Paléolithique déjà ancien l'industrie de la Kumba.

Une observation typologique plus poussée de l'émoussé des outils lithiques, permettrait d'individualiser, s'il y a lieu, différentes séquences culturelles.

Quoiqu'il en soit la nécessité d'effectuer une prospection systématique des cours d'eau de ce secteur (principalement de la Kumba, mais aussi ses tributaires, c'est-à-dire le réseau hydrographique convergeant dans la dépression de Gaoual: Teminé, Ouésséquelé, Bantala etc.) s'impose et permettra peut-être de découvrir des industries du même type que celles attestées plus au nord dans les alluvions de la moyenne Gambie (Barbey 1969; Descamps 1971) et très récemment plus au nord-est dans ceux de la Falémé (travaux en cours de A. Camara, M.A. Mbow, A. Ravise *et al.*).

Nous pensons qu'il y a là un objectif de recherche à mettre au programme d'une future mission mixte de l'INRDG de Conakry et de l'IFAN de Dakar.

**References cited**

- Barbey, C. and C. Descamps  
1969 A propos des pebble tools de la moyenne Gambie. Bull. IFAN, t. 1, sér. A., no. 1, pp. 276-282.
- Descamps, C.  
1971 Préhistoire. In, Le Niokolo-Koba, premier grand parc de la République du Sénégal. Dakar, G.I.A., pp. 199-203.
- Michel, P.  
1973 Les bassins des fleuves Sénégal et Gambie, étude géomorphologique. Mém. ORSTOM, no. 63.
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## LES PALEOENVIRONNEMENTS HOLOCENES DU SAHARA MALIEN

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Au Sahara malien, dans une région aujourd'hui hyper-aride, l'Holocène a été une période aux recurrences humides bien marquées. Celles-ci sont au nombre de deux: 10.000–6.500 B.P. et 5.500–4.500 B.P. Elles sont séparées par un épisode plus sec entre 6.500 et 5.500 B.P.

Ces fluctuations climatiques ont eu nombreuses conséquences. Des lacs se sont développés au cours des périodes humides. Ils étaient reliés entre eux par des biefs peu profonds. Des sols bruns steppiques s'étendaient sur les versants et les interfluves. Une steppe dense occupait les bords humides des lacs et des marais. Les plans d'eau étaient peuplés de mollusques d'eau douce et de poissons. Des crocodiles, des tortues et des hippopotames habitent sur les rives. De grands bovidés de climat humide parcouraient ces régions. L'homme, sédentaire, vivait de la pêche, de la cueillette et de la chasse.

Les conditions de vie optimales se localisaient à l'Est du Sahara malien, vers l'Ouest, au contraire, le milieu est resté plus aride, même au cours des pluviaux holocènes.

Les périodes sèches ont laissé un impact plus discret. Cependant des dunes s'installèrent dans ces régions entre 5.500 et 4.500 B.P. Elles furent légèrement grésifiées pendant la période humide suivante, au Néolithique. Enfin, l'aridité qui se manifeste après 4.000 B.P. entraîne l'édification des ergs actuels.

## ARCHAEOLOGICAL SEDIMENTS FROM SURFACE SITES AND ROCK SHELTERS IN THE BRANDBERG, WESTERN DAMARALAND, NAMIBIA

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### Introduction

The interpretation of archaeological residues can be enhanced by systematic study of the interaction between cultural/noncultural processes and organic/inorganic inputs in site formation and disturbance. The evidence for cultural ordering preserved at archaeological sites is difficult to assess unless the effect of archaeo-sedimentary processes on site arrangement is also considered. Similarly, evidence for environmental trends in stratified archaeological sites is difficult to interpret unless the cultural half of the sedimentary equation is known or can be held constant (Butzer 1982). Investigations in the Brandberg by Leon Jacobson provided the opportunity to study site formation and disturbance in a large granite inselberg on the eastern edge of the Namib desert, in Western Damaraland, Namibia.

Jacobson's Brandberg investigations included: Girls School Shelter and two settlements of open-air structures, Tsisab A and Tsisab 30, in the Tsisab ravine; and Lower Numas Cave and a presumed village site (NV 2) in the Numas valley (Jacobson 1976, 1978, personal communication). The research has included collection of sediment samples, which were analyzed at the University of Chicago Paleocology Laboratory to obtain information on the past functions of the structures that comprise the surface sites, and any evidence of past environmental changes preserved at the shelter sites.

### The surface sites

Samples were collected from two late macrolithic "Brandberg" sites, Tsisab 30 and NV 2, and from Tsisab A, a long abandoned Dama settlement for which the functions of the extant structures can be reconstructed from ethnographic reports. At each site, samples were taken from within structures or features and from an adjacent spot less likely to have been affected by human activity. It was expected that known kraals and huts of Tsisab A would have relatively high values for Phosphorus (P) and organic matter (O.M.) (from dung and

more general human use), while O.M. and P values from the prehistoric sites would provide a basis on which to confirm or refute customary inferences as to the function of structures in "Brandberg" settlements by analogy with similar structures in Dama settlements.

Tsisab 30 is located on a terrace near Girls School Shelter and is dated at 275 and 405 BP (Jacobson personal communication). The composition of all seven samples is close to that of the bedrock; however, they fall into two different size categories. This seems to be due to a greater accretion of coarse, slope-derived debris in areas either closer to slopes on each side of the site, or otherwise less protected. The Tsisab A samples are predominately quartz, only a small percentage of which is eolian, and are concentrated in the potential traction and saltation size fractions. Because of this, and the site location at the confluence of the Uis and Tsisab rivers, the Tsisab A samples are best interpreted as water-sorted quartz residue.

At both Tsisab 30 and Tsisab A there is intrasite variation of O.M. and P values which corresponds more closely to structure shape than to variation in the character or intensity of geomorphic processes. Values for O.M. and P are very low for all samples from Tsisab 30 and A. However, they seem to confirm analogies drawn between Dama and "Brandberg" settlements, if time-dependent decay of these materials can be assumed. The highest O.M. value was obtained for the Tsisab A hut structure and the second highest for the Tsisab A kraal. The highest P value was obtained for the Tsisab A kraal. Among the Tsisab 30 samples, O.M. peaks in the two crescent-shaped, hypothesized hut-structures, while P peaks slightly in the non-collapsed, hypothesized kraal.

In contrast to Tsisab 30 and A, the samples from NV 2 do not appear to contain information on past human activities. The NV 2 samples are composed primarily of locally-derived granite debris, slightly fresher looking than that of Tsisab 30 and with a slightly stronger, although still minor, eolian component. The surface sample resembles the "finer" samples from Tsisab 30, and comes from a comparable topographic location. The sample from the burial itself is of coarser grade. This difference in particle size distribution, plus a decrease with depth in grain surface weathering, macro- and microbotanical material, pH, P and O.M., as well as an increase in CaCO<sub>3</sub>, can best be explained as the effects of soil forming processes on granite rubble, following colonization of the ground surface by

some form of vegetation.

#### The shelter sites

Girls School Shelter, located near the foot of a steep slope on the edge of the Tsisab ravine, is formed by a single boulder. The site contains approximately one metre of deposit. The top 25cm ranges in age from 720 to 6500 BP. Upper levels of the deposit have produced microlithic materials; the bottom two levels contain materials which might be classified as M.S.A.. Lower Numas Cave is a shelter formed by several interlocking granite boulders. Radiocarbon dates suggest that the 80cm of deposit at this site accumulated between just after 5000 and just after 3000 BP (Jacobson and Vogel 1975). Lower Numas Cave was excavated by Rudner (1957, 1973) and Jacobson (1978). The archaeological record includes a microlithic stone tool assemblage, ostrich eggshell, an upper grindstone, broken slate pendants, a bone awl and a gemsbok horn.

There is a striking contrast among the samples from different shelters; those from the Girls School Shelter tend to be coarser and more finely skewed. Since the two deposits are formed from the same source material, their formation was probably controlled by a factor which varied spatially rather than temporally. The similarity of the samples from Girls School Shelter to the coarser samples from Tsisab 30, as well as the parallel geomorphic setting of the two sites, makes it likely that the material which characterizes Girls School Shelter is also slope-derived. The contrasting, symmetrical and poorly sorted particle size distribution of the Lower Numas Cave samples probably reflects a more completely enclosed shelter, acting as a better trap for fine sediments derived from human activities. This interpretation is supported by relatively high O.M. values, and microscopic observation of relatively large quantities of organic material (especially charcoal) in the Lower Numas Cave samples.

Variability within each of the shelter deposits can be adequately explained without postulating any change in the rate or form of granite weathering, the most climatically-sensitive factor in the site formation system.

At Girls School Shelter an increase in coarse granitic debris below a major disconformity can be interpreted as a residual deposit. In level five there is a relatively high clay content and relatively low proportion of coarse material beneath the 6500 ± 75 BP date but above the probable M.S.A. levels. This is probably an artifact of comparatively in

tense human occupation; the high O.M. and P values simulated the relatively high clay content.

At Lower Numas Cave the samples from the interior and exterior surfaces contrast with each other and with the remainder of the sequence. The interior surface contains a substantial amount of coarse granitic debris and a relatively large amount of clay. It is probably a mixture created since the abandonment of the shelter; the major source of fine sediment was removed and minimal clay formation took place, but the addition of coarse weathering products continued. The external surface sample is similar to the fluvially sorted, Tsisab A deposit, although composed of relatively fresh granitic debris. It probably reflects geomorphic processes active on the floodplain better than those active in the shelter. While these intrasite differences can be explained with reference to predominantly cultural inputs and special environmental circumstances, the actual sampled deposits are not contemporaneous and it is impossible to rule out some role for climatic change in their formation.

#### Conclusion

Analysis of sediment samples collected from Tsisab A and Tsisab 30, stone-built villages in the Brandberg, has provided support for the use of ethnographic analogy in the interpretation of structure function on the basis of shape. If overall low values of, and a time-dependent decay for, O.M. and P are accepted, some evidence has been obtained that, like the Dama, groups associated with the "Brandberg" industry used crescent-shaped structures for huts and circular ones for kraals. On the other hand, the shelter samples did not provide evidence for environmental change in the Brandberg. The shelter analyses do illustrate the importance of separating cultural and non-cultural sediment inputs, and provide evidence for one phase of relatively intense human occupation; level five of Girls School Shelter, which was later than the probable M.S.A. levels but earlier than the  $6500 \pm 75$  BP date obtained from level three.

#### References

- Butzer, K.  
1982 Archaeology as Human Ecology. Cambridge: Cambridge University Press.
- Hodgson, F.  
1973 Petrography and evolution of the Brandberg Intrusion, S. W. A.. Spec. Publ. Geol. Soc. So. Afr. 3: 339-43.
- Jacobson, L.  
1976 Mid-Holocene to Recent cultural changes

in the Brandberg, S. W. A.. Paper presented to section V, 9th U.I.S.P.P. Congress, Nice.

- 1978 A study of functional variability in the Later Stone Age of Western Damaraland, Namibia. B.A. Honors paper, University of Cape Town.
- Jacobson, L. and J. C. Vogel  
1975 Recent radiocarbon dates from the Brandberg. So. Afr. Jrl. of Sci. 71: 349.
- Maggs, T.  
1971 Pastoral settlement on the Riet River. So. Afr. Archaeol. Bull. 26: 37-63.
- Rudner, J.  
1957 The Brandberg and its archaeological remains. Jrl. So. W. Afr. Sci. Soc. 12: 7-44.
- 1973 Radiocarbon dates from the Brandberg in South West Africa. So. Afr. Archaeol. Bull. 27: 107-8.

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## DEPARTMENT OF ARCHAEOLOGY UNIVERSITY OF IBADAN

*We have received the following news of activities from the Department.*

#### Modified departmental programme

Up until the end of the 1981/82 session, the Department offered Honours B.Sc. and B.A. archaeology options as well as combined Honours with Geography, Geology and Zoology in the Faculty of Science and History, Religious Studies and Classics in the Faculty of Arts. We now have approval in principle to add Anthropology options to our programme. We are starting by the addition of a B.A. and B.Sc. Cultural Anthropology option, and plan to add an option in Biological Anthropology within the next three years. Additional lectureships in Anthropology have been approved. Two of these are still vacant (as of January 1983, ed.), and applications are invited from suitably qualified candidates. Those interested should apply to the Deputy Registrar, Establishments, University of Ibadan, and enclose a curriculum vitae. Additional information can be obtained from the Head, Department of Archaeology, University of Ibadan.

#### Research news

*The Benue Project - investigating the 'Bantu' phenomenon*

With the help of a grant from the National Monuments and Museums Commission of Nigeria, a

research team led by Prof. B.W. Andah spent a third field season during September at Adikpo. Further reconnaissance was carried out near Tsedura and Ushongo. The plan is to spend a short period of about two weeks in the early part of 1983 completing the first phase of this long-term project. A detailed report is being prepared for the Pan African Congress.

#### *Anambra Valley Project*

An initial ethno-archaeological survey of parts of this valley by A.I. Okpoko is nearing completion. This research has had two main goals:

1. to use oral traditions to generate hypotheses for archaeological studies of Igbo/Igalla relations in pre-European times;
2. attempt to study the technological facet of culture, especially plotting traditions of these two peoples from an emic ethnographic perspective.

The work is being written up for a Ph.D. at the University of Ibadan.

#### *I.I.T.A. Project*

After the establishment of I.I.T.A., an experimental archaeological reserve was set up by the Department on the territory of one of the former villages in the area, Adesina Oja. One of the experiments envisaged was a monitoring of the process of decay at the village. Apart from that, experimental plots were set up to monitor bank and ditch erosion, differential vehicle transport and decay of organic objects. It was envisaged that these experiments would be regularly re-excavated to check on changes with time.

In 1980-82 three excavations were carried out by the Department at the village, and in 1981-82 re-excavations were undertaken at all three of the experimental plots by P.A. Oyelaran as part of his M.Sc. project.

#### *Niger Delta Project*

Two field seasons of work have been completed in the central Niger Delta by A.A. Derefaka, and these have been reported previously in NA. A third field season is planned for late in 1982 or early 1983. This research project will form the basis for Derefaka's Ph.D. thesis at the University of Ibadan.

#### *Old Oyo Project*

Several field seasons have been carried out at Oyo Ile by B. Agbaje-Williams for his Ph.D. dissertation. The work is progressing well and he expects to complete the degree in early 1983.

#### *Palynology laboratory*

The laboratory was established 12 years ago and now has a reference collections of pollen and spore microscope slides for about 3,000 Nigerian species. Research is centered on the reconstruction of the vegetational history of Nigeria and the establishment of botanical evidence for the beginnings of plant domestication. Palynological analysis of a core from the Niger Delta has shed a great deal of light on these two areas of research.

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## NATIONAL COMMISSION FOR MUSEUMS AND MONUMENTS IBADAN

*The Director's Office of the Commission has sent the following report on recent activities.*

In October/November 1982, Mrs. A.K. Okoro led a team of archaeologists to Igbo 'Laja, a site at Owo in Ondo State, which was excavated by Dr. Ekpo Eyo in 1971. The first excavation had recovered numerous terra-cotta objects rendered in both Ife and Benin styles. During the 1982 excavations a concentration of sculptures was discovered south of the area excavated by Dr. Eyo. Terra-cotta fragments of human figures were found. One of the fragments, a beaded arm, retained a piece of manilla showing that manilla was used for ornamentation during the period when the sculpture was made. This site proved Dr. Eyo's earlier assertion that there might be other foci for sacrifices at Igbo 'Laja in addition to the one he discovered. The site has been estimated to date before the 16th century AD, the time when manilla is known to have been used as an ornament. Dr. Eyo's radiocarbon dating for the concentration of sculptures was 15th century AD.

The second site excavated at Owo (the Iregun Street site) contrasts completely with Igbo 'Laja. The objects recovered, mostly terra-cotta representations of human heads, are rendered in the abstract. Only two realistic miniature heads (6.5cm high) of a male and a female, were rendered in the classical Ife style with striations. Rather than the shrine objects found at Igbo 'Laja, the Iregun Street site produced objects used for household decoration. However, one similarity was noted: the use of the "cat whiskers" design on either side of the mouth of some of the abstract heads. This design is also found on some of the heads from Igbo 'Laja and Ile-Ife. As

well, there is a striking similarity between the Iregun Street abstract heads and those from Abiri in Ile-Ife.

Some radiocarbon samples were collected, and the results of analyses are awaited. Until these are available it will not be possible to say whether or not the two art traditions were contemporary.

Archaeological survey work at Owo also revealed the existence of an extensive iron smelting site at Itorogunso.

**Kagoro Rockshelter**

During reconnaissance work by Mrs. A.K. Okoro in December 1981 at Kagoro in southern Zaria, it was discovered that rockshelters abound in the Kagoro Hills. In April/May 1982, test excavations were conducted at two of these rockshelters: RS1 located on the hill top, and RS2 located at the foot of the hill. RS1 yielded materials characteristic of the aceramic and ceramic phases of the West Africa LSA. The materials recovered from RS2 were mainly potsherds with no stone artefacts. Some charcoal samples were collected for dating. Work will continue in Kagoro during the next dry season.

Mr. B.E. Basseyy-Duke is currently studying the early historic iron smelting technology in the north central region of Nigeria. In this regard he has already done some random sampling of the furnaces at Badiko on the outskirts of Kaduna town.

Mrs. J.E. Akata has also commenced reconnaissance activities at Gwarto, a former Benin trading post in Bendel State.

**A QUERN FACTORY IN THE SOUTHERN SAHARA**

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While travelling between Laouni (20°30'N 05°47'E) and In Guezzam (19°32'N 05°42'E) in 1976, I observed several oval-shaped rings cut into vertical rock-faces. Photographs subsequently shown to colleagues elicited no specific information, although G. de Beauchêne did suggest that querns might be involved.

The following seasons revealed a few more rings, always in the same general area. A sharp watch was

kept for them elsewhere, without result. It was not until 1982 that I found a site showing beyond doubt that they represented unfinished saddle-querns. Fig. 1 shows an embryo quern in a horizontal rock-face: there were a number of roughly similar shapes on an adjacent rock wall, some of them considerably larger. Most formed scooped-out depressions, as opposed to mere rings, and this was taken as indicative of successful extraction. Traces of fire were not observed, and the method of final extraction is not known (cf. Rahtz & Flight, 1974).

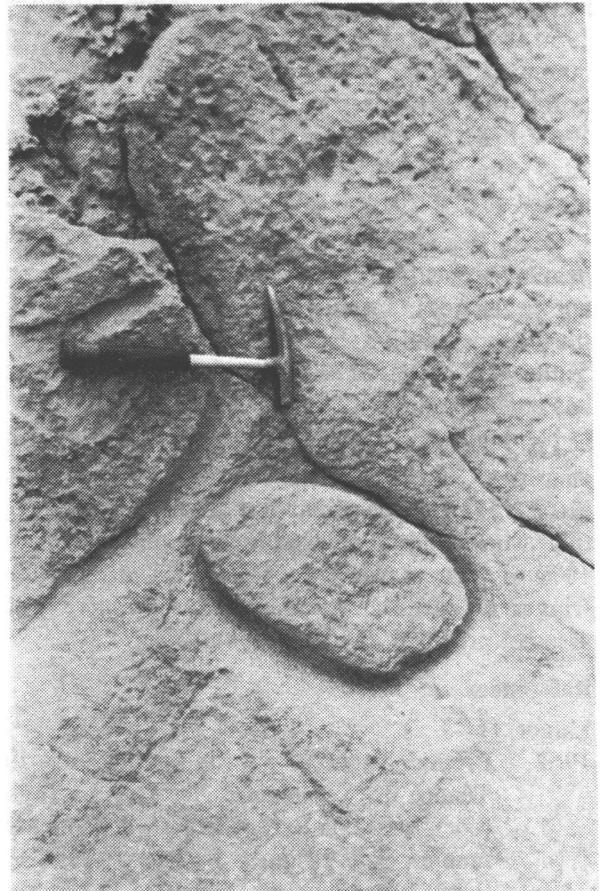


Fig. 1: In situ partially finished quern.

Several points of interest emerge. M. Gast informed me (September 1982) that no one has published photographs of a similar phenomenon in the Sahara. From this it may be inferred that querns were normally hewn out from such loose stone blocks as were available. This may be the case at Adrar Madet (18°39'N 10°27'E), the sole apparent manufacturing site I have seen elsewhere. Secondly,

the area under consideration displays a prodigious amount of grinding equipment, and upper stones are extremely varied: a situation may be imagined whereby a scarcity of suitable loose blocks finally arose.

Even allowing for the erosion of sandstone (traces of which are common enough in the Sahara and ubiquitous in this particular zone) sometimes ending in severe falls of rock, it is curious that there are almost no hints as to the existence of quern extraction sites in Saharan Algeria and Niger.

The Berliet Tchad Mission visited Greïn (20°30'N 10°55'E) in the late afternoon of 29 Nov. 1960 and departed at 0645 the next morning, noting innumerable rough-outs of querns on the slopes but failing to mention seeing an extraction-site (Hugot 1962: 176). R. Mauny has kindly confirmed (April 1983) that there was no time to look for one and indeed no pictures of it seem to have been published.

G. de Beauchêne has told me (April 1983) of a hearsay report from Europeans in 1963 (which cannot be verified) that querns were being extracted by the local population somewhere in the region of Dao Timni (20°33'N 13°33'E): no further information has emerged since.

Th. Tillet has confirmed (January 1983) that his enquiries among elderly Tubu at Seguedine (20°12'N 12°59'E) reveal that querns now in use by their womenfolk are picked up on neolithic sites. In 1979 my own investigations among Tuareg on the fringes of eastern Aïr and western Ténéré Taf-assasset provided an identical answer.

#### References

- Hugot, H. -J.  
1962 Premier aperçu sur la préhistoire du Ténéré du Tefassasset. In, H. -J. Hugot (ed.), Missions Berliet Ténéré Tchad. Documents Scientifiques. Paris: Arts et Métiers Graphiques. pp. 149-178.
- Rahtz, P. A. & C. Flight  
1974 A quern factory near Kintampo, Ghana. *West African Journal of Archaeology* 4: 1-31.

## NOUVELLES PEINTURES ET GRAVURES AU TASSILI DU N.-O. LE QUADRIGE "GREC" (DECOUVERTES KUNZ)

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Notre album des figurations rupestres sahariennes s'enrichit insensiblement au fil des ans. Mais ces dernières années, c'est tout au ensemble copieux qui vient d'être ajouté à nos connaissances; celui des peintures et gravures du Tassili du Nord-Ouest, publié par Kunz (1974, 1977, 1979).

Notre but ici n'est point la description des trouvailles: on se reportera pour cela à Kunz (1979) qui en donne un excellent inventaire, brièvement commenté. Nous visons plutôt ici une étude critique: quels éléments nouveaux, quelles confirmations, quels problèmes ces trouvailles nous apportent-elles?

La région concernée constitue la pointe Nord-Ouest du massif tassilien, dont nous ne connaissons pratiquement, jusqu'ici, en fait de figurations rupestres, que l'abri de Tamadjert, avec ces chars célestes, et deux chars de Weiseren, sur des croquis de Brenans, mais leur localisation topographique avait été perdue. La reconnaissance de Kunz couvre quelque 75 × 75 km, dans le Fadnoun et à l'Ouest de ce dernier. Les sites les plus orientaux se situent à une cinquantaine de kilomètres à l'Ouest de l'oasis d'Iherir, soit à 200km au Nord-Ouest des sites classiques du Tassili central (Sefar, Jabbaren, etc.). L'oued Djerat n'est qu'à 50km au Nord-Est. La région est très accidentée, il s'agit de roches d'âge primaire, assez analogues à celles du Tassili central. L'érosion éolienne les a déchiquetées en "forêts de pierre" (les "Irrekam") comme à Sefar, avec d'innombrables abris sous roche et "taffoni", où se recroisent les figurations.

Pour l'essentiel, nous avons affaire à des peintures. Si l'on excepte les réalisations d'âge camélin, la quasi-totalité de ces peintures se classe dans deux écoles: le style que nous avons dénommé *d'Iheren-Tahilahi* (Muzzolini 1981) et les réalisations classiques de la *période du cheval*.

#### 1. Le style d'Iheren-Tahilahi

Nous retrouvons ici le prolongement des belles fresques des sites du plateau de Tahilahi. La facture est aussi élégante, l'homogénéité stylistique de l'ensemble est frappante. La technique reste identi-

que, utilisant le trait fin et l'aplat ocre. Comme à Iheren, des moutons – les premiers qui arrivent au Sahara central – accompagnent des boeufs. Ces derniers, au dessin admirable (ceux de Tissebouk, 1979, 6-2 semblent une copie exacte des plus élégants de Tahilahi) comprennent des boeufs sans cornes et des boeufs à cornes ballantes, comme à Tahilahi, et aussi des boeufs à cornes en avant très longues (improprement appelés *brachyceros* dans la littérature saharienne), comme à Iheren.

Les femmes portent des robes à bords arrondis et frangés de passementerie, typiques du groupe. Leurs coiffures recherchées rappellent celles d'Iheren (1979, 3-3). Les hommes portent des peaux de bêtes ou les jupes courtes, usuelles dans cette période comme d'ailleurs dans la période du cheval. Un chasseur (1979, 5-1) porte les cheveux en aigrette, comme les personnages bien connus de Tahilahi. Les plumes de "Libyens" sur la tête apparaissent fréquemment dans l'inventaire de Kunz.

Les boeufs aux paquets assujettis sur les cornages (1977, Fig. 3), ou le boeuf monté, sont d'autres thèmes classiques du groupe (1979, 5-2 et 8-6). Les armes comprennent encore l'arc (très rare) et surtout l'arme courbe ou le bâton de jet.

Les personnages révèlent *exclusivement* des types européens (malgré de fréquents profils de visages "en museau", fréquents également dans les sites du plateau de Tahilahi, et qui sont seulement conventionnels ou caricaturaux). Les peintures corporelles apparaissent plus rarement ici, mais existent, identiques (1977, Fig. 4).

Les enclos, réniformes ou vaguement ronds, barrés de traits parallèles représentant la charpente en bois, sont bien les mêmes qu'à Iheren (1979, 3-3 et 20 ou 1977, Fig. 12): ils sont très nombreux ici.

Les thèmes classiques de la chasse au lion (1979, 10-1) ou au mouflon (Ti-ni-Tarleften E, etc.) sont figurés. Ainsi que celui, très original dans ce groupe, de la chasse avec un mouton ou antilope comme appât ou leurre: v. 1979, 7-2 ou surtout 5-1, que l'on connaît identique à Jabbar. Une scène (Musée Cologne, p. 301 ou 1977, p. 5) montre deux Européens à peintures corporelles, armés du bâton de jet courbe. Elle illustre une chasse à la girafe: un animal (antilope ou girafe ?) suit les personnages, l'un d'eux lui tenant apparemment la patte.

Ces compositions de style Iheren-Tahilahi ne montrent pas de chevaux – d'où leur attribution, *pour l'essentiel*, un "Bovidien final" – sauf deux exceptions: celle, discutée plus loin, du quadrigé d'Ikadnouchère; et un cheval signalé à Ti-n-

Tarleften F, probablement attribuable aussi au groupe d'Iheren-Tahilahi, car les abris voisins ne contiennent que ce style.

Cette extension vers l'Ouest du groupe d'Iheren-Tahilahi montre qu'il s'agit d'un groupe important couvrant tout le Tassili et l'Acacus (dans ce dernier massif, son correspondant est le groupe du "Pastorale antico" de Mori, ou "Pasteurs de Uan Amil": ils sont contemporains du "Bovidien final" tassilien).

## 2. Le style schématique de la période du cheval

Il est bien représenté, avec ses classiques personnages à tête-bâtonnet, les personnages en file ou assis sur des tabourets à quatre pieds, less chasses au mouflon ou à l'oryx avec des chiens, et surtout les chars dits "au galop volant". Mais alors que le style d'Iheren-Tahilahi se rencontre dans tous les secteurs, sauf dans deux sites du Sud-Ouest (Tamajert, Intemeilt), les peintures de chars ne se relèvent que dans ces deux sites et trois autres, voisins, en bordure Sud-Est. Ici, une "route des chars" semble bien longer le massif tassilien sur sa bordure Sud.

Nous laissons de côté ici trois chars gravés apparaissant à Tachoumoulas, un site excentré au Nord-Est (Kunz 1979 n'en citait qu'un, douteux, mais il a dû en découvrir deux autres, v. Lhote 1982): leur inspiration et leur facture sont différentes, ce sont celles du Djerat tout proche.

Les seuls sites comprenant à la fois du style Iheren-Tahilahi et des chars sont les trois sites, relativement voisins, de la bordure Sud (Tedar, Ikadnouchère et Weiresen). Peut-être doit-on interpréter cette association comme une vague suggestion que l'Iheren-Tahilahi de la bordure Sud (et donc le quadrigé étudié plus loin) y soit un peu plus tardif qu'ailleurs.

L'abri de Tamajert est bien connu par ses nombreux et très beaux chars (v. diverses illustrations dans le récent ouvrage de Lhote 1982, sur les chars sahariens). Nous signalerons seulement, pour la petite histoire, que nous avons retrouvé, sur les photos, ni l'embarcation ni le dauphin énigmatique parfois décrits sur le plafond de la grotte. Il ne s'agit, bien confirmé par le contexte, que d'un banal "enclos" de la période du cheval, vaguement rectangulaire à angles arrondis (analogue à celui de 1979, Taf. 11-2), où des taches signalent, à l'intérieur, des restes de personnages, très détériorés, non "lisibles". Les "relevés" se prêtent trop aux visions personnelles...

3. Quelques représentations de personnages en aplat ochre (notamment à Ti-n-Tarleften A, site qui

paraît très spécial au sein de l'ensemble, et à Weiresen) sont probablement à attribuer au *Groupe d'Abaniora*.

Elles doivent être assez récentes d'âge, puisque nous y relevons des lances et le petit bouclier rond de la période du cheval (1979, 4-1). Par contre, un site (I-n-Akkarane) présente des personnages et un éléphant festonné, typiques du style d'Abaniora, sur la même paroi que les scènes du style d'Iheren-Tahilahi. L'une des scènes de T-n-Tarleften (1979, 10-2) figure d'ailleurs des danseurs en file, brandissant le bâton de jet, très semblables à ceux d'un panneau d'Iheren (Muzzolini 1981, Fig. 12).

Il se confirme donc que les deux groupes d'Abaniora et d'Iheren-Tahilahi sont d'âge voisin, ce que nous soupçonnions (Ibid.).

4. L'un des apports les plus originaux de la reconnaissance est constitué par des *Têtes Rondes*: peu nombreux, mais, à notre avis, certains.

A Intemeilt (au Sud de la zone prospectée), une frise de mouflons de grandeur naturelle appartient incontestablement aux *Têtes Rondes* (1979, 8-3 et 1974, 15). La teinte passée, le contour à gros traits, le muflon arrondi, ne laissent aucun doute. L'attribution au sous-groupe des "Martiens évolués", que nous proposons, est moins sûre, parce que ce sont généralement plutôt les antilopes que les mouflons qui sont ainsi traitées, dans ce groupe, avec un tel muflon rond. Un mouflon voisin, de même style (non publié) est sous-jacent à un animal (boeuf ou antilope ?) de patine ocre plus vive, et traité dans le style des phases finales *Têtes Rondes*, avec rayures en peinture blanche (Intemeilt 5).

Egalement encore inédit, un personnage de style *Têtes Rondes* indiscutable, du type "Dame Blanche" (phase finale des *Têtes Rondes*) à points blancs, mais de facture toutefois un peu fruste, analogue aux *Têtes Rondes* de l'Acacus, nous a été aimablement montré par Kunz.

Ces *Têtes Rondes* étendent vers l'Ouest la limite nord-occidentale de cette école, qui n'avait pas été jusqu'ici reconnue au-delà d'Abaniora, dans la région d'Iherir. Nous notons ici encore que seules les phases finales paraissent représentées – mais l'échantillon est trop réduit pour que nous puissions l'assurer.

5. Nous hésitons à classer dans les *Têtes Rondes* – mais nous ne savons bien où les classer ailleurs – des personnages relativement fréquents, à tête zoomorphe (ex. 1979, Taf. 4-4 à tête d'antilope – des figures à tête de boeuf à I-n-Akkarane, 9 etc.). Nous ne les connaissons pas dans le groupe

d'Iheren-Tahilahi. Leur facture, d'ailleurs, est très différente ici, elle se rapproche plutôt de celle du style d'Abaniora. Leur consonance est aussi, vaguement, avec le groupe des *Têtes Rondes* (personnages à tête d'équidé d'Asadjan-oua-Mellen, v. Tschudi 1955; les têtes à cornes de Uan Tamauat dans l'Acacus, v. Mori 1965, Fig. 79 – et plus généralement le sous-groupe des "Masques" chez les *Têtes Rondes*). Ils évoquent également les gravures thériomorphes d'In Habeter ou du Djerat. Un site excentré, au Nord-Est (c'est-à-dire peu éloigné du Djerat), Tachoumfoulas, renferme de nombreuses gravures comportant des thèmes phalliques et aussi des "femmes ouvertes" – comme au Rocher Ahana – avec des têtes d'animaux et enfin des spirales. Le mélange est bien celui du Djerat.

6. Une absence remarquable et totale (nous ne pensons pas qu'il faille retenir comme exception une mention isolée de "traites négroïdes" sur le site de Tedar) est celle du "groupe de Sefar-Ozanéaré", celui des Négroïdes du "Bovidien ancien", bien connu et très abondant au Tassili central. Ce groupe ne dépasse pas les sites de la région d'Iherir, où il n'est d'ailleurs repéré que dans quelques compositions douteuses.

7. Une fresque unique, mais nette, nous montre à I-n-Eleli des "Pasteurs de Ti-n-Anneuin", les mêmes que ceux de Mori dans l'Acacus, avec leur petit manteau ocre sur l'épaule, et les mêmes attitudes. Les associations, sur les panneaux voisins, révèlent des guerriers libyco-berbères et des personnages classiques de la période du cheval, assis sur des tabourets (et peut-être même des tiffinars et des chameaux ?). Ceci nous confirme que les Pasteurs de Ti-n-Anneuin ("Pastorale récente" de Mori) sont contemporains, en fait, de la période du cheval tassilienne, et même d'un stade assez avancé dans cette période.

Un cheval, dans le coin gauche inférieur de la fresque, et trois autres dont un au "galop volant", signalés dans l'inventaire, ôtent d'ailleurs toute hésitation à ce sujet.

8. Une fresque d'I-n-Zilla (1979, 12-2) nous montre des personnages schématiques, de face, en position d'orants, présentant les trois javelots et portant le poignard de bras. Des cheveux à croupe ravalée les accompagnent. L'ensemble rappelle exactement les "guerriers libyens" classiques dans l'Air, à l'étage caballin évolué et au Libyco-berbère. Des personnages schématiques de ce style, que nous attribuons ici aussi au Libyco-berbère, se retrouvent dans les sites de Tikadensermerdine, I-n-Eleli et Aharhar. On relève même de typiques "têtes cham-

pignons" à I-n-Eleli. A Tikadensermerdine, un "guerrier libyen", à plumes, est noté également en gravure, avec patine claire (1977).

Le site d'Aharhar est le seul entièrement d'époque cameline (avec cheval et chameau montés, tiffinars, enclos rectangulaire camelin). Les autres révèlent des tiffinars (notation récent) mais aussi un archer (notation ancienne) et pourraient être moins récents. Aucun des cinq sites que nous venons de nommer ne contient du style Iheren-Tahilahi, la disjonction paraît significative. Par contre, du Libyco-berbère analogue est représenté dans les deux sites du secteur Sud-Est, Tedar et Ikadnouchère, qui contiennent, eux, de l'Iheren-Tahilahi. Cette association suggère à nouveau que l'Iheren-Tahilahi d'Ikadnouchère (et donc le quadrige) y soit peut-être plus tardif qu'ailleurs.

9. Deux fresques, capitales pour la compréhension des problèmes relatifs aux types de boeufs sahariens, sont celles de Tamadjert A (1979, 14-1) et celle d'Ikadnouchère (Müller-Karpe 1980). Dans un contexte non équivoque de personnages de type "Equidien", à têtes-bâtonnets, et de chars (c'est-à-dire des débuts de la période du cheval) un boeuf, à Tamadjert, dans le coin inférieur droit, parfaitement conservé, bien détaillé, et un autre à Ikadnouchère, sont d'authentiques *brachyceros*. Le texte en signale un autre à Irharmane F1, dans un contexte Iheren-Tahilahi analogue. Ces boeufs constituent, à notre connaissance (et malgré les nombreuses mentions de prétendus "*brachyceros*" ou "*ibericus*" antérieurs, depuis le Villafranchien), les premiers *B. brachyceros* incontestables apparaissant sur des figurations rupestres sahariennes. Notre thèse est que ces *brachyceros* modernes sont introduit au Maghreb dans le courant du 1er millénaire av. J.-C., à partir de *brachyceros* européens ou asiatiques (et n'ont rien à voir avec les *ibericus*, lesquels sont des *primigenius* de taille réduite), mais cette thèse est controversée.

Signalons encore, au sujet des boeufs, de probables "boeufs à bosse", à l'étage des chars (à Weiresen, 1979, 2-1 et peut-être aussi 6-6). Ces boeufs à bosse, joints à une trentaine d'autres exemples dans les figurations de diverse étages préhistoriques, nous on permis de soutenir la thèse d'une souche autochtone de zébu africain, contrairement à la thèse usuelle de la diffusion en Afrique du zébu asiatique (Muzzolini 1983).

10. La bordure Nord comporte quelques gravures d'animaux (éléphants, rhinocéros) à patine "totale", de style "bubalin", mais pas de la meilleurs venue: certaines rappellent plus le "groupe ancien" de

l'Acacus que les belles oeuvres réellement "bubalines" du Djerat ou d'In-Habeter. On ne perçoit, ici non plus, aucun rapport avec les thèmes et les personnages des peintures. Nous ne disposons pas d'éléments en nombre suffisant pour apprécier si ce "bubalin"-là est vraiment très ancien. D'autres gravures s'avèrent manifestement, par leur style et leur facture, âge plus récent (ex. la girafe Taf. 19-3), d'autres encore d'âge camelin. On note que les gravures sont strictement cantonnées à la bordure Nord du massif tassilien.

11. La découverte la plus spectaculaire de Kunz (1979) est celle d'une peinture de quadrige aux chevaux en position cabrée à Ikadnouchère. Dans notre opinion, la technique picturale, la "manière", ainsi que les détails tels que le manteau à frange en zigzag de l'aurige, montrent que la composition relève du style d'Iheren-Tahilahi. Ce style naturaliste diffère de celui de trois chars au "galop volant", du type schématique habituel, figurant aussi sur la paroi; néanmoins, l'ensemble possède une patine vieillie assez analogue, et nous ne croyons pas qu'ils soient d'âge sensiblement différent.

Or Müller-Karpe (1980) a étudié ce quadrige et il y décèle l'influence de modèles grecs du 5e, 4e ou n'est pas contraignant, mais paraît au moins probable: une inscription tiffinar, proche du quadrige, et de même patine vieillie, confirm un âge assez avancé; et par ailleurs l'un des chars au "galop volant"

#### Bibliographie

- Kunz, J.  
 1974 Neue Sahara-Felsmalereien. Antike Welt 1:19-26.  
 1977 Neue Felsbildfunde in den westlichen Tassili-n-Ajjer (Algerien). Paideuma 23:1-17.  
 1979 Felsbilder der westlichen Tassili-n-Ajjer (Algerien). Beiträge zur allgemeinen und vergleichenden archäologie, I. DAI 1:201-222.
- Lhote, H.  
 1982 Les chars rupestres sahariens. Des syrtés au Niger par les pays des Garamantes et des Atlantes. Toulouse: Editions des Hespérides.
- Mori, F.  
 1965 Tadrart Acacus. Turin: Einaudi.
- Müller-Karpe, A.  
 1980 Eine Quadriga-Darstellung in der Zentral-Sahara. Allgem. und Vergl. Archäo. Beitr., DAI 2:359-380.
- Museen der Stadt Köln

- 1978 Sahara, 10.000 Jahre zwischen Weide und Wüste.  
Muzzolini, A.
- 1981 Le groupe européen d'Iheren-Tahilahi, étage "Bovidien final" des peintures du Tassili. *Revue de l'Occ. musulm. et de la Médit.* 32(2):121-138.
- 1981 Essai de classification des peintures bovidiennes du Tassili. *Préhist. Ariégeoise.* 36:93-113.
- 1983 Sur un quadrigé "grec" de style Iheren-Tahilahi, au Tassili du N.O. (à paraître).
- 1983 Les boeufs du Sahara central au Néolithique: art rupestre et chronologie. Thèse 3e cycle, Université d'Aix-en-Provence.
- Tschudi, J.
- 1955 *Pittura rupestri del Tassili degli Azger.* Florence: Sansoni.

## SOMALIA (BARAWA)

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Neville Chittick, British Institute in Eastern Africa, carried out test excavations and survey work at Barawa. These were dug to a depth of rather over 4m; the base was not reached owing to the instability of the soil. It seems likely that the total depth is 7m or more. Attempts to relocate the source of the Early Iron Age sherds found some years ago outside the town were unsuccessful.

H. Costa-Sanseverino and B. McCrum, who had assisted in the work at Barawa, afterwards carried out survey work on the Islamic settlements south of Kisimayu, which have not previously been recorded in detail. It is hoped to publish an article on this work in *Azania*.

## RECONNAISSANCE IN COASTAL SOUTHERN SOMALIA

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A reconnaissance survey was carried out in September, 1982 to Ras Kiambone in southern Somalia

jointly with Dott. Margherita Mussi of the Istituto di Paleontologia, Rome. Due to the inaccessibility of the site, little is known of this settlement. Our preliminary survey showed the existence of a sizeable town on the coast, slightly north of the modern village.

Seasonal weather conditions permitted only a cursory examination. However, six tombs and pillar tombs were observed. Several have fine decorative work, and the largest has a central pillar of approximately five metres. Several pillars originally had porcelain bowls set into the structure, but only one of these remains. There are the ruins of a small mosque, its mihrab still preserved, on the cliff overlooking the sea. Stones from the mosque have been used to build a cairn several metres to the south.

The area observed covers approximately ten acres and some of the original stones have been cleared by the villagers in order to grow maize. There are remains of small houses and walls in the dense scrub to the west of the mosque. There is also evidence of further pillar tombs and the ruins of an archway built on the next promontory, a few kilometres to the north.

Dhows continuously call in at Ras Kiambone, so it may be assumed that the old town had strong trading connections in the past. More accurate dating of the remains will not be possible until a return visit is made and more samples of pottery and porcelain can be collected. We plan this visit for the spring of 1983, and hope that further study will add to the history of the southern Somali coast.

## SUDAN ANTIQUITIES SERVICE AND NATIONAL MUSEUMS

*The following report, dated November 1982, was sent by S.A. Kamair for the Acting Director General.*

Last winter, members of the Archaeological Fieldwork Section participated in a number of excavations and surveys conducted by foreign missions in addition to inspection tours to many archaeological sites scattered throughout the country. The following is a brief summary of these missions.

### *University of Geneva expedition*

Under the direction of Professor Charles Bonnet, the Swiss mission started its excavations at Kerma (northern Sudan) on 7 December 1981, and continued for two months. It continued the architec-

tural analysis of the religious complex in the ancient town of Kerma and excavated a group of extraordinary graves in the Eastern Necropolis. The mission included a physical anthropologist and an archaeozoologist. The Antiquities Officer accompanying the mission made an inspection tour of a number of archaeological sites on both banks of the Nile as far north as Sadenga.

*University of Warsaw expedition*

The Polish expedition worked at the Christian capital (Old Dongola) from 5 February to 15 March 1982. Directed by Professor S. Jakobielski, the mission resumed excavation of the Christian houses and the recovery of the plastered murals on the interior walls of the Dongola mosque.

*Oriental Institute of Naples expedition*

This mission, directed by Dr. R. Fattovich, is engaged in surveying the Gash Delta (Kassala Province, Eastern Sudan), a part of the country which is almost unknown archaeologically. Hundreds of new sites have been discovered and recorded systematically.

*North Texas State University expedition*

This is a joint venture with the University of Khartoum, under the general direction of Dr. T.R. Hays. The mission spent three months surveying the Buttana region (north central Sudan) which is rich in archaeological remains.

*University of Rome expedition*

This mission, headed by Professor S. Donadoni, undertook excavations at the Napatan religious centre at Jebel Barkal (northern Sudan). Two well preserved lion statues were discovered and removed to the regional archaeological museum at Jebel Barkal.

*The French Archaeological Unit*

Under the direction of Dr. F. Geus, the members of this section are working in the Sudan following a cultural agreement between the French and Sudanese governments. For six successive seasons the unit has been engaged in rescue excavations at Al Kadada (Shendi region), an area rich in remains and seriously endangered by the construction of new agricultural schemes. Many prehistoric and Meroitic sites have been recorded and excavated systematically.

*Expedition of the Istituto di Paletnologia, University of Rome*

Under the direction of Professor S. Puglisi, this

mission carries out yearly excavations on prehistoric sites a few kilometres north of Khartoum. The work last season was supplemented by a geological survey in the region of the 6th Cataract.

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**EXCAVATIONS BY THE  
ARCHAEOLOGICAL MISSION  
OF THE UNIVERSITY OF GENEVA  
TO THE SUDAN  
1982-1983 SEASON**

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The research that was begun ten years ago has been continued this winter at Kerma (Northern Province). The Swiss Archaeological Mission has also taken on responsibility for excavation at sites that are endangered by development in the urban areas or by enlargement of the areas of cultivation. As a result, a building of the Napatan era (about 500 BC) has been discovered. This construction appears to belong to the urban centre which developed after the abandonment of the ancient city of the 3rd and 2nd millennia. Within the ancient city, which is one of the oldest on the African continent, a large surface area has been studied and the stages of architectural development have become clearer. In the necropolis, several tombs have revealed new and original discoveries as well as providing abundant material.

**The Napatan building**

A project for the construction of a house on a plot of land in the centre of the modern town of Kerma that contained signs of archaeological remains, prompted us to intervene. The owner of the plot, Sayid Ali Bakhit, has kindly agreed to delay construction, and we have thus been able to uncover the mud brick masonry of an edifice which was modified many times. The building contains a group of elongated chambers, oriented on a N-S axis. On the southern side there is a vestibule and annex rooms. Several ceramic vessels filled with ash and wood charcoal were found set in the mud. Other pottery (probably buried as foundation deposits), beads and faience amulets have also been recovered. To the west, there are domestic ovens which were used to prepare bread for offerings (?). Conical, flat or rounded bread molds have been found which are

comparable to those present at other sites in the region (Gebel Barkal, Kawa, Tabo). The ovens of the temple were built upon older remains, and the arrangement shows that bread making continued during a long period.

A preliminary study of the pottery and other objects recovered suggests an occupation dating to the Napatan era. Excavations during our next season will permit the recognition of earlier levels and establish a plan of the successive buildings. It will be necessary to extend the research in order to understand how the later urban centre was organised around this monument.

### The ancient city

A vast surface clearance has revealed part of the southwestern quarter of the ancient city of Kerma. The houses were built along difference street layouts which appear to have been determined by changes in the defensive arrangements. The ramparts were bordered by deep ditches which were often filled, either with rubbish or during enlargement of the built-up area. It is thus possible to find architectural features that represent the changes which took place over several centuries. Over time the yards with sinuous walls and the houses (originally of small dimensions) became more and more spacious. Food stores, often with circular silos of impressive size, seem to have been arranged according to the layout of the quarter which was originally irregular and later orthogonal. A potter's workshop has been studied in which a vault supported the sole of a kiln that can be dated to the end of the 3rd millenium. This technological achievement has not previously been described for such an ancient period.

The stratigraphic studies carried out in the area of the circular huts suggest that this quarter of the city was occupied for several centuries by inhabitants belonging to a class of relatively modest means, and it seems, therefore, that a special part of the city was reserved for this class.

During the clearance of a pit at the edge of the great temple (the western Deffufa), a narrow chamber, 1.95m by 1.30m, was revealed that was clearly designed for the preservation of valuable items. This hiding place is deeply inserted into the solid mass of mud brick, and its walls are faced with small sandstone slabs which are covered with a layer of dried mud.

### The Eastern Necropolis

A zone which corresponds to the end of Ancient

Kerma is being studied. This period saw the establishment of a more hierarchical class system, and the tombs are clearly differentiated; simpler tombs are grouped around large tumuli which make their first appearance at this time. The ceramics seem to indicate that the first permanent settlement was established at the end of the occupation of Ancient Kerma. During the funerary ceremonies, which may have been the occasion for a banquet, numerous bowls were upturned on the ground. Evidence for this comes from the eastern side of one superstructure, marked by a circle of small black stones 10m in diameter, where 18 bowls have been discovered placed upside-down. One of these, with a decoration of small dots in relief, is reminiscent of certain vessels from central Africa.

The tomb of a child about one year old has also been discovered. Although plundered (the head and arms are missing), this tomb has provided some unusual remains. The body was covered by a cattle skin and rested on another skin on a straw mat. The clothing, a red leather loincloth, was preserved. It was decorated with four diamonds of blue and white beads. The same pattern is found on the loincloths of the Nubian soldiers in the wooden 'model' from the tomb of Mesekhti at Assiout in Middle Egypt (ca. 2100 BC). A dagger was placed on the hip of the child, who also wore a necklace of black and white beads. A fan was found near the hands, in front of the face. Several ceramic bowls of very fine quality completed the material found in the tomb. On the west side of the circular pit were the remains of two lambs sacrificed during the funeral ceremony. Both wore collars of plaited leather thongs attached to a long cord, and one was remarkably decorated: on its head was a sort of cap with a disc of ostrich feathers attached by thongs. This was fitted with a perforated band of red leather which passed through the horns and finished on each side of the head with precious ornaments of blue beads forming a series of triangles with other black and white beads. The coat of the lamb was marked by several patches of red ochre, a practice which may very likely be associated with magical or religious rites.

The decoration of this animal recalls rock drawings at Tibesti and in the Libyan desert. The clay statuette of an animal found in the cemetery of Aniba would also indicate a widespread use of this type of ornamentation. It would be far-fetched to imagine that the disc of ostrich feathers discovered in this tomb is a symbolic solar disc, but it is difficult not to compare our discovery with the representations of the god Amun in the form of a ram.

## NINTH SEASON OF POLISH EXCAVATIONS AT KADERO, SUDAN

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The ninth season of excavations at Kadero, Khartoum Province, took place in December, 1982. The excavation was organized by the Polish Centre of Mediterranean Archaeology in Cairo and the Archaeological Museum in Poznan. Our aim was to excavate the central part of the Kadero mound where Neolithic burials were found during the seventh and eighth seasons. This part of the site is located between the northern and southern settlement middens and no remains of habitation had so far been recorded.

A trench, 56m long and 2-4m wide (a total of 142m<sup>2</sup>) was excavated across the central part of the mound, following the trench explored during the eighth season. Twenty five squares (Nos. B, 145-1669) of either 2×2 or 2×3 metres were excavated to a depth of 0.8m. As expected, only Neolithic inhumations were found.

In all, seven graves (Nos. 55-61) were found. They contained, as usual, badly preserved skeletons of adults and children which had been buried in a contracted position with heads pointing either west or east. The human remains are being studied by a physical anthropologist. Graves 55 and 61 contained potsherds, and there was an upper grindstone in Grave 57. Grave 60 contained numerous and high quality grave goods and is unique for the Neolithic of the central Sudan. Included were potsherds belonging to eight different vessels. They were decorated with a red ochre wash and either a black zig-zag on the rim or incised lines on the body. Other grave goods included two pieces of unworked chert; a truncation on chert (knife ?); two assemblages of lunates (arrow heads) made of chert with preserved remains of the substance used to mount them on shafts; a pear-shaped mace head of ground and polished porphyry; several small lumps of malachite; two bracelets made of pairs of curved hippopotamus tusks; a large straight hippopotamus tusk (axe head ?); and an axe head made of ground and polished rhyolite. In addition, the skull was decorated with a diadem composed of rows (strings ?) of perforated marine shells. We hope that charcoal

collected from the grave will yield a radiocarbon date for what we believe is the burial on an individual of exceptional social status in the Kadero Neolithic population.

Two other heavily eroded graves (62 and 63) were found during a thorough inspection of the surface of the central part of the mound to the east of the trench. Of the original furnishing, only several potsherds remained in association with the human remains in grave 63.

The position of the skeletons and the typology of the grave goods are similar to other Neolithic burials found at Kadero. In light of the results of the last three seasons, it seems that the central part of the Kadero mound does not contain settlement remains and was used as a cemetery by the Neolithic inhabitants. However, the distribution of graves found so far shows a clear tendency to concentrate around the limits of both settlement middens, thus leaving the very centre of the mound without any cultural remains. We hypothesize that this part of the mound functioned as a kraal for cattle herds during the wet season.

In order to obtain additional information on the geomorphology of the site, six test pits were excavated along a N-S axis to a depth of 0.5 to 2.5 metres.

The amount of material thus far obtained at Kadero has convinced us to publish the results of the first nine seasons. Therefore, we have arranged with the Sudan Antiquities Service to suspend field work for three years, and will resume excavations in 1985.

After the field season we made a reconnaissance trip to the Blue Nile Province, visiting localities on the western bank of the Blue Nile between Singa and Damazin as well as Jebel Moya and Roseires. We plan to begin a survey in the area (60×20km) in 1984, to chart the remains of human activities from Palaeolithic through Medieval times.

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**PRELIMINARY REPORT OF THE  
BUTANA ARCHAEOLOGICAL  
PROJECT:  
THE 1982/3 FIELD SEASON**

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The second season of the Butana Archaeological Project, jointly sponsored by the Department of Archaeology, University of Khartoum; the Institute for Applied Sciences, North Texas State University; and the Department of Anthropology, Southern Methodist University; and funded by the National Science Foundation, carried out a ten week field season in the Sudan from November through January of last winter. As with the first field season, this one carried out survey and excavations in two different areas of the Sudan; at the site of Shaqadud, some 50km east of the Nile at Wad ben Naga, in the western Butana, and around and east of the town of Khashm el Girba, on the Atbara River, some 50km west of Kassala.

Work this season continued that begun in 1981/82. At Shaqadud additional excavations were carried out in the midden area, as well as in and in front of the cave. The midden excavations finally reached bedrock at somewhat over 2.5m, while the cave sediments had a maximum depth of over 3.5m.

It is now clear that the midden consists of a thin layer of 3rd millennium BC cultural materials which cap a long Neolithic/Mesolithic sequence. The Neolithic (or Shaheinab) type ceramics are clustered densely between ca. 40cm and ca. 80cm depth, while the remaining close to 2m date to Early Khartoum times. Although radiocarbon dates are now becoming available, they are not final and so it is best to only report general trends. The Neolithic levels date to the middle of the 5th millennium BC (calibrated), while one date so far available from the Mesolithic indicates the middle of the 6th millennium BC. This date is from a half meter above the bedrock, so it is likely that the earliest Mesolithic occupation will date to the late 7th millennium BC.

Although the cultural materials have not been studied in detail, it is already clear that many of the vessels from the lower occupation, while having typical Early Khartoum motifs and decorative techniques, are not decorated on their bases. This would seem to be a significant difference with Early Khartoum-like sites reported from the Nile Valley. In addition, the larger sample of stone tools now available, reinforces the initial impression that the lithic assemblages from Shaqadud, both Mesolithic and Neolithic, differ in profound ways from assemblages of comparable periods on the Nile. Although tentative, these impressions indicate that the occupants of Shaqadud were related to, but were not actual Nilotic dwellers who moved into the desert during the rainy season. Rather, it seems likely that the midden represents the remains of people who were essentially steppe rather than riverine oriented.

The excavations in the cave and in front of it, provided large samples of the material remains datable to the whole of the 3rd millennium BC and, although not yet dated, the lower portion of the cave may date to the late 4th millennium BC. The cultural material, as noted in the last NA, is, so far, undescribed in detail for the Nile Valley and the basic ceramic typology is now being done. While it is too soon to discuss external relationships, some of the ceramic technology seems to hint at an eastern source, rather than one in the Nile Valley. The cave produced a significant faunal sample, including small domesticates, giraffe, and a host of small animals. The stone tools are extremely limited and poorly made, consisting mainly of lunates, borers, and rather informal retouched pieces. Raw material is mainly local quartz and quartzite, but a very few lunates are made on agate or Nile chert, indicating some contact with the Nile Valley. One of the more important aspects of the excavations was to confirm the presence of a deep sump hole in front of the cave which, apparently acted as a pond for much of the occupation of both the midden and the cave. It is clear from the survey – sites fall off rapidly within a kilometer of the cave – that the pond was the major attraction for peoples throughout the long period of occupation.

Field work in the Atbai, east of the Atbara, consisted mainly of additional survey (see Sadr, this issue), and some fairly large scale test excavations at a range of sites found during the 1981/82 field season. Excavations were planned to acquire significant artifact samples from the whole range of sites in the area, in order to establish a culture historic

sequence from this, until now, totally unknown area.

It now appears that the earliest post-Acheulean occupation still extant can be dated to ca. 13,000 to 15,000 BP and consists of a series of small camps of hunters who hunted mainly large animals – hippos and large buffalo. These people had a very unusual stone working tradition (at least for the Sudan), in that it was a very developed macroblade technology on which were produced very large geometrics and very small steep scrapers. We know of no comparable assemblages anywhere in northeastern Africa.

There are a few sites with in situ materials which suggest a “devolution” of the technology through time, with loss of the blade technology and adoption of a bipolar technique. However, there does not seem to be any direct connection between these late preceramic sites and the earliest ceramic site, with a date in the late 6th millennium BC (calibrated). This site, so far unique in the area, shares some ceramic traits with Early Khartoum but there are significant differences, as well. First, a large proportion of the sherds are undecorated and it is clear that the impressed and unburnished decorations were limited to a rather thick band around the upper vessel body. In addition, there is a “nobbed” ware unknown in Early Khartoum but reported by Fattovich from the Gash Delta in earlier issues of NA.

Following this site, there appears to be a rather widespread occupation of what we are calling the Saroba Phase. It is characterized by impressed, unburnished pottery associated with ripple ware, and a host of other wares, as well. These sites are found mainly on the steppe east of the Atbara and all have large accumulations of *pila* shell. It is unlikely that the shell is a result of human activity; its absence from later sites indicates that the Saroba Phase took place during a period of considerable relative wetness compared with later periods. So far, only a single <sup>14</sup>C date is available and it suggests that this phase can be dated to the 5th millennium BC.

The main period of intensive occupation of the Atbai, both along the Atbara and in the steppe, appears to be during the 4th millennium BC. At this time both areas have sites which exceed 10ha. in area which have cultural deposits over 1m deep. It appears that sizable villages were present but, to date, no permanent architecture has been located, only masses of daub. It is curious that from a large faunal sample, the vast majority of the forms are wild and the presence of domestic animals is still questionable.

This intensive occupation, referred to as the Butana Phase, shows not only an apparent increase in population and in the density of habitation, but also the widest range in ceramic technologies and decorative techniques. Without question, it was the high point of Atbai development. When it ended is uncertain, but it may have been replaced by a less elaborate life pattern during the 3rd millennium BC.

By the 2nd millennium BC, a new phase is apparent, the Jebel Mukram Phase. Domestic cattle first become common at this time and the sites contain indications of a much more seasonal occupation than had been true a century earlier. While there are still a large number of ceramic types and decorative patterns, the Jebel Mukram Phase tends to lack the large scraped vessels which so characterize the larger Butana Phase sites. Two radiocarbon dates, one from almost twenty years ago and the other from the Gash Delta, suggest that this may span the whole of the 2nd millennium BC (calibrated).

More recent sites are certainly present but they are more difficult to date, often lacking any depth to their cultural materials. Two good in situ sites were located, but time prevented large scale test excavations. It is apparent, however, that this later phase, the Korak, has connections with the Jebel Mukram, on the one hand, and sub-recent pottery manufacture on the other. Only additional work can clarify this but it is noticeable that only a single site with Pre-Axumite pottery was found and none at all with typical Meroitic sherds. Thus, it looks as if, during the 1st millennium BC and the 1st millennium AD, the Atbai lost its significance as a population center; at least one which produced considerable material remains. Perhaps the present pattern of nomadic life had developed sufficiently by then so that their remains are less visible than those of the earlier inhabitants. Again, only more work will tell.

## INTERIM REPORT ON LATE PRE-HISTORIC SETTLEMENT PATTERNS OF THE KHASHM EL GIRBA AREA, EAST CENTRAL SUDAN

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Over 100 sites have been recorded in systematic surveys to the north east of the modern town of Khashm el Girba, during the two seasons of the Butana Archaeological Project, funded by the National Science Foundation and jointly sponsored by the University of Khartoum and Southern Methodist University. Approximately half of the located sites have been tentatively classified into various phases. The sites are found in all environmental zones within the area. These include the older Atbara river floodplain; the karab, an area of badlands topography between the river valley; and the steppe, an open clay savanna stretching eastwards to the Gash River some 50km away (Fig. 1).

Besides the modern town dwellers, the area today is occupied by nomadic groups of the Beja Hadendowa, Beni Amer, and Rashaida. At a very general level, their seasonal movements involve steppe occupation following the rainy season, and river valley occupation during the drier parts of the year. In this area no permanent modern settlements are found to the east of the Atbara River until the area of the Gash River, close to the Ethiopian border.

The following brief report deals only with those sites dating after the 5th millenium BC. At this time, three tentative phases are recognised in this part of the sequence; the Butana, the Jebel Mokram, and the Korak. Radiocarbon dates indicate that the Butana dates to the 4th and perhaps late 3rd millenium BC; Jebel Mokram to at least the early 2nd millenium BC; while the Korak sites remain undated but are thought to fit at about the AD/BC interface, if not actually later. Although much work remains to be done on the cultural details of the settlement systems, some preliminary conclusions can be drawn regarding the relationships between the late prehistoric settlements and their immediate environments.

Several sources indicate a drying trend in the

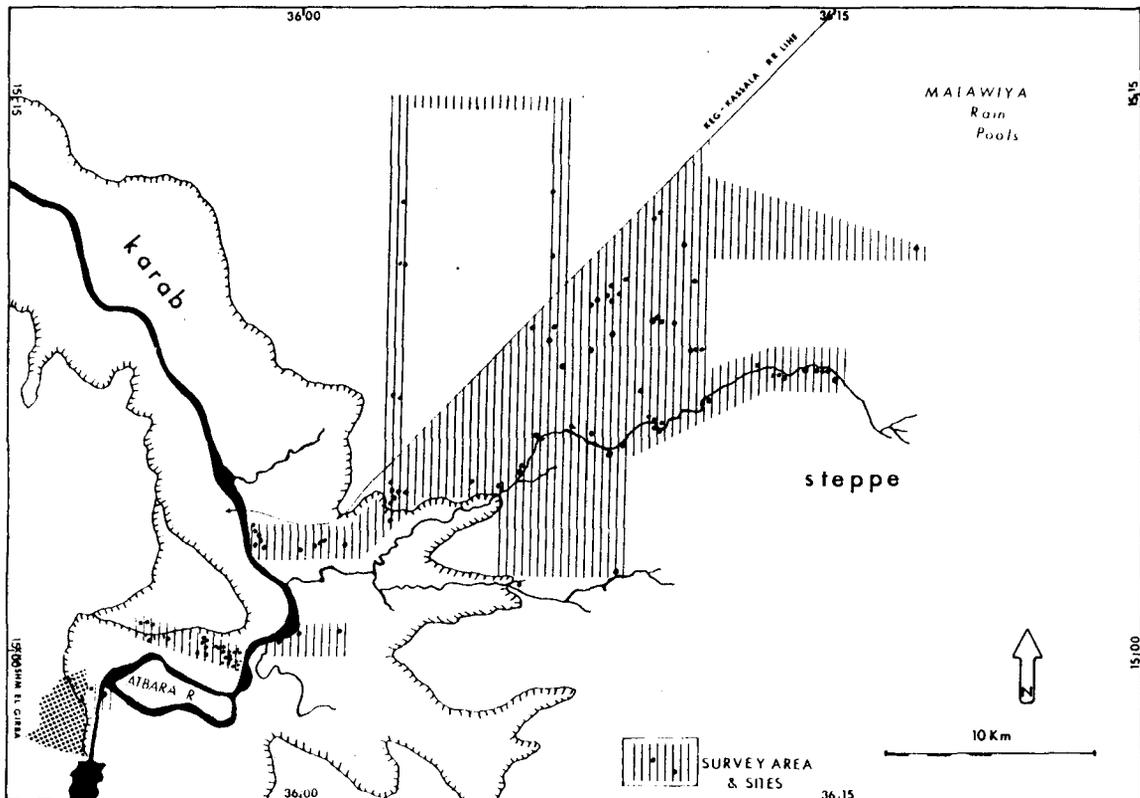


Fig. 1: KEG environments and survey area.

Sudan since the mid Holocene (cf. Williams and Anderson, *A Land Between Two Niles*). Indeed, in relation to the local geomorphology, the late prehistoric settlement patterns of the Khashm el Girba area indicate a severe degradation of the local ecology since the 1st millennium BC.

There is archaeological evidence for a change from sedentary villages during the Butana phase, to semi-permanent and ephemeral sites in the Jebel Mokram and Korak phases. Only the Korak phase sites are found in the karab, suggesting that the main erosional event in the Khashm el Girba area took place after the Butana phase, but before the Korak. Further, diachronic change can be seen in the emergence of territoriality, which is certainly present in modern settlements of the area, and may have been a factor in Korak phase settlements as well.

The Butana settlements range from 0.5ha to over 10ha in area, and from 50cm to 1.5cm depth of deposits. These show little trace of any artefactual change through time. Butana sites are found on the older Atbara floodplain, as well as in the central steppe.

Another series of sites (designated on Fig. 2 by the black triangles) differ only slightly from the

Butana sites in their ceramic assemblages, and may actually date to the Butana phase. These may be related to the larger sites as satellite camps, as they are always surface sites less than 2ha in area. Furthermore, they are often associated with features interpreted as remains of wells or pools, and are found only in the steppe.

Jebel Mokram phase sites range in size from 0.5ha to 3ha in area, but have no significant depth of deposit. They are often associated with well mounds and, to date, they are found up to the edge of the steppe but not in the Atbara valley or the karab. The greatest concentration of sites of this phase seems to occur outside the eastern boundary of the Khashm el Girba survey (R. Fattovich, pers. comm.).

Butana and Jebel Mokram sites are much closer to each other in terms of similarities in artefacts than either is to those of the Korak phase.

On the basis of differences in ceramic surface treatments, the Korak phase can be subdivided into two or more distinct groups (designated by the upright and inverted open triangles on Fig. 2). These, however, remain more similar to each other than to other phases in that they share chaff temper in the majority of the potsherds; i.e. sites of the earlier

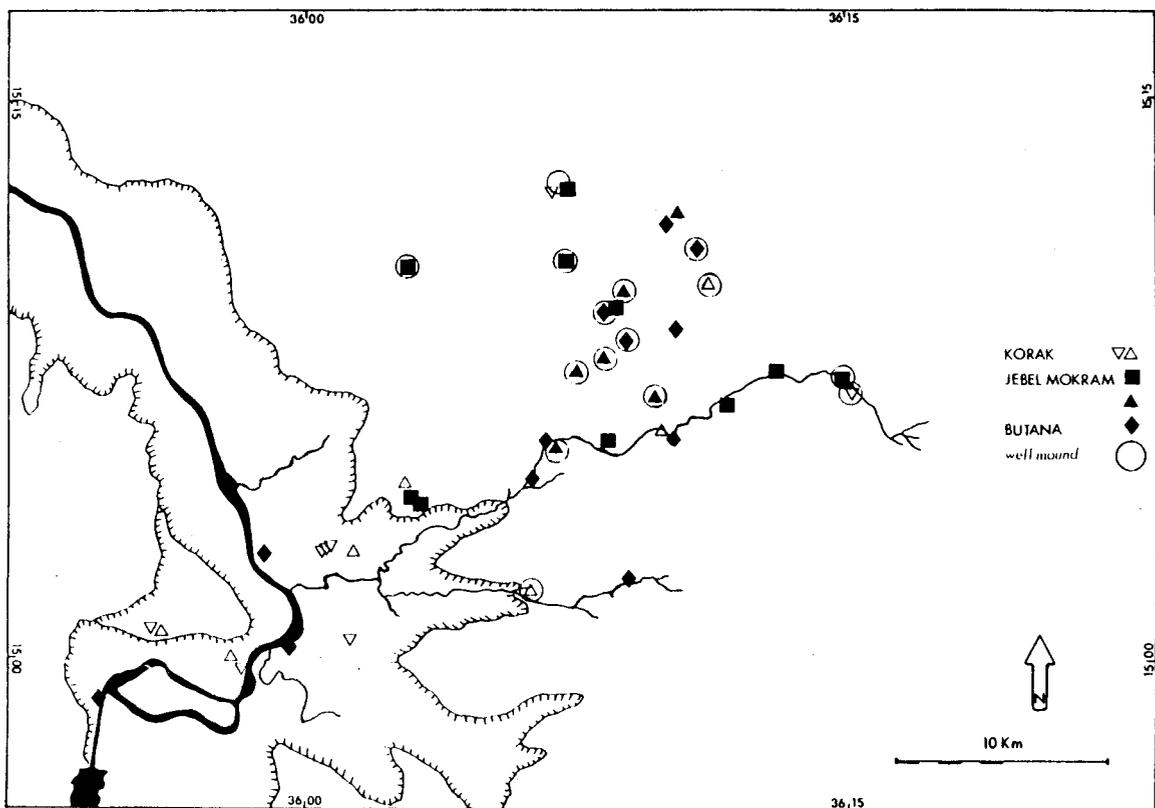


Fig. 2: Distribution of identified late prehistoric sites.

phases have only mineral tempered pottery. Korak sites range in size from 0.5ha to 5ha, but have no depth to their deposits. They are found in all the environmental zones of the area, from the older floodplain to the central steppe.

At present the fact that only Korak sites are found in the karab indicates that they were deposited after the erosion of the valley had already begun. Conversely, the absence of earlier sites in the karab must indicate that they were deposited on a more pristine steppe or river valley surface and were subsequently washed away as the badlands formed. It has been suggested that the erosional process of the karab may be the result of the denudation of the river valley from overgrazing by herds of domesticated animals (A. Gautier, pers. comm.).

The covariations of the changes in the settlement patterns and the local environment are evident. It appears that early in this sequence sedentary settlements were found in an environment wetter than at present. The wetter climate must have resulted in a larger and more permanent version of what are today the Malawiya rain pools (Fig. 1). Extended occupations of the steppe would be feasible under such conditions. In the Jebel Mokram phase a change to seasonal (or, at any rate, impermanent) settlements in the central steppe, and possibly a general population shift to the east (Gash drainage), supports the notion of a gradually worsening local environment. During the Korak phase the impermanent nature of the settlements remains as before, but the distribution of settlements appears to become restricted to the Atbara valley and adjacent steppe; very few Korak-like sites are found in the Gash area (R. Fattovich pers. comm.).

The possible emergence of territoriality during the Korak phase remains to be further investigated. For the last 100 years (in a manner of speaking the end of the archaeological sequence) a number of different ethnic groups have inhabited the Khashm el Girba area. They define themselves geographically by having territorial boundaries, and regulated extraterritorial interactions. Whether or not such a situation was at play during the Korak phase is not yet clear. However, in the light of some continuities in the material cultures of present populations and those of the Korak phase, the question of the emergence of small territories in late prehistoric occupations of the area deserves further investigation.

In conclusion, covariations can be seen in the change in human settlement strategies and the quality of the local environment in the late prehistory of

the Khashm el Girba area. However, the question remains as to what extent there is a causal relationship between the two. In order to answer this, it will be necessary to examine fully the possible social/cultural influences on the diachronic changes in settlement systems.

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## EXCAVATIONS AT SOBA FIFTH AND FINAL REPORT

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Excavations by the British Institute in Eastern Africa in the ancient city of Soba et-Taiyib under the joint direction of C.M. Daniels and D.A. Welsby, were terminated on 3 February, 1983 after a season of ten weeks. An area of 930m<sup>2</sup> was extensively excavated, in some areas down to subsoil. A further 107m<sup>2</sup> was cleared of topsoil and the structures identified but not fully excavated. Clearly at this stage it would be unwise to be too dogmatic about the results obtained from the excavations until all the site records have been studied in detail. However, I will attempt to offer a very tentative history of the structures excavated. For ease of reference, the two large brick buildings will be referred to as A (the church), and B (the building to its south east) (Fig. 1).

The earliest occupation on the site, evidence for which was found in the eastern part of building A, consisted of a number of shallow depressions cut into what appears to be subsoil. These features were filled with a mass of rubbish, including charcoal, bone and much pottery of a type similar to the earliest material found on the city site during previous seasons. Elsewhere the surface immediately predating building A (of hard brown earth notable for being remarkably level over much of the site), had a large number of post holes cut into it, although no plan of any recognisable structure was noted. No finds were associated with these features.

Only slight traces of the first phase of building A were found (Fig. 1). The foundations of substantial red brick walls (1 & 2) had cut through the depressions noted above, but were themselves cut by the walls of the phase II building. The construction trenches of some of the others walls of the phase II

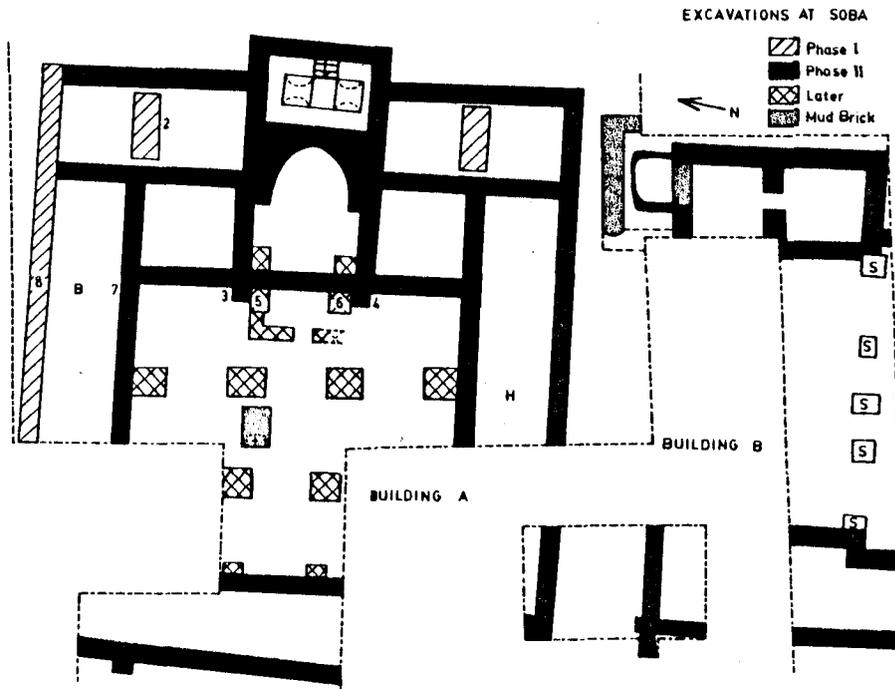


Fig.1: Buildings A and B; Soba, 1983 excavations.

building cut through lime plaster deposits, presumably from the walls of the earlier building which had been totally removed and later replaced by phase II walls on virtually the same lines. In room B the outer wall (8), was contemporary with the earliest floor in the room, on lime plaster. This floor was cut by the construction trench for a phase II wall (7), on the south west side of the room. Wall 8 provides the only evidence for the reuse of phase I wall in the phase II structure, though it could well have happened elsewhere. Another plaster floor in room H was cut by the construction trench for the outer wall of the building.

The phase I foundation (2) was sealed by a mud floor which was also cut by the construction trenches of the phase II building. This floor was presumably associated with the phase I outer walls.

The Phase II building seems to have been constructed at one period in time. Most of the walls of this building, which was clearly a church, were built of bricks identical to those used in the earlier walls, although the method of construction varied considerably. Some of the foundations were formed by bricks set on edge (identical to the phase I foundations), whereas other walls had foundations of bricks laid on their sides and even on end. All the walls were approximately 74cm wide. The bricks, all fired, measured 48×24×6cm. The south west wall of building A, however, was built of bricks 24cm square, together with rectangular bricks

24×14cm. This building was similar in size and plan to the cathedral at Faras although it differs in detail.

The central nave terminated at the north east end in a semicircular apse. Behind the apse was a square room, projecting beyond the north east wall of the building, which contained a brick built crypt with two barrel vaulted bays covering rectangular tombs. In one of these there was an articulated, though partly disturbed, skeleton, possibly of a founding father of the church. Further burials in simple graves, some of which were surrounded by pavements of red brick fragments, lay outside the north east wall. Flanking the nave were two aisles, separated from the central area by pier bases, only two of which were found. Beyond these aisles were two further rooms again possibly aisles. However, as they were separated from the inner aisles by a continuous wall foundation, they may have formed totally independent rooms. The absence of any surviving walls makes it impossible to be certain of the superstructure of the building in this area. The building could either be a five aisled church or a three aisled structure with two long rooms beyond. The nave was entered from a narthex running across most of the width of the building. The main entrance, which did not lie on the central axis, presumably lay at the south angle. On each side of the apse there were two further rooms.

The apse and the nave at this period were pre-

sumably floored in concrete set on about 20cm of redeposited subsoil. Contemporary with this floor there was a partition across the nave, presumably a *haikal* screen, indicated by a number of post holes. When the concrete floor was replaced by another, similar, one the timber screen was superceded by one of red brick fragments. Similar walls subdivided the north eastern ends of the two inner aisles, which were floored partly with lime plaster and partly with compacted sand. Contemporary with these floors, a mud brick pulpit was on the north west side of the nave. The concrete floor of the nave extended into the narthex where there may have been shallow steps. In this room the concrete was laid on large red bricks, 45cm square. Contemporary with this concrete floor in the apse, a number of post holes and a sill beam defined a rectangular area which was presumably the site of the altar. Robbing of the crypt had removed virtually all traces of the floor of this and subsequent periods. The two pier bases (5 & 6) replaced the earlier bases (3 & 4) at this time.

Subsequently the nave and the inner aisles were extensively rebuilt. Large pier bases were constructed between the nave and the inner aisles, and also against the inside of the inner aisle walls, presumably necessitating a total rebuilding of the roof in this area. In the nave and apse, a fine stone floor was laid above the concrete floor, obliterating the brick *haikal* screen which was replaced by another of timber. The other partition walls in the inner aisles were also covered by new floors of compacted sand. The stone floor in the nave only extended up to the pulpit, being demarcated by red bricks set on edge. The rest of the nave, like the aisles, were floored in sand. In the narthex no similar floors survived. With the widening of the stone floor in the nave by ca. 1.5m, a new mud brick pulpit was erected on the site of the earlier pulpit. This period seems to represent the church at its most elaborate.

Little correlation between the nave, apse and the inner aisles on the one hand, and the other rooms in the building was noted. The robber trenches had removed all the direct stratigraphical relationships. There was no evidence of further occupation in the nave and apse postdating the stone floor, even in those areas which were undisturbed by the robbers. The building clearly went through a period of disuse, thick layers of sandy mortar from its walls forming on the floors. Reoccupation appears to have been of a domestic nature; extensive ashy deposits containing much pottery were found.

The building was presumably standing above ground level when it was robbed. Lime plaster

lenses from the decay of the plaster on the outer walls extended to within 20cm of the present ground surface, and the robber trenches were cut down through these. The robbing was extensive. Virtually all the walls were totally robbed out although much of the stone floor was left in situ. Such systematic robbing suggests that it was one operation. The robbing of the crypt may have occurred at an earlier date. Before it again filled with rubble, as many as ten partly articulated skeletons were thrown into it. Their condition suggests that the bodies were in an advanced stage of decomposition when they were deposited.

Only a small part of building B lay within the excavated area. It was again a substantial structure, built throughout of burnt bricks identical in size to those found only in the south west wall of building A. Little of the plan was revealed (Fig. 1), but it is possible that the main axis of the building lay at 90° to that of building A. The use of large blocks of dressed stone as pier bases is noteworthy. Between two of these bases was a large stone block which had been reused upside down. On one side was a relief, possibly of Napatan age. Bonded into the north west wall was a rectangular sunken room built of red brick fragments. This was not totally excavated, but if further work indicates that it is a tomb this may suggest that building B was also a church. This structure was demolished before the rest of the building; plaster lenses fallen from the still standing walls of the main building overlay its denuded remains. These lenses, together with those from building A, were cut by the construction trench for a mud brick wall. Little of this building was excavated, though it clearly had a relatively short life, its walls being covered by further lenses of decayed plaster from the south east wall of building A.

Building B had again been almost totally robbed out. Not only its walls, but most of its first period floors (which were of red brick) had been removed. Hence little can be said of its later history, although it would seem to have been standing at the same time as building A. Towards the north west angle of the building one of its red brick floors had a number of pits about 1m deep dug through it. In two of these, and scattered about in the rubble above, were numerous fragments of a stone statue of a sphinx or lion again, like the relief, possibly dating to the Napatan.

It is hoped that a further season of work in the winter of 1983/84 will allow the excavation of building B to be completed together with excavation of the mud brick domestic buildings that appear to

overlie it in part. Also a little work is required in building A to complete its plan and to excavate the possible tomb which abuts onto its north east wall.

## LOWER ZAÏRE

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During 1981 and 1982 the author conducted his M.A. research at the Musée Royal de l'Afrique Centrale on the 1950-1952 archaeological mission of Maurice Bequaert in Lower Zaïre. Analysis was restricted to the ceramic assemblages and the metal artefacts from Bequaert's 15 excavations, and primarily to the four sites which, on the basis of stratigraphy and samples, were thought to provide the best data for this virtually unknown area. The four sites, all located to the north of the Zaïre River are: Misenga, Mantsetsi, Kindu and Sumbi.

For Misenga we were able to redefine Group II which is associated chronologically with the Kongo Kingdom (16th to 18th centuries on the basis of radiocarbon dates). This industry is now subdivided into a Misenga and a Mbafulu phase, and the majority of the sites fall within the latter. Copper smelting is associated with the former. While the ceramic ware has a distinctive morphology, it is distinguished primarily by its decoration which is based on peripheral bands of incised and/or impressed geometrical units that cover the upper part of the body. We were also able to define strict laws governing pottery making.

Mantsetsi, Kindu and Sumbi are hill-top sites between Tshela and Luozi. They are part of a six-site phase (the other three being surface finds). Although we grouped these initially with the Kay Ladio and Kibula sites on the southern bank of the Zaïre River under the generic term "Groupe Kay Ladio" (Clist 1982), subsequent detailed analysis of surface finds has enabled us to define a Mantsetsi phase. This phase is characterized by flat-bottomed pots with criss-cross units on the upper part of the body. This type of ware is associated with iron technology (iron slag and putative iron furnaces), ground stone axes and perhaps lithic artefacts, although the latter could come from the lower levels which contain post-Acheulian assemblages.

This phase can be grouped with the Kay Ladio

and Kibula surface scatters, which form a Kay Ladio phase, into an archaic Iron Age industry of Lower Zaïre defined by its iron technology, ground stone axes and identical decoration structure, motifs and vessel morphology.

This archaic Iron Age industry can be related to the Group IV industry of the area and to the lower level assemblage of Gombe Point, dated respectively to the 3rd-1st centuries BC and the 4th century AD.

Future fieldwork should answer a few of the questions raised by this work and revise the now obsolete typology for ceramic groups of Lower Zaïre published by G. Mortelmans in 1962.

### References

Clist, B.

- 1982 Etude archéologique du matériel de la mission Maurits Bequaert de 1950-1952 au Bas-Zaïre. Mémoire de Licence, Université Libre de Bruxelles.

## ARTEFACTS FROM ONGOLIBA, EASTERN ZAÏRE

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During paleontological reconnaissance of the Lower Semliki Valley, Ituri Province, eastern Zaïre by members of a New York University team in August of 1982, a small number of surface artefacts were collected from a confined area southeast of the base of Ongoliba, an elevated tabular remnant of land surface rising approximately 25 metres above the otherwise extensively eroded Sinda-Mohari region. This small surface assemblage consists of artefacts in fresh, unabraded condition: a unifacial side chopper and hammerstone (or alternatively, flake core) on a chert pebble, an irregular polygonal flake core on a chunk of chert, a quartzite handaxe (or trihedral pick) of subtriangular planform, several chert denticulate, knife and scraper forms (one on a Kombewa flake or éclat Janus), and two pieces of chert débitage. The artefacts were an occurrence of geologic 'float'; although found on the surface of Kaiso and/or Katanda Formation fluviolacustrine clayey and marly sands, it seems unlikely that they

originate from these sediments. Red colluvium and a boulder conglomerate characteristic of, and unique to, the regionally defined Middle Pleistocene Lubilia Cliffs Formation are present at Ongoliba; the former was found adhering to certain of the artefacts. In general, these pieces share affinities with central African final Acheulian/Sangoan industries. Large-scale excavations are planned for the summer and fall of 1983 to investigate this and other occurrences in the Lower and Upper Semliki Valley, as part of a project co-ordinated by Dr. N.T. Boaz of New York University and Prof. J. de Heinzelin of the Rijksuniversiteit Gent, Belgium.

### ZAMBIA NATIONAL MONUMENTS COMMISSION: ARCHAEOLOGICAL RESEARCH ACTIVITIES IN 1982

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Commission

In August 1982 the National Monuments Commission and School Archaeological Clubs in Livingstone carried out rescue excavations at the Dam-bwa Early Iron Age site which was in danger of being destroyed by Livingstone District Council refuse dumping. This site was to be developed as a training school in basic excavation methods for students and the public. The aim of the excavation was to recover sufficient evidence for reconstruction of the economy and settlement patterns of the site which was not possible from limited excavations in the 1960s. It was hoped that settlement patterns, community activities, and life patterns of the early Early Iron Age inhabitants would be revealed. This project was the main activity of the Livingstone School Archaeological Clubs during the year, its members being employed to carry out the digging.

The rescue will be continued this year.

In September 1982, I also carried out rescue survey work at Chishimba Falls Lukulu North area in Kasama District with the help of funds from the Department of Agriculture there. The aim was to rescue archaeological sites in an area which was being demarcated and cleared for farm plots. During the survey, numerous find spots and three proper sites were discovered. One of the latter was tested by excavating two 2x2m squares. Preliminary observations of the pottery collected show that the area was occupied by Later Iron Age people of the Luangwa Pottery Tradition.

In 1982, radiocarbon dates were obtained from Kalongola Iron Age site, Senanga, Western Province, which was excavated by N.M. Katanekwa. As yet, no permanent laboratory reference numbers have been received for dates 4-10. For these, citing of the reference number is sufficient for correspondence until permanent numbers are received.

These sites seem to form two clusters of dates, one averaged around AD 485 and the other around AD 706, suggesting a two phase Early Iron Age occupation of the site. Viewed as a series, the dates indicate continuous occupation of the site from as early as AD 445 to AD 810. The two phase cluster is supported by stratigraphic evidence. These dates support the postulation made last year that Upper Zambezi was inhabited by two cultural groups at around AD 500; one group from 30km south of Sioma due north and northwest covering the rest of Zambia, the other one south of this area, mainly confining itself to the Zambezi river valley, encompassing a small portion of southern and eastern Zambia. These dates further confirm the antiquity of Iron Age settlement in various parts of Zambia. Preliminary analysis of pottery seems to link some traits of these early settlers at Kalongola with those still prevalent in the area today. Similar pottery was also excavated at the site of Senanga rest house.

Reference No.	Unit	Yrs. BP $t_{1/2} = 5568$	Yrs. ad/bc
(1) Pta-3250	E170/175/III	1140 ± 50	ad 810
(2) Pta-3251	P30/35/IIId	1310 ± 50	ad 640
(3) Pta-3249	Kal/west	1470 ± 50	ad 480
(4) 9429/1	Kal/1/H10-15/II	1170 ± 65	ad 780
(5) 9429/2	Kal/2/H10-15/II	1280 ± 60	ad 670
(6) 9429/3	Kal/3/H10-15/II	1305 ± 40	ad 645
(7) 9429/4	Kal/4/H10-15/IV	980 ± 90	ad 970
(8) 9429/6	Kal/west	1420 ± 65	ad 530
(9) 9429/7	Kal/7/K40-45/II	1260 ± 50	ad 690
(10) 9429/8	Kal/8/PO-5/II	1505 ± 85	ad 445

**ANCIENT FIELDS:  
FURTHER WORK ON INYANGA  
TERRACING (ZIMBABWE)  
AND ENGARUKA IRRIGATION  
(TANZANIA)**

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Despite the recent growth of archaeological interest in the history of African agriculture and crop domestication, the identification and study of the actual fields has received less attention. Part of the reason for this neglect has been the scholarly reaction against an earlier generation of romantic and antiquarian interpretations which saw examples of indigenous irrigation systems and hillside terracing, existing and abandoned, real and imaginary alike, as relics of 'intensive' agriculture belonging to 'ancient civilizations' ('megalithic', 'Azanian' etc.) diffused along the highland spine of eastern Africa. A second reason is the rarity of genuine and specific signs of old cultivation on the landscape: this in itself may seem strange, for most of the surface of Africa, outside the deserts, must have borne crops on one or more occasions in the past. The explanation for this scarcity of recognisable old fields must lie in a combination of factors – the nature of the soils, the techniques of hoe cultivation and the systems of land-use (and indeed land-holding). Wherever therefore ancient fields are discernible, they are of especial value for African agricultural history; and their study becomes more profitable if undertaken comparatively, using examples of present practices alongside strictly archaeological ones. It may be objected that this approach is skewed, seeing that old fields survive for study only in unusual situations, such as steep and often remote hill districts where terracing was necessitated to clear the surface of stones and prevent the wash of soil, or dry places blessed by a river descending from wetter highlands off which irrigation channels could be constructed. Thus, in employing such evidence for reconstructing African agricultural history, we are in effect generalising from the atypical, and this basic methodological problem must be kept in mind. The force of the objection is reduced however if we envisage examples of irrigation and hillside terracing, no longer as relics of ancient 'intensive' agricultural systems, but rather as particular local *specialisations* within the vast range of

African agricultural practices. It is arguable in fact that African agricultural systems, in their almost infinite variety, are always specialised, the details of each being dependent on a subtle combination of cultural and environmental factors.

Late in 1982 the opportunity was provided – with funds from the British Academy, the Society of Antiquaries and the British Institute in Eastern Africa – to examine the extensive terracing of Inyanga in eastern Zimbabwe (a region new to me, but previously described and discussed by, in particular, Roger Summers – *Inyanga*, 1958), and also to undertake further work on the abandoned irrigation system at the foot of the rift escarpment at Engaruka in northern Tanzania (where I had last worked in 1972: see *Azania* XIII). For comparison, a brief visit was included to the existing irrigation of Endo (northern Marakwet) in Kenya, similarly at the foot of the rift escarpment, which I last visited in 1962.<sup>1</sup> It is hoped in the coming years to extend this comparative survey of both terracing and irrigation to other regions. Those of Ethiopia and the Sudan Republic require closer examination. Other examples of terracing, if not of irrigation too, exist further west across the African middle belt, and also in the highlands of Rwanda, Burundi and adjacent countries above the western rift valley. It is worth pointing out here that terracing and irrigation do not necessarily go together, and also that terracing need not imply the building of dry-stone revetments, although terraces held by earth and trash banks without stone rarely survive archaeologically. Such misconceptions are common in the literature.<sup>2</sup>

**Inyanga**

The stone terracing of Inyanga is most extensive and spectacular in what Summers called the 'lowlands'. These are themselves hilly but lie generally below 1500m: in parts the whole prospect has been terraced. In the central and southern 'uplands' of Inyanga district terraces are less frequent and prominent, but are by no means absent up to 1800m. A little terracing is practised nowadays in the 'lowlands', by reusing or modifying the old walls; but most of it has long been abandoned and must date earlier than the 19th century, being in places covered by woodland. In some instances an association can be demonstrated between abandoned terraces and occupation features of Summers' 'ruin cultures' of the last millenium – both hilltop settlements, sometimes fortified, and the strange homestead complexes called 'pit-structures'. Summers also argued that a small pro-

portion of the terraces belonged to the much earlier Ziwa 2 culture (early-mid Iron Age, a thousand years ago roughly), again on grounds of association with occupation sites as well as the evolution of terrace walling. While I remain unconvinced by this evidence, there is no reason to insist that the terracing tradition may not stretch back to the earlier part of the Iron Age, since farmers who lived in the district then are likely to have had to contend with the same problems of stone slopes with loose soils. Whatever the eventual answer to this question of the dating span of the terraced fields, it does appear that its enormous extent is not the result of intensive farming techniques at some particular time, but rather of a fairly typical extensive agricultural regime, doubtless based on sorghum and other crops, over numerous generations. Farmers would have preferred to clear – and terrace – new fields than to rework too frequently the old ones whose soil quickly became exhausted if not eroded. Thus the whole landscape came to bear the signs of generations of agricultural effort.

Inyanga receives a fair rainfall (in the southern summer), so that irrigation is unnecessary for the main cultivation. There are other, more definite, signs that in general the terraces were not irrigated artificially. For one thing they are not levelled perfectly enough or laid out sufficiently neatly in grids for such a purpose. In fact on close examination the individual walls may be discontinuous, comprehensive though their coverage of whole hillsides may be. The terracing of knolls to their very summits, and of escarpments to well above spring levels or stream courses from which water could be channelled, confirm that the purpose was not irrigation but soil conservation (and indeed stone disposal through neat revetting). It is true that on some hills one sees stone sided channels running through the terrace flights. But these were doubtless storm drains, for they do not derive from reliable water sources and they descend too steeply, with the terraces tending to dip towards them.

These observations notwithstanding, it would be unwise to take too categorical an anti-irrigation line here. At the informal level terracing, by its very nature, probably helps moisture retention in the soil. It is possible too that the water which was carried off the steep slopes in the drains was sometimes used to irrigate fields (or raised beds?) in the valleys. Nowadays moreover, some farmers extend their cultivation into the dry season by improvising small furrows from convenient streams to water enclosed gardens which are sometimes terraced. This

practice may well have a long history, as may another one observable in the damp valleys of the Inyanga 'uplands'. This is the raising of small beds for the dry season cultivation of tsenza (*Plectranthus esculentus*), the Livingstone, or kaffir, potatoe, a perennial whose root resembles somewhat a cluster of parsnips. While it is native to the *Brachystegia* woodlands of the 'lowlands', its cultivation, oddly, is concentrated in the open and cooler 'upland' valleys. Now, on the sides of some of these valleys the lines of long contour furrows are visible, some of which fed valley bottom field systems, perhaps for this same crop.

### Engaruka

The primary purpose of revisiting Engaruka was to obtain more detailed measurements and levels of selected field areas and to examine more closely the form and descent of the furrows. The latter, arteries and branches alike, are stone sided but not stone bottomed, and since the soil is quite loose and porous, a fair angle of descent was necessary. In place on the escarpment the artery furrows descend as steeply as 1:15, but more normal slopes are between 1:25 and 1:60. The angle is commonly reduced in the sub-furrows, laid at right angles along the contour, which served groups of stone divided cultivation plots. Among these fields suggestions of realignments of the divisions and sub-furrows are now recognised in restricted areas. Moreover, the strange rectangular revetted cairns which stand out in part of the fields are now better understood by the recognition of incipient examples in the corners of individual plots. They accumulated gradually and were clearly devices for catering with excess stones exposed on the surface through hoeing and soil loss.

The problems of hydrological decline on the Engaruka escarpment – based on the observation that some of the artery furrows derived from gorges whose beds are now dry or unreliable – remains unresolved. However, the exceptionally heavy short rains in November-December this year did enable us to assess better the potential of the one permanent, two seasonal, and several occasional rivers and absolutely dry gorges. Ironically, this rain reduced mobility and thus thwarted the intention of examining the forested catchment in the Crater Highlands. It is hoped to pursue this next year. In this survey work I am indebted to Paul Manega, a geologist with the Tanzanian Antiquities Department, for his assistance and comments.

At the suggestion of the British Institute, the Assistant Director, Dr. Peter Robertshaw, joined this

year's expedition to Engaruka so that more excavation could be undertaken on occupation sites and thus resolve the dating issue. My view has been that the remains at Engaruka date to the middle centuries of the present millenium, as indicated on several grounds including the bulk of the radiocarbon results from Sassoon's excavations in the 1960s. But two of those determinations fell much earlier, in the first millenium AD, leaving open the possibility of a preceding period of activity or of a very extended single one. Robertshaw's excavations in four of the terrace platforms in one of the village sites overlooking the fields immediately north of the Engaruka River's gorge (Sassoon's Hillside 3), succeeded in obtaining some further charcoal samples for radiocarbon analysis. They are with the laboratory now. The difficulties of excavating and distinguishing layers in loose, ashy and disturbed deposits of varying depths (exceeding two metres in some platforms) was well appreciated. The pottery and other finds generally corroborate those found by Sassoon, and have a late Iron Age look.

All the finds remain in Tanzania, and Dr. Robertshaw is planning to visit Dar es Salaam to study them more thoroughly alongside those from the excavations of the 1960s, kept at the Antiquities Department. We are deeply indebted to that Department for assistance in planning and executing this fieldwork.

Two stone circles/enclosures among the fields were also excavated. They yielded no charcoal and virtually no finds (in contrast to Sassoon's C1 excavated in 1964). Presumably they were stock pens.

#### Notes

<sup>1</sup> Recently Robert Soper, of the Institute of African Studies in Nairobi, undertook a thorough survey of Endo, resulting in a very useful map of the rivers and furrows.

<sup>2</sup> I have enlarged on some of these issues - but without the benefit of the 1982 fieldwork - in a paper on "Irrigation and terracing in Africa: intensification, specialisation or over-specialisation?" for the conference on *Intensive Prehistoric Agriculture Between the Tropics* at Canberra in 1981, being edited by Ian Farrington for publication in B.A.R. International Series.

## FAUNAL REMAINS FROM LATE IRON AGE SITES IN ZIMBABWE

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An analysis of faunal assemblages from excavations by Huffman (1977), and reanalysis of some other Zimbabwe phase assemblages has been completed as part of an M.A. thesis. The results confirm that cattle played an important role in the meat diet of all the inhabitants of Great Zimbabwe. A significant difference was found between the age structure of the cattle sample from high density living areas in the valley excavated by Huffman, and the elite Hill Complex sample analyzed by Brain (1974). Over 75% of the cattle from the Hill Complex were under 2½ years old at death, whereas no more than 40% of the animals in the other samples analyzed were under 2½ years.

The cattle sample from my excavation at Khami Hill Ruin outside Bulawayo had the same age structure as those from areas of high density housing at Great Zimbabwe, although the Khami Hill Ruin was considered to be a similar context to the elite Hill Complex at Great Zimbabwe.

In order to interpret these two age compositions, incisor eruption of 500 live Shona cattle, kept under subsistence conditions, was used to establish the age structure of a herd. Mortality rates based on calculations by Dahl and Hort (1976) were worked out for the Shona sample, and the calculated percentages of natural deaths expected for each age category were compared with the observed deaths reflected in the archaeological samples. This comparison showed that the 18-30 month group was subjected to the most slaughtering in both samples. The Great Zimbabwe Hill complex sample also showed heavy slaughtering in the 0-18 month age group. The other age categories in the archaeological samples were not significantly different from the age death distribution expected with natural mortality.

These results indicate that cattle were possibly exploited as meat to a greater extent that they have been in the recent past. Amongst the Shona, cattle are regarded as wealth, and animals are only slaughtered on special occasions.

The similarity between the age distributions ex-

pected from natural death, and the archaeological samples, also indicates that the cattle herds were kept close enough to living sites for natural die-off to be utilised (as it is today). This modifies the model for Zimbabwe sites proposed by Garlake (1978) of long distance transhumance of cattle between the Plateau and the Lowveld.

The high proportion of very young cattle from the Great Zimbabwe Hill complex indicates that the cattle wealth of the ruler was considerable, and probably exceeded that of the ruler of the later Khami state. The king may well have kept some cattle a long way from his capital to supplement his resources, and probably received many cattle as tribute.

### References

- Brain, C.K.  
1974 Human food remains from the Iron Age at Zimbabwe. *South African Journal of Science* 70:303-309.
- Dahl, G. and A. Hjort  
1976 *Having Herds: Pastoral Herd Growth and Household Economy*. Stockholm: University of Stockholm.
- Garlake, P.S.  
1978 Pastoralism and Zimbabwe. *Journal of African History* 19:479-493.
- Huffman, T.N.  
1977 Zimbabwe, southern Africa's first town. *Rhod. Prehist.* VII, XV:9-14.

## ZIMBABWE

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I am currently engaged in a project on the Later Stone Age of the Matopos in southwestern Zimbabwe. The main interest is subsistence, but a comprehensive description of all facets of the technology is attempted. A preliminary report has been published in the *South African Archaeological Bulletin* (1980, 35:19-24).

### Ecology

The Matopos comprises a mosaic of fairly small habitats, of which the kopje woodland is the most extensive. Possible annual strategies that consider adjacent regions to varying degrees have been pro-

posed.

### Site Distribution

LSA sites have been found only in rockshelters in the Matopos, and these include painted sites which lack any other cultural material. Of interest is the tendency for the more extensively occupied sites to be spaced. A study of patterning is expected to provide information on subsistence and group size, and an excavation programme has been developed around it.

### Rock art

Paintings were studied in the hope of finding further information on technology, economy and group sizes. The rock art appears to be essentially religious in inspiration; giraffe, kudu, tsessebe, impala and duiker were all important symbols. Most of the surviving paintings are estimated to be more than 5000 years old.

### Excavation

Relatively small trenches were excavated at seven sites, and we now have a nearly continuous sequence from about 13,000 BP to about 2000 BP. The present chronological scheme, which has the Pomongwe large scraper industry followed by the microlithic Matopan (Khami) industry, appears in many respects to be inadequate. Instead, we appear to have a single technology showing continuous small scale variation in style and frequency of a fairly small range of tools. Backed tools are very common in the mid-Holocene. Change in different tool types does not usually appear to be synchronous. There does appear, however, to be a period about 4500 BP when new types were introduced, and domestic animals and pottery first appear about 2150 BP. The changes in tools do not appear to correspond with any appreciable changes in faunal remains; these are dominated by small animals such as hyrax, klipspringer and lizards. There do appear to be some shifts in scheduling. Of interest is the indication of change in site usage, possibly reflecting social changes. Large sites date mainly to the early Holocene and after 4500 BP, while small sites are more frequent between about 6000 BP and 4500 BP.

In addition to the sites briefly referred to in the published report, Bambata Cave was excavated in 1980. This provided a date of  $2140 \pm 60$  BP (Pta 1777) associated with Bambata pottery and from just above sheep remains.

## NEW PUBLICATIONS

### West African Journal of Archaeology

The Department of Archaeology, University of Ibadan reports that they hope to publish volumes 9 and 10-11 in time for the Pan African Congress in Jos. The contents will be as follows.

#### Volume 9

- B.W. Andah: Introduction to perspectives on West Africa's past.
- B.W. Andah: The Quaternary of the Guinea region of West Africa: an assessment of the geomorphic evidence.
- B.W. Andah: The early palaeolithic in West Africa: the case of Asokrochena, coastal region of Accra, Ghana.
- B.W. Andah: The Later Stone Age and Neolithic of Upper Volta viewed in a West African context.
- F.N. Anozie: Early iron technology in Igboland: Llejja and Umundu.
- B.W. Andah: Iron Age beginnings in West Africa: reflections and suggestions.
- V.E. Chikwendu and A.C. Umeji: Local sources of raw materials for the Nigerian bronze/brass industry with emphasis on Igbo Ukwu.
- A.I. Okpoko: Settlement archaeology in the Anambra river valley: a short note.
- K. Effah-Gyamfi: Bono Manso archaeological research.
- K. Effah-Gyamfi: Some archaeological reflections on Akan.
- B.W. Andah and A.I. Okpoko: Oral traditions and West African culture history.

#### Volume 10-11

- B.W. Andah: Excavations at Sindou and Kawara.
- R. Soper and P. Darling: The walls of Oyo Ile.
- B.W. Andah and F.N. Anozie: Preliminary report on the prehistoric site of Afikpo (Nigeria).
- K. Effah-Gyamfi: Traditional pottery technology at Krobo, Takyman (Techiman) Ghana: an ethno-archaeological study.
- A.A. Derefaka: Cordage, fabric and basketry of the Tichitt Tradition.
- L.H. Robbins: The importance of fresh water fish in African prehistory – dietary evidence from the Lake Turkana basin, Kenya.
- S.W. Petters: New cave sites in Cross River State, Nigeria.
- T. Shaw: Radiocarbon dates in tropical Africa.
- P. Allsworth-Jones: The Middle Stone Age north of

the Jos Plateau, a preliminary report.

- B.W. Andah and J.O. Ajayi: The place of geomorphic features in the Quaternary of the Guinea region of West Africa with special reference to Ibadan environments.
- B.E. Basse-Duke: An experiment in decay at the experimental archaeological reserve, Adesina Oja, Ibadan Nigeria.
- K. Effah-Gyamfi: Clay smoking pipes and the dating of archaeological sites in Ghana: a reassessment.
- J.S. Handler: A Ghanaian pipe from a slave cemetery in Barbados, West Indies.
- B.W. Andah, A. Okoro and B. Tubosun: The Benue Project – a preliminary report.
- P.L. Shinnie and F. J. Kense: Excavations at Mole National Park.
- J. Anquandah: Excavation at the smith's quarter of Begho, Ghana: a preliminary report.
- C. Descamps: Quelques réflexions sur le Néolithique du Sénégal.
- R. Duru: Need for stricter adherence to conventional mapping practices in archaeological work.

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*Archéologie en Afrique* was published in 1981 as a special number of *Recherche Pédagogie et Culture*, Vol. IX(55), and is available from AUDECAM, 100 rue de l'Université, 75007 Paris. The contents include:

- J. Devisse: La recherche archéologique et sa contribution à l'histoire de l'Afrique.
- J.-P. Domenicchini: Problématiques passées et présentes de l'archéologie à Madagascar.
- M. Raimbault: Les recherches archéologiques au Mali: historique, bilan, problèmes et perspectives.
- S. Bernus: Archéologie et développement à propos d'une expérience nigérienne.
- B. Gado: La recherche archéologique et historique au Niger: bilan, perspectives en archéologie et en histoire précoloniale.
- A. Lebeuf: Recherches archéologiques dans les basses vallées du Chari et du Logone (Cameroun septentrional).
- J. Polet: Archéologie d'une région lagunaire: le pays éoithilé.
- B. Saison & J. Polet: Enceintes fortifiées de la Ségoulié.
- J.B. Kiéthega: L'exploitation traditionnelle de l'or sur la rive gauche de la Volta noire – région de Poura.
- C. Radimilahy: Archéologie de l'Androy.

- B. Saison: Azugi: archéologie et histoire en Adrar mauritanien.
- J.-P. Chrétien: Les âges du fer dans la région des grands lacs.
- A. Adande: Un exemple de recherche archéologique: enquête réalisée par les élèves de l'école publique de Bensekou.
- J.B. Kiéthega: La carte du fer en Haute-Volta.
- Y. Marchal: Une enquête de géographie fondamentalement utile pour les archéologues.
- D. Rasamuel: Pour une histoire du Voromahery.

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**Le Shati, Lac Pléistocène du Fezzan** is edited by N. Petit-Maire and published by the C.N.R.S. (15 quai Anatole France, 75700 Paris) for 98F. It is an interdisciplinary study of the geology, palaeoecology and archaeology of this 2000 km<sup>2</sup> lake and environs for the period from about 130,000 to 70,000 BP. It includes papers on the invertebrate faunas, palaeohydrology, geochronology, palaeobotany and archaeology.

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## BOOK REVIEW

*The Archaeology of Central Africa* by Francis Van Noten. Adakemische Druck und Verlagsanstalt. Graz. 1982. pp. 100, figs. 40, plates 32.

This book, advertised in 1976 in NA, is the first to attempt wide coverage of the archaeology of central Africa which is defined as Zaire and its immediate neighbours. It is edited by Van Noten and written in part by him and in part by colleagues from the museum in Tervuren.

The book is not a general synthesis of the archaeology of the area but is rather detailed reporting on the results of specific archaeological investigations. There are chapters on "Past and Present Environments" by Moeyersons and Roche, on "The Stone Age in the North and East" by Van Noten, "The Stone Age in the South and West" by Cahen, "From the Stone Age to the Iron Age" by Van Noten and de Maret, "The Iron Age in the North and East" by Van Noten, "The Iron Age in the West and South" by de Maret and finally on "Rock Art" by de Maret. All these chapters are short, the total text amounting to one hundred pages, though the thick paper, almost cardboard, on which the book is printed makes it appear more substantial than it is.

The chapters give short descriptions of the sites of the various periods with an emphasis on the artefacts found and this sometimes makes for rather dry reading, but it is valuable to have this material, some of it previously unpublished, made available in succinct and attractive form.

In some cases, more extensive treatment would have been an advantage but we must be grateful that the information on the archaeology of this important but under-studied part of Africa is now available.

The rather sharp division of the various studies into different geographical and ecological areas is obviously necessary with present limited knowledge and it is premature, as the editor says, to speak of cultural areas or to provide a real synthesis of human development. The study of central Africa is still at the stage where all that can be done is to investigate sites dating from pre-Acheulian to comparatively recent and to list the artefacts obtained from them. The rather macabre late burials of Rwanda royalty bring us almost to the present day. Comparison and the drawing of general conclusions about the past must wait on more extensive work based on the high quality pioneering work of Belgian scholars.

The illustrations are excellent, both photographs and drawings, but unfortunately are inadequately referenced in the text. For example, the cover has a very good, clear and interesting colour photograph of work on a burial which the flap describes as 'clearing of burial 172 at Sanga', but lack of an index, a serious deficiency, made it impossible for the reviewer to find where in the text this burial was described. The short list of corrigenda is confusingly placed after a number of advertisements of publications in African rock art.

P.L.Shinnie, University of Calgary

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## OTHER NEWSLETTERS

There are a number of newsletters which may be of interest to readers of NA and of which they may not be aware. We give a list of those we know of and will welcome information on others for future numbers.

### Physical Anthropology News

News of current research and publications in physical anthropology. Subscriptions (in US\$) are \$3.00 for individuals and \$2.00 for students within the U.S. and Canada and \$4.00 elsewhere. Informa-

tion can be obtained from PAN – Department of Anthropology, Queens College CUNY, 65-30 Kissena Blvd., Flushing NY 11367, USA.

#### **Society for Archaeological Sciences Newsletter**

Published quarterly by the SAS and contains information of current research and publications in those scientific disciplines allied with archaeology. The coverage is broad, but includes reports on such things as new radiometric dating techniques, new analytic methods and the like. Subscriptions (US\$) are \$7.50 for individuals and \$5.00 for students. For further information write: Office of the General Secretary – SAS, Radiocarbon Laboratory, Department of Anthropology, University of California, Riverside CA 92521, USA.

#### **Mesolithic Miscellany**

*Mesolithic Miscellany* is issued twice a year, in May and November, as an informal communication among individuals interested in the Mesolithic of Europe. The cost of a yearly subscription is US \$3.00. Subscriptions can be paid directly to the editor in US\$: T. Douglas Price, Department of Anthropology, University of Wisconsin, Madison WI 53706, USA. European subscribers may pay £2 to Dr. Clive Bonsall, Department of Archaeology, 16 George Square, University of Edinburgh, Edinburgh, Scotland.

Contributions to the newsletter are always welcomed with regard to any number of topics concerning the European Mesolithic. Major categories of the newsletter include recent publications with abstracts or tables of content, short research reports, book reviews, recent radiocarbon determinations, letters to the editor, statements for debate, requests for information, national synopses of research, and any thing else of relevance to the Mesolithic.

#### **Old World Archaeology Newsletter**

OWAN is published from the Department of Classics, Wesleyan University, Middletown, Connecticut 06457, USA and subscriptions are US\$3.50. It normally contains one or more research reports, notices and reports of conferences, announcements and reviews of publications, news of lecturers from overseas visiting North America, exhibitions, and reports on the organization of archaeological research in various countries. The emphasis is on Europe and the Mediterranean.

#### **Nouvelles de l'Archéologie**

Nouvelles de l'Archéologie is primarily concerned with current news of archaeological research

in France. However, each number contains at least one lengthy treatment of a single topic which is of general interest and *Nouvelles* is certainly of great interest to those working outside of Europe. It contains extensive listings of conferences, reviews of new publications and overviews of current research in various parts of the world.

*Nouvelles* is published four times a year. Subscriptions are 45F in France and 60F elsewhere. Individuals in countries where foreign exchange is difficult to obtain may write and request gratis subscriptions. For further information write: *Nouvelles de l'Archéologie*, Maison des Sciences de l'Homme, 54 Bd. Raspail, 75270 PARIS CEDEX 06, France.

#### **Zooarchaeological Research News**

This is a new publication devoted to North American zooarchaeological studies. It is not intended to be an outlet for publication but rather a means of communication for those interested in zooarchaeology. It will publish book reviews, research notes, notices of specimens needed or available, notes on conservation, storage, transport and preparation of materials, reports on conferences and announcements of forthcoming meetings. Subscriptions are CDN\$6.00 for 4 issues and should be sent to Tim Schowalter, 9712 84th Ave., Edmonton, Alberta, Canada, T6E 2E9.

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## **MEETINGS**

### **9th. Pan African Congress**

The Congress has been postponed. The new dates are 11-17 December 1983. The Congress will still be held at Jos, and we have received notice of the following schedule from the Organizing Secretary, Dr. Ekpo Eyo, Director-General, National Commission for Museums and Monuments, P.M.B. 12556, Lagos.

Participants should arrive on Sunday, 11th December. The Congress will open the following day and end on Sunday the 17th. Organized tours will begin on the 18th. Further information on accommodation, fees, transportation and excursion arrangements is promised but has not yet reached us.

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### **XIth Congrès Union International des Sciences Pré-historiques et Protohistoriques**

The Congress will meet in Southampton and London from 1 to 7 September 1986. Working ses-

sions will be held at the University of Southampton, and a major new exhibition will be opened at the British Museum during the Congress. It is expected that the registration fee will be in the region of £200. The following major themes, which will be based on pre-circulated papers, have been set:

- Cultural attitudes to animals including birds, fish and insects
- Archaeology and the very remote past
- Archaeological "objectivity" in interpretation
- Interactions between "central" and "peripheral" cultures
- Social and economic contexts of the adoptions of similar technological elements in different parts of the world.

The program is designed to allow additional specialist and regional symposia. We have provided Professor P.J. Ucko, the National Secretary, with the NA mailing list, so those of you who have not already received the first circular should do so shortly. For further information write to Professor Ucko at the Department of Archaeology, University of Southampton, SO9 5NH.

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