NYAME AKUMA

No.14 May 1979

Newsletter of the Society of Africanist Archaeologists in America.

Edited by P.L. Shinnie and issued from the Department of Archaeology, The University of Calgary, Calgary, Alberta, T2N 1N4, Canada. Typing and editorial assistance by Ama Owusua Shinnie.

There has been a further drop in subscriptions to Nyame Akuma only 91 of the 160 subscribing for 1978 had sent their subscription by 1st May 1979. A number of those known to be active in African archaeology are amongst the non-subscribers. This may be due to lack of interest or possibly just to failure to write the necessary cheque. I realise that for those outside North America an effort is required to get the necessary dollars even in those countries where there is easy availability of hard currency.

Dr. Green of Cardiff has agreed to act as agent for subscriptions from the United Kingdom and if subscribers care to send the sterling equivalent of $7 to him he will arrange for the transfer.

The editor has two 'bees in his bonnet' on which he invites comment - one is the increasing use of B.P. for radio-carbon dates. What he wonders is the real justification for this - other than an attempt to appear scientific. Most (all?) of us who were brought up on the traditional dating system immediately do a small sum to convert to the kind of years with which we are comfortable. It is not even as though the P were really the 'Present' and 1950 is receding into the past at an uncomfortably fast rate. If it is to make it clear that the date is a radio carbon one and not necessarily a real one the increasing use of the lower case style (b.c.; a.d.) seems to meet the case.

The second matter is the increasing tendency for authors to quote as evidence and give references to work which is not normally available. That is to say to unpublished theses, departmental seminar papers, reports to governments and other pieces of documentation which are either available only with extreme difficulty if at all, or have a restricted circulation. This phenomenon is particularly noticeable in writings concerning West Africa. It is not an easy matter to decide on but the use of such sources to argue a case make it almost impossible for readers to reach an opinion since much of the evidence is not available.

P.L. Shinnie.

Report on the Plenary Session, S.A.A.A.M. at Calgary.

A plenary session took place on April 21, 1979 and was attended by 30 members of the society. The session was chaired by Professor Peter Shinnie, who opened with a brief description of the proceedures he has followed in editing Nyame Akuma. There followed a discussion of three agenda items.

1. Steering Committee Membership.

The present Steering Committee is made up of a chairman, Peter Shinnie, a secretary-treasurer, Michael Bisson; and two at large members, John Bower and Maxine Kleindienst. All members expressed their willingness to serve a second two year term and a motion to re-appoint them was carried unanimously.

2. Future of Nyame Akuma .

Professor Shinnie reported that a suggestion had been made to him that Nyame Akuma be converted from its present Newsletter format to a formal journal. Reasons for this step included long delays in the publication of Kush, problems in the production of the West African Journal of Archaeology and the lack of a general journal covering exclusively African archaeology. There followed a lively discussion in which the assembly concluded that the Newsletter was an important vehicle of communication between scholars which should be retained. Arguments against creation of a journal included the lack of sufficient numbers of potential subscribers to make it economically viable, the danger that a new journal would undercut presently struggling African journals, and a general feeling that a new journal was not particularly necessary. A consensus was reached that the Newsletter format should be retained although Professor Shinnie agreed to look into the financial aspects of setting up a journal.

During this discussion a number of technical aspects of the production of Nyame Akuma were discussed. Up to now, all material submitted has been published (although some pieces have been edited by Prof. Shinnie). Because submission of relatively long articles threatens to increase production costs above our present income, it was recommended that news items should normally not exceed two single spaced typed pages in length. The assembly agreed that the Editor should retain discretion to accept longer pieces, but that in most cases the two page limit should be observed.

3. Venue for the 1981 Meetings.

Suggestions for the location of the 1981 SAAAM Meetings are now being taken. Professor J.D. Clark invited the society to meet

in Berkeley.

Finally, a unanimous resolution was passed thanking the staff and students of the Department of Archaeology, University of Calgary, for hosting the conference.

Michael S. Bisson
Secretary-Treasurer.

Nyame Akuma
Financial Report

This financial statement includes only those funds received by the Nyame Akuma account in Montreal as of April 16, 1979. Totals are expressed in Canadian dollars throughout, and the apparent discrepancy between the number of subscriptions and total income is the result of the conversion of a substantial number of subscriptions from American to Canadian currency. Income and expenditures are listed by publication year rather than the normal fiscal year and so subscriptions for issues 12 and 13 received after January 1, 1979 are included in the 1978 totals while all subscriptions for 14 and 15 are in the 1979 totals.

Income

Back Issues	
3 issues	$22.70
1978 (Numbers 12 and 13)	
93 subscriptions in U.S. $ ($652) x 1.11 conversion	455.50
2 subscriptions in other currency	18.65
Total 1978 Income	$1,197.87
1979 (Numbers 14 and 15)	
68 subscriptions in U.S. $ ($477) x 1.11 conversion	$529.47
39 subscriptions in Canadian dollars	273.00
Total 1979 Income to date	$802.47
Advance Payments (1980) 2 Canadian, 1 U.S.	$22.01

Expenditures

1978

Production expenses	
Printing	$557.13
Paper	11.00
Envelopes	30.00
Postage	281.75
Xeroxing	84.85
Phone	16.00
Clerical (McGill)	24.00
Equipment	
Filing Cabinet	140.95
Bank Charges	6.19
Total 1978 Expenses	$1,151.87

Summary

Income	
Back Issues	$22.70
1978 (12 & 13)	1,197.87
1979 (14 & 15)	802.47
Advance Payments	22.01
Total Income	$2,045.05

Expenses (1978 only)	
Production (12 and 13)	$1,004.73
Equipment	140.95
Bank Charges	6.19
Total Expenses	$1,151.87

Total Income (carried over from previous page)	$2,045.05
Less Expenses	1,151.87
BALANCE	$ 893.18

Treasurer's Statement

Procedures

As 1978 was the first year in which a subscription fee for Nyame Akuma was levied, a description of the way in which these funds are handled is in order. Subscriptions are deposited in a Current Account in the name of Nyame Akuma at branch 711 of the Canadian Imperial Bank of Commerce, 2055 Peel Street, Montreal. In order to minimize bank handling charges and clerical costs, checks are held until 25 to 30 accumulate and these are then deposited as a group. Approximately 60% of the checks have been in American dollars and the present favorable exchange rate on American currency has increased our income from these sources by about 10%. The present rise in the value of the Canadian dollar to the American dollar may bring this situation to an end. A single mailing of receipts is made to subscribers at the end of the calendar year.

Production costs for Nyame Akuma are initially carried by the Department of Archaeology, University of Calgary. The Department in turn bills the Nyame Akuma account.

Discussion

Complete figures are only available for 1978. Subscriptions for 1979 are still coming in and the production costs of the 1979 issues are not yet available. In 1978 the Newsletter operated with a small surplus, with total revenues ($1,197.87) exceeding expenses ($1,151.87) by $46. When the onetime expense of purchasing a filing cabinet is subtracted from expenses, actual production costs of the 1978 issues were $186.95 less than income. It should be noted, however, that $76.42 of our 1978 income was gain from favorable U.S.-Canadian dollar exchange rates and without this windfall 1978 would have been a deficit year.

At this point, 1979 subscriptions seem to be arriving more slowly than 1978. In spite of this over 20 entirely new members have subscribed in 1979. Our main problem seems to be with existing members either dropping their subscriptions or paying very late. Our present balance insures that Nyame Akuma No. 14 can be printed and mailed. We may be unable to produce No. 15 unless a minimum of 30 more subscriptions arrive by December. If the 1978 pattern of late payments repeats itself then we will reach this goal, but even with the 1978 surplus, we will again be operating very near the break-even point.

It is impossible to anticipate precisely how much inflation will affect our future operating costs. Postage rates are certain to increase, as are printing and stationery charges. Nevertheless, as long as we continue to have a surplus, there would seem to be no justification for an increase

in subscription rates. It may, however, be necessary to control production costs by limiting the length of Nyame Akuma.

Michael S. Bisson
McGill University
Treasurer, S.A.A.AM.

NEWS ITEMS

ALGERIA

The following report has been received from C.R.A.P.E.
(Centre de Recherches Anthropologiques Préhistoriques et Ethnographiques)

1) - Depuis 1974 le C.R.A.P.E. poursuit les fouilles du site préhistorique de Ti-n-Hanakaten (Tassili-n-'Ajjer), vaste abri, aux parois couvertes de peintures, qui renferme un dépot archéologique de plus de 5m d'épaisseur. Les peintures appartennent aux diverses phases reconnues dans la région par H. LHOTE avec prédominance des peintures récentes. Les formations archéologiques supérieures, néolithiques, sont séparées d'un niveau atérien par une formation sableuse stérile. Ce niveau se prolonge devant l'abri mettant en relation ce milieu clos avec les formations extérieures où 4 niveaux morphoclimatiques ont été reconnus dont 3 renfermaient du matériel préhistorique (Atérien pour l'un, Paléolithique inférieur pour les deux autres).

Après avoir établi la stratigraphie du dépot archéologique, les fouilles se proposent de rechercher les structures d'occupation du sol. Les premières campagnes menées dans ce sens ont montré que les anomalies perçues dans la sédimentation des dépots supérieurs corespendaient à des fosses creusées au dépend de la couche supérieure. Certaines, scellées par des lentilles cendreuses avec foyer en place et pierres taillées sont très anciennes, d'autres sont actuelles. Par ce biais la séquence d'occupation remonte jusqu'à nos jours.

Le matériel archéologique taillé dans des microdiorites et quartz est de qualité médiocre. La poterie abonde. Des matériaux périssables vanneries, fruits graines ont été retrouvés. Des charbons, nombreux et volumineux ont permis d'identifier un végétation tropicale depuis la base des formations.

Plusieurs squelettes ont été retirés du gisement, aucun d'eux n'était accompagné de mobilier funéraire mais plusieurs reposaient sur une litière funéraire. On ne sait encore quelle position chronologique leur attribuer.

Les dates actuellement connues 8100 ± 130 B.P, 6650 ± 90 BP, 4100 ± 70 BP ne concernent que les 2/3 supérieurs des couches archéologiques.

2) - Dans l'Atlas saharien, l'étude systématique d'un remblaiement sableux précédemment mis en évidence sur la marge méridionale à El-Haouita, a été entreprise. Les travaux actuels faits par de jeunes chercheurs du CRAPE A.AMARA, M.AMROUCHE, N. FERHAT et A. HEDDOUCHE portent sur les environs de Bou-Saada. Plusieurs industries rattachées à l'Ibéromaurusien ont été retrouvées dans la partie sommitale du remblaiement. Les travaux font l'objet de publication dans dans le tome XXV de Libyca.

3) - Une étude stratigraphique de la côte à l'Ouest d'Alger menée par M. BETROUNI et N. SAOUDI a montré l'existence de 7 étages successifs parmi lesquels le Harounien est matérialisé par une lumachelle de 2m et le Présoltanien par un grès massif. Leur étude fera l'objet d'une publication dans le tome XXVI de Libyca.

4) - Les recherches sur les paléoclimats à partir de charbons trouvés dans les foyers préhistoriques, technique qui paraît riche d'avenir, ont conduit M. COUVERT à publier un Atlas de charbon préhistoriques (Mémoire XXVI du CRAPE) qui devrait permettre un développement plus rapide de cette technique.

5) - Parallèlement à ces travaux, G. AUMASSIP termine la mise au point d'une étude du Bas-Sahara aux temps préhistoriques.

BOTSWANA.

Iron Age Research in Eastern Botswana

by
James R. Denbow
Indiana University
Bloomington, Indiana

For the past year I have been conducting archaeological research in the Serowe - Palapye area of eastern Botswana for my Ph.D. thesis. This work has been supported by grants from Fulbright-Hays and the National Science Foundation. Continuing investigations this year will be sponsored in part by the Botswana Society.

Since Botswana is relatively unknown archaeologically, the first stages of research concentrated on locating and collecting materials from as many prehistoric sites as possible. During the

survey, I benefited from the able help, criticism and petrol of an amateur archaeologist, David Schermers. Early in the reconnaissance it was noted that there was an almost perfect correlation between dense stands of cenchrus ciliaris and the midden deposits on archaeological sites. Although this grass is relatively rare in the surrounding Mopane bushveld, it grows so thickly on the middens that, once established, it prevents the subsequent encroachment of trees and shrubs. This has enabled me to use 1:40,000 scale air photographs to locate sites since they show up as 'bald spots' in the surrounding vegetation. Approximately 150 sites have been investigated using this method, and the artefacts collected indicate that most were occupied between A.D. 800 - 1300. The majority of sites are situated on hill tops, but a limited reconnaissance of the surrounding flat lands suggests that this number represents about 75% of the total number of Iron Age sites in the survey area.

After the reconnaissance 4 sites were tested, two of these intensively. Excavations at Taukome, 30 km. N.W. of Serowe, yielded ceramics similar to the Zhizo phase of the Gokomere Tradition in Rhodesia. Towards the top of the 1½ metre deposit these materials develop into an assemblage identical with the early occupation of Tautswe (Lepionka 1978). The other intensively excavated site, Thatswane, has an early component also identical with Tautswe, and a later, possibly unrelated component which may date c. A.D. 1500. The ceramic seriation I am now engaged in will systematically demonstrate that the Tautswe material, previously labelled as a 'Leopard's Kopje' variant, can be derived from an Early Iron Age base related to the Zhizo phase (cf. Lepionka 1978; Huffman 1978).

Preliminarily, the excavations also indicate that at an early date the first Early Iron Age immigrants into Botswana placed greater reliance upon animal husbandry than has been demonstrated for comparable sites in Rhodesia and the northern Transvaal. Most of the sites in central Botswana contain evidence of cattle or animal kraals with manure deposits up to 3 feet thick. The excavations at Taukome uncovered the outline of one such kraal at the base of the deposit which can definitely be associated with the Early Iron Age occupation of the site. The outline of a flimsily constructed house was also located near the kraal. The general indications are that as herds of domesticated animals increased, the semi-arid fringes of the Kalahari could be profitably utilized by Early Iron Age groups. Moreover, the environment may have been attractive to Early Iron Age 'semi-pastoralists' since the area is basically sweet veld where few unpalatable or poisonous species occur in areas where the vegetation is undisturbed. Mopane leaves are also a high protein browse food used by cattle.

Other materials recovered from the excavations at Taukome and Thatswane include iron and copper tools, animal bone, carbonized sorghum(?) and cow peas(?), numerous ostrich egg shell beads, rare glass beads and cowry shells, and one perforated conus shell disc. Interestingly, most of these trade items occur with the earlier material, suggesting that after A.D. 1000 Botswana was more isolated from contact with trade goods from the coast. As a possible corollary, no sites containing Ml or Map ungubwe type materials were found in the survey area.

The reconnaissance data also suggest that there may have been long term fluctuations in the climate of Botswana over the past 1200 years. Certainly the densest period of occupation appears to have been between A.D. 800 and 1300. Although sites have been located which date to later periods, they are not as numerous as sites dating from the earlier periods. This may mean that between 1300 and 1500 A.D. the climate of Botswana was slightly dryer, or alternatively, it could indicate a shift of the Tsetse fly belts into the area at that time. To draw a modern parallel, it is known that the springs which once fed the tribal capitals at Shoshong and Serowe 100 years ago are now dry. It is difficult at this point, however, to be certain whether this was the result of increased human activity, gradual environmental change, or both. There are indications that the mean annual rainfall is again decreasing.

Lastly, present data indicate that the limits of the 'Tautswe Tradition' appear to conform roughly to the limits of Mopane bushveld which extends from the Makarikari Pans in the west to Mahalapye in the south. Archaeological collections from the Mahalapye area suggest that different Middle Iron Age traditions, perhaps related to other Early Iron Age bases, will be found in the more southern parts of the country.

References

Huffman, T.N. 1978 "The Origins of Leopard's Kopje: An 11th Century Difaquane", Arnoldia. National Museums of Rhodesia.

Lepionka, L. 1978 "Excavations at Tautswemogala". Botswana Notes and Records. Botswana Society.

The Trent University Botswana Archaeological Project (TUBAP)
The 1978 Field Season

by Morgan J. Tamplin, Project Director
Department of Anthropology, Trent University.

The Trent University Botswana Archaeological Project (TUBAP), is a long-term multi-disciplinary research effort aimed at clarifying the sequence of prehistoric cultures and environmental changes in eastern Botswana.

The general aims of the project are:

1. To develop a local cultural chronology.
2. To integrate environmental data into this culture sequence.
3. To define the "man-land" relationships at various technological levels for the various time periods within the region.

The project has been supported by Trent University, the Royal Ontario Museum and especially the Social Sciences and Humanities Research Council of Canada. In 1978, the field party consisted of the following persons in addition to myself:

Catharina van Waarden was in charge of excavations at the site of Leeukop as part of her M.A. thesis research at the Department of Anthropology, Trent University.

Neil Dunford did a groundwater and vegetation study of the area for his M.A. research in the Biology-Geography programme at Trent, and also directed the site mapping.

Robin Dods, a Ph.D. candidate at the University of Toronto, volunteered to do a preliminary analysis of excavated faunal material and prepare comparative osteological specimens. We also engaged Hugh Daechsel, an M.A. student at Mcmaster University as a general research assistant.

For the 1978 season, I concentrated on two sites near the confluence of the Limpopo and Motloutse rivers, on property owned by the Botswana Development corporation, called Talana Farms. One of the sites is a small, fortified hill-top called Leeukop, which we wanted to excavate in order to understand and anticipate the spatial organization of features which we might find on larger sites to be investigated later. Van Waarden's work revealed the outlines of at least 43 circular mud-walled structures and a number of stone retaining walls or fortifications, on the 143 metre-long site.

As the structures do not overlap, they were probably contemporaneous. Artifacts include ceramics, iron, glass and ostrich eggshell beads, brass buttons and badges, and various parts of firearms. A British military insignia dates the main component to the late 19th century and this is confirmed by a radiocarbon date of A D 1915 ± 45 years! There was also a poorly-defined earlier component, radiocarbon dated at AD 1665 ± 45 years.

The bones recovered revealed that a wide variety of wild species were exploited but there were suprisingly few domesticates. In addition to conducting this preliminary faunal analysis, Ms. Dods prepared over 25 comparative osteological specimens which are housed at the National Museum for use by us and other projects.

Neil Dunford directed the mapping of the two sites of Leeukop and Mmamagwa. The latter site is a Leopards Kopje II occupation, radiocarbon dated at AD 940 ± 80 years with at least 25 hectares of occupation in the central portion, up to 1.5 m deep. It was too large and complex an area to make a detailed contour map in the time available, so we placed precisely measured ground controls for low-level aerial photography planned for 1979. I had hoped to do some controlled surface collecting and additional test excavation as well, but because of delays getting into the field, postponed this phase and concentrated our resources on the more urgent requirements of the students' research.

After completing the mapping programme, Mr. Dunford directed his attention to the groundwater and vegetation survey. He examined perennial springs and their associated plant communities, both at Talana, and up the Motloutse as far as Bobonong. He will investigate methods of detecting and predicting the presence of near-surface groundwater using various remote sensing techniques. The vegetation data will help to define the resource potential of the area.

In 1979, we will return to Mmamagwa with a smaller team, to continue mapping the central portion of the site. In conjunction with the mapping, we will take soil samples to be tested for phosphates, in order to define human activity areas and cattle kraals.

Daniel Caister reports:

Since December, 1978, I have been conducting an archaeological survey around Molepolole in Kweneng District 50 km west of Gaborone, Botswana, as the first stage in a study of the prehistory of the Kwena, one of the major Tswana chiefdoms in Botswana. Anthropologically, the Tswana are intriguing for their extremely nucleated settlement systems in the semi-arid peri-Kalahari environment and for the administrative complexity of their chiefdoms. Recent ethno-historical research among the Kwena has led G.Y. Okihiro to conclude that their settlement pattern and political complexity were responses to a massive nineteenth century influx of refugees from the Difaqane and from Afrikaner settlement in the Transvaal. My research will attempt to test that proposition in particular and, more generally, will examine Late Iron Age settlement patterns and adaptations in this unpredictable environment.

So far thirty-three sites have been located through historical research, interviews with local residents, and ground reconnaissance. Five of these sites constitute a series of Kwena capitals occupied sequentially since before the Difaqane. They afford an opportunity to study developments in Tswana settlement organization, adaptation, and ceramic technology over a century and a half of well-documented historical change.

Twenty-four other sites, located on hilltops, are much smaller than the Kwena settlements. Many of them contain stone perimeter walling, terracing, or stone-walled enclosures. Decorated ceramics are relatively rare in surface collections from these sites, but many motifs have parallels in Sotho-Tswana assemblages from the Transvaal and the Orange Free State. Common motifs include rows of horizontal incision or stylus impressions on rims, herringbone incision or comb-stamping on rims, notched or obliquely incised rims, and incised or comb-stamped chevrons, arcades and triangles on bowls and the shoulders of jars. Red and black burnishing often fill in the zones defined by these motifs. Although quite distinct from modern Kwena ceramics, these assemblages may prove to be more similar to nineteenth century Kwena assemblages.

Although the survey has focussed on the hills around Molepolole, three Iron Age sites have been located in the adjacent plains. These village sites have yielded nearly identical assemblages of pottery dominated by spherical vessels with short everted rims decorated only by notching or incising on the lip. This motif also occurs in many assemblages from hilltop sites, but never so exclusively as in the plains sites. It is not yet clear whether this distinction reflects chronological or ethnic differences nor whether the contrasting site locations signify major adaptive differences.

At this stage of research any conclusions are extremely tentative, but two points seem clear. First, basic cultural affinities are oriented toward the south; there is no evidence in the ceramics of significant interaction with groups in Zimbabwe. Second, the large nineteenth century Tswana towns seem to have no precursors in this area. Obviously, either of these statements may be radically altered by the results of further survey.

CAMEROON

Les activités de l'archéologie ORSTOM au Cameroun se sont développées selon deux axes de 1968 à 1978.

- prospection générale de la partie Nord du pays: collectes, méthodologie, et définition de thèmes;

- études thématiques en fonction

(a) des résultats de la prospection (b) des besoins historiques nationaux au Cameroun.

I

La prospection conduite selon une méthodologie d'abord extensive a permis de recenser.
des sites paléolithiques lato sensu et d'en donner un premièr cadre géomorphologique
des sites néo- et post-néolithiques(II)
des rupestres et des mégalithes.
La méthodologie générale et les techniques utilisées sont exposées et discutées dans plusieurs publications. Les résultats concernent surtout la région entre les parallèles II°N et 8°N.
La prospection a ensuite refermé ses limites géographiques et thématiques:
! Néolithique et postnéolithique au Cameroun du Nord (Diamaré, Bénoué, Mayo Danay et Logone et Chari): sondages et prospections
! Rupestres de Bidzar: levé, protection, classement et étude.
Une nouvelle méthodologie prospective a permis de recenser environ 80 sites post-néolithiques surtout au Diamaré et d'en fournir une cartographie à I/200.000.Il est envisagé en 1979 de publier la totalité des sites et de recenser les thèmes les plus rentables.

II

1. Conjointement à la prospection et afin de poser les premiers jalons chrono-culturels de notre région, des fouilles et sondages ont été effectués:
Paléolithique Pre-Acheuléen: Mokorvong.
Post-Acheuléen: Figuil-Louti.
Douroum.

Néolithique Final:Maroua Tsanaga(I) et CFDT.
Post-néolithique: Salak.
Bidzar-Biou.
Bien entendu ce cadre est encore lâche et attend à la fois de nouvelles fouilles, classifications, typologies et datations, le néolithique restant mal défini de même que le paléolithique final. Une grande quantité de sites de surface ou érodés sont classés en fonction des premiers sondages et exigent de nouvelles recherches.

La prospection s'étant orientée sur un thème (Néo et Post Neolithique) et sur une zone, les fouilles ont été programmées de façon à prendre cette zone en transect du Nord au Sud. Ainsi après Salak et Bidzar-Biou, sont prévus Kayam/mongossi vers le parallèle II et/ou Nanikalou II. Nous pensons ainsi obtenir avec une nouvelle étude des ateliers de Maroua (Tsanaga et CFDT) une image inter régionale globale du post-néolithique nord-Camerounais.

2. Une orientation technologique et paléoécologique est programmée:
(a) minéralogie des terres cuites; micromorphologie des poteries; recherche des éléments majeurs et mineurs (échantillons de 20 tessons par composant de site).

(b) cartographie des sols anthropiques (érodés, stérilisés) localement visibles sous la forme de planosols et estimation de l'impact anthropique sur le manteau pédologique durant les derniers millénaires.

3. La liaison ethnologie-archéologie est défendue et souhaitée:
(a) établissement de corpus de la culture matérielle actuelle très mal connue;

(b) établissement de corpus de la culture matérielle des civilisations passées subactuelles et préhistoriques (en cours) ces deux corpus devraient être uniformisés.

(c) recherches linguistiques, toponymiques et mots de base sur les langues tchadiques et adamawa.

Alain Marliac
BP 215
Ngaoundéré Cameroon

The original item was fully referenced with a bibliography of 21 items. These have been omitted for economy but anyone wishing full details can get them from the editor.

CONGO

Dr. Volavka of the Faculty of Fine Arts, York University, Canada send this report:

In the summer of 1978 I worked again in central Africa to conclude my enquiries concerning the antique Kongo regalia which I had found in the Congo (People's Republic of Congo). I met Père Bède about whom I had heard already - as a very knowledgeable amateur he has been conducting archaeological surveys in the rich but unknown region of Bouenza in the Niari basin.

The regalia in which I am interested include both artistic and archaeological items. However I found them in a museum (after five years of field search !) and not in a dig. I have them fully documented and analysed and hope to provide a fuller report in a later number of Nyame Akuma.

EGYPT

This item from Dr.C.V. Haynes of the University of Arizona came just too late for Nyame Akuma no.13. Although referring to work carried out over a year ago it seems of sufficient interest to include it now.

"In February and March, 1978, I, with colleagues Peter Mehringer, Donald Johnson, and Robert Giegengack, continued with my ongoing project of mapping and dating late Quarternary deposits of the Western Desert of Egypt. Emphasis is being placed on the Holocene playa deposits and related soils of the Kharga depression and the Dungul-Kiseiba depression in order to better understand pluvial conditions and their relation to human occupation of the area.

In late September and early October, I participated in the expedition of Farouk El Baz, Smithsonian Institution, to Gilf Kebir and Oweinat to examine deposits and geologic phenomena that are considered to be potential analogs of similar features of Mars. Archaeological observations were made by William McHugh and myself and several new but small sites (Neolithic) were found.

I will return in February and March of next year to continue my field investigations and will join Fred Wendorf in the Bir Kiseiba area where we have several sites associated with lake deposits. This work will also be extended to the depressions of northern Sudan where our visits of 1976 revealed sites associated with lake deposits."

Dakhleh Oasis Project 1978 Season.

In the autumn of 1978 the combined ROM-SSEA project in the Dakhleh Oasis of the Egyptian Western Desert had its first season of intensive field work. The area selected for the beginning of the survey phase of the project was at the extreme western end of the oasis, in a region known as Maohoub. We managed to completely cover an area of 120 square kilometres within which fifty sites were recorded. We have also begun studies of the flora, fauna and geology of the oasis.

The earliest material in our purview is represented in ten sites of varying size. Unfortunately, heavy deflation has occured in the area and these Neolithic sites are now only surface scatterings of lithics. Three phases of the Neolithic seem indicated by the technologies, the latest having the addition of ceramics. Preliminary indications are that these Neolithic remains cannot be directly associated with developments in the Nile Valley. Possibly, also, the latest of these Neolithic remains comes down to 2300 B.C. or so, when we have the establishment of the next recognizably different culture. That is to be found at Balat, in eatern Dakhleh, where the Egyptians of the late sixth dynasty founded an administrative centre of considerable magnitude. In Maohoub this season, we have recorded eight other sites of this same period- four of them cemeteries and the largest settlement covering over eighty hectares. The reasons for the establishment of these sites are not yet apparent, but it does seem clear that they fell into disuse by the Middle Kingdom.

Of the remaining thirty-two sites, twenty-five date to the Roman occupation and the rest to the subsequent Coptic and early Islamic periods. The preservation of these sites is excellent, in marked contrast to the earlier ones, and we have mud brick farmhouses standing above ground and preserved well into the second storey. Textual references to the development of agriculture in the oasis seem well borne out by the archaeological evidence. The general small size, numbers, and fairly even distribution of architectural sites as well as the extensive system of aqueducts and floral finds all support this interpretation. The subsequent Christian sites are also well preserved, but far fewer in number, a fact which may be a reflection of changed conditions due, probably, to a combination of over-utilization of the area by the Romans and some slight climatic change.

A.J. Mills
Royal Ontario Museum.

GHANA

Professor J. Sutton of the Department of Archaeology, University of Ghana sends this report:

The rescheduling of the academic calendar, resulting from certain local troubles, made field research in 1978 difficult. It was however possible to continue certain projects, notably in the Accra region, and to undertake exploratory work elsewhere.

Mr.J.R. Anquandah has pursued his project on the Accra plains (see N.A. 12, p.24-7), with further excavations at Ladoku near the coast and at Cherekecherete at the southern end of the Shai hills. This work is helping to refine the later Iron Age sequence for the region - and maybe to extend it back into the earlier half of Iron Age. He is continuing to correlate with these findings ethnographic and oral-historical investigations among the Ga and Dangme people.

Meanwhile, Dr. Joanne Dombrowski has undertaken a second season of work at Gao Lagoon (by Tema, 0° 03 'E) with its LSA shell accumulations and pottery. (See N.A. 10, p.31-4; 11,p.29-30). A radiocarbon date of some 6,000 years ago (N-3213) has been obtained from the peaty clay underlying the cultural material. Dr. Dombrowski has also tested a village situated on the adjacent cliff (between the lagoon and the sea). Radiocarbon results show that this extends back to quite early in the Iron Age (the earliest centuries A.D.): it shows promise of tieing into Mr. Anquandah's sequence.

Over the years a considerable amount of palaeoecological/ environmental work has been undertaken on both the Stone Age and the Iron Age in Ghana through the keen collaboration of scientists in a variety of disciplines with archaeologists. It is hoped to strengthen such cooperation at this point; and the Inter-University Council (in London) has agreed to provide some essential equipment to the University of Ghana for this purpose. Although we are not planning a formal conference at this stage, we do have in mind to maintain a local informal seminar series, while certain aspects of palaeoecology and past environments in Ghana will be treated in communications to conferences outside the country. Beside the projects mentioned above, Professor J.E.G. Sutton is interested in the indications of environmental change in relation to the Kintampo culture of the second millennium B.C., and has begun some preliminary fieldwork on this subject.

Especially interesting for the post-Pleistocene sequence are the levels of Lake Bosumtwi near Kumasi. Dr. M.R. Talbot (now of Leeds University) returned to Ghana this year to collect samples

with Dr.J. Maley (palynologist from C.N.R.S.). (See N.A. 10, p.34-5.) On the coast moreover another deposit of peat or peaty mud has been located at Ada (0°38'E) by the Volta estuary (by Dr. Kim Ly, geologist at the University of Ghana). It underlies the beach and is exposed at low sea-level. It is doubtless part of a former lagoon over which the beach has retreated through tidal pressures. It seems to be similar to the deposit recorded in the 1950s by Dr. Oliver Davies at Takoradi (1°45'W) - but since destroyed by marine erosion - from which a radiocarbon date (Gro-1194) almost 6,000 years old was obtained. (See Davies, Quaternary in the Coastlands of Guinea, Glasgow, 1964, p.159; and WAJA I, 1971, p.94.) It is interesting to note the closeness of this date to that recently obtained by Dr. Joanne Dombrowski at Gao lagoon (noted above). It is hoped to obtain a radiocarbon date from the Ada deposit, as well as macro-botanical and palynological identifications. There must be many such lagoonal peaty deposits along the Ghana coast: they should help in providing a background to sea-levels, coastal erosion, estuary formation and indeed settlement history close to the shore during the post-Pleistocene. It is possible that the lie and levels of these peaty deposits have been affected by recent tectonic activity: there is therefore a community of interest between us and a team of seismologists (at Legon and Chelsea College, London) undertaking a micro- earthquake survey in the Accra region.

Miss Signe Nygaard returned to Ghana during the year to complete her study of the Stone Age collections, including the 'Sangoan' materials (as others have described them), excavated at Asokrochnna. (See WAJA, VI, 1976, p.13-19).

During the first quarter of 1979, Professor Merrick Posnansky (now at U.C.L.A.) is returning for a further season of excavation at the later Iron Age trading town of Begho, concentrating on the Kramo quarter. Furthermore, Mr. Rudolf Gerharz (Frankfurt A-M) is studying archaeological iron objects of which this Department has a fair collection, dating mostly to the middle and later periods of the Iron Age.

Mr. E.N.O. Quarcoopome has been appointed Demonstrator in the Department. His special interest is in art history: he has already made a comparative study of Ghanaian terracotta figurines, and is hoping to pursue his studies both locally and overseas. Meanwhile, one of the Ghanaian lecturers, Mr. L.B. Crossland, has returned from study leave at Arizona State University (where he was supported by a Fulbright fellowship). The Chief Technician, Mr.D.K. Agyei-Henaku, moreover, has completed a course in conservation at the Institute of Archaeology in London University leading to the certificate of the Museums Association. The assistance of the Inter-University Council for Higher Education Overseas in this is very much appreciated.

Two theses recently completed successfully in the Department contribute valuably to knowledge of the Iron Age in the forest edge region in Brong-Ahafo and correlate not only with each other but also with the Begho project. They are by J. Boachie-Ansah, 'An archaeological contribution to the history of Wenchi' (M.A.), and K. Effah-Gyamfi, 'Bono Manso: an archaeological investigation of early Akan urbanism' (Ph.D.).

Among theses being prepared are Mrs. B. Priddy's ethnographic studies of Ghanaian pottery and Mr.T.F. Garrard's survey of brass in Akan society to the nineteenth century. It may also be noted that Mr. Garrard's book on Akan weights and the gold trade is about to be published by Longmans.

Readers of Nyame Akuma will be wondering what is happening with Sankofa (the Legon archaeological journal), the first two volumes of which (for 1975 and 1976) were edited by James Anquandah. Unfortunately the costs and practical problems of local printing have increased prohibitively, so that the Department has reluctantly decided to suspend Sankofa as a formally printed journal for the time being. Instead we intend to produce a cyclostyled newsletter of Archaeology in Ghana each year, mainly for local consumption, and to continue to send digests and notes on interesting developments to Nyame Akuma. Important articles and research reports on Ghanaian archaeology will, we hope, continue to be carried in WAJA and other international journals.

Dr. Debrah, acting Keeper, sends news of the Ghana National Museum.

A preliminary archaeological survey of a cave has been undertaken by Mr.J.E.Turkson, at a locality called Likpe in the Volta Region. The name "Likpe" in the vernacular means "sharpeners of stone", which also suggests makers of polished stone axes (celts).

The people of Likpe also called Bakples claim to have originated from a hole - the cave - in the Togo Ranges and used sharpened stone tools also for guerrilla activities.

Some pottery was collected at the precincts of the cave, but a test pit when sunk in the cave would stand in a better position to say whether or not the Bakples have any distant relationship with Later Stone Age culture.

Movements: Mr.E.K. Agorsah formerly Acting Keeper of the Central Museum in Accra, is now in the U.S.A. persuing a Ph.D. course at the Department of Archaeology, University of California, Los Angeles. Dr.I.N.Debrah formerly of the Volta Regional Museum has taken over as Acting Keeper in the Central Museum, whilst Mr.J.E.Turkson has gone to take over as Assistant Keeper in Charge of the Volta Regional Museum.

KENYA

Mr. Chittick, Director of the British Institute in Eastern Africa sends this report on Excavations at Manda 1978.

The period of work at Manda ran from 3rd August to 17th October. An average of between fifty and sixty persons were employed on the excavations; the supervisory staff numbered nine.

The site lies near the northern end of Manda island. On its western side it faces onto a wide creek, the Mto Manda. To the north, separated from the town site by a narrow, minor, creek, is a wide sandspit, terminating in the Kitwa cha Manda. To the south, another creek reaches nearly to the Indian Ocean. The town was thus situated on a peninsula. Previous work had indicated that the town was established in the ninth century; it is thus the earliest town site to be investigated on the East African coast. Remains of the town (all periods) extend over 15 hectares.

The main periods distinguished are based on the dating of the imported ceramics, together with invaluable but rare evidence from coins. Period I is believed to extend from an uncertain point in the ninth century into the early eleventh. It is sub-divided on stratigraphic grounds into Periods Ia, Ib, Ic and Id. Period II begins with the introduction of sgraffiato ware, ascribed to the second quarter of the eleventh century, and extends to about the beginning of the thirteenth century, though most of the remains are ascribed to the early part of this period. Period III is that of the latest poor sgraffiato wares and of the black-on-yellow, the latter being characteristic of the fourteenth century. Period IV is one of poverty, covering the fifteenth into the early sixteenth century. The succeeding Period, V, lasts up to the time when the town was deserted in the eighteenth century.

The chief effort in the present season was devoted to elucidating the problem of the purpose of the 'megawalls', as we have termed them, and establishing their plan. These are walls of massive coral blocks, which in places run along the beach, parallel to the shore, and in places return inland. Nearly forty trenches were dug to this end, including a number chiefly aimed at elucidating the topographical questions with which the problem of these walls is connected.

It is now established with tolerable certainty that the whole of that portion of the island that lies to the north and north-east of the town site (including the sandspit and the low-lying land to the south) is an accretion of the last few centuries. The shore on the western side of the town faced onto open water (whereas at the present day it is fringed with mangroves). This Mto Manda was

very probably of considerable depth, whereas now it dries at low water spring tides. The shore was some forty metres east of its present position at the time of the first settlement.

The earliest structure brought to light (Period Ia) is of burnt brick on stone footings, all set in mud mortar. The building, of which only part was exposed, was constructed on a sand-dune which was evidently adjacent to the shore.

Subsequently a wall was built on the beach, more or less parallel to the shoreline (Period Ib). This appears to have been constructed partly to reclaim the foreshore, and partly to provide a more solid basis for buildings than the natural sandy soil, the space behind it having been filled up. Further extensions were subsequently made in a seaward direction. The system of sea walls as it further developed incorporated returns running inland, thus forming rectangular terraces projecting on to the foreshore. The latest of these works is to be dated to Period II.

The House of the Tanks is a building of unique plan, consisting essentially of rooms arraged around a courtyard beneath which there are cisterns. This building was excavated in 1970; it is ascribed on the basis of pottery and coin finds to the end of Period I, during the latter part of the tenth century. As a result of work carried out in the current season it can now be shown that the house was constructed on one of these terraces, the western part of which projected on to the shore. It was also ascertained that the house was approached by a flight of steps on the seaward side.

One end of a brick building, associated with the sea wall of Period Ib, had been exposed in previous work. The remainder of this structure was excavated, but with disappointing results, as it had been heavily robbed. It appears to have served as a cistern.

A stone-built structure inland from the main landing-place site was excavated. This proved to be a house arranged around a sunken courtyard, to which steps gave access from surrounding terraces. A portico ran round the terrace. The building is provisionally dated to the early part of Period II (eleventh or early twelfth century). If this dating proves correct on further examination of the finds, it will be the earliest example of the type of house with a sunken courtyard, a type which occurs at Husuni Kubwa (first half of the fourteenth century) and in numerous other later contexts, down to the sixteenth century. The upper parts of this house had been very recently robbed.

There is little evidence of occupation in the northern part of the site after the twelfth century. One curious building, of which two piers with springs of arches projected above ground, was excavated and proved to have been in use in the fourteenth

century. It is of very unusual design, in its original form having consisted of a single chamber surrounded by an arcade on at least three sides. It may have served as a meeting place, open on all sides to the breeze, not dissimilar in character to the modern baraza.

Following on a period during which the town seems almost to have ceased to exist, there was a considerable revival (Period V). There are numerous standing ruins dating from this time; all except one mosque (the northern, which probably belongs to this period) lie on the southern part of the peninsula. These ruins were cleared of bush and planned; some clearance of surface soil was carried out to establish lines of walls. To judge from the architecture of the (southern) mosque in the centre of the settlement of the period, and the style of masonry (much inferior to the early work), together with the evidence of imported pottery found in the area, and a probable association with the ruins, this revival centred on the seventeenth century. The town of this period is surrounded by a wall, the whole circuit of which we were able to establish. The wall is provided with holes for muskets; it also incorporated two round towers in its circuit (these are believed to be the only such of this period).

Why the town should have moved southwards at this period is uncertain.

As to finds, the large proportion of luxury goods (glazed pottery, including Yüeh stoneware and glass) in deposits of the earliest period (ninth century) is notable. Such goods are more plentiful than at any other period or any other site yet examined.

The back-filling of the trenches is at the time of writing nearly finished.

A preliminary report on Chesowanja

by

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TILLMIAP, Nairobi.

and

J.A.J. Gowlett
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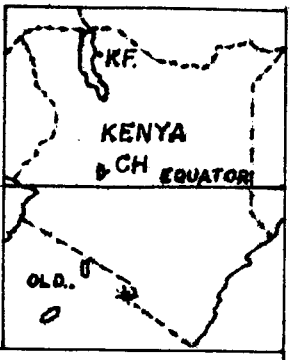
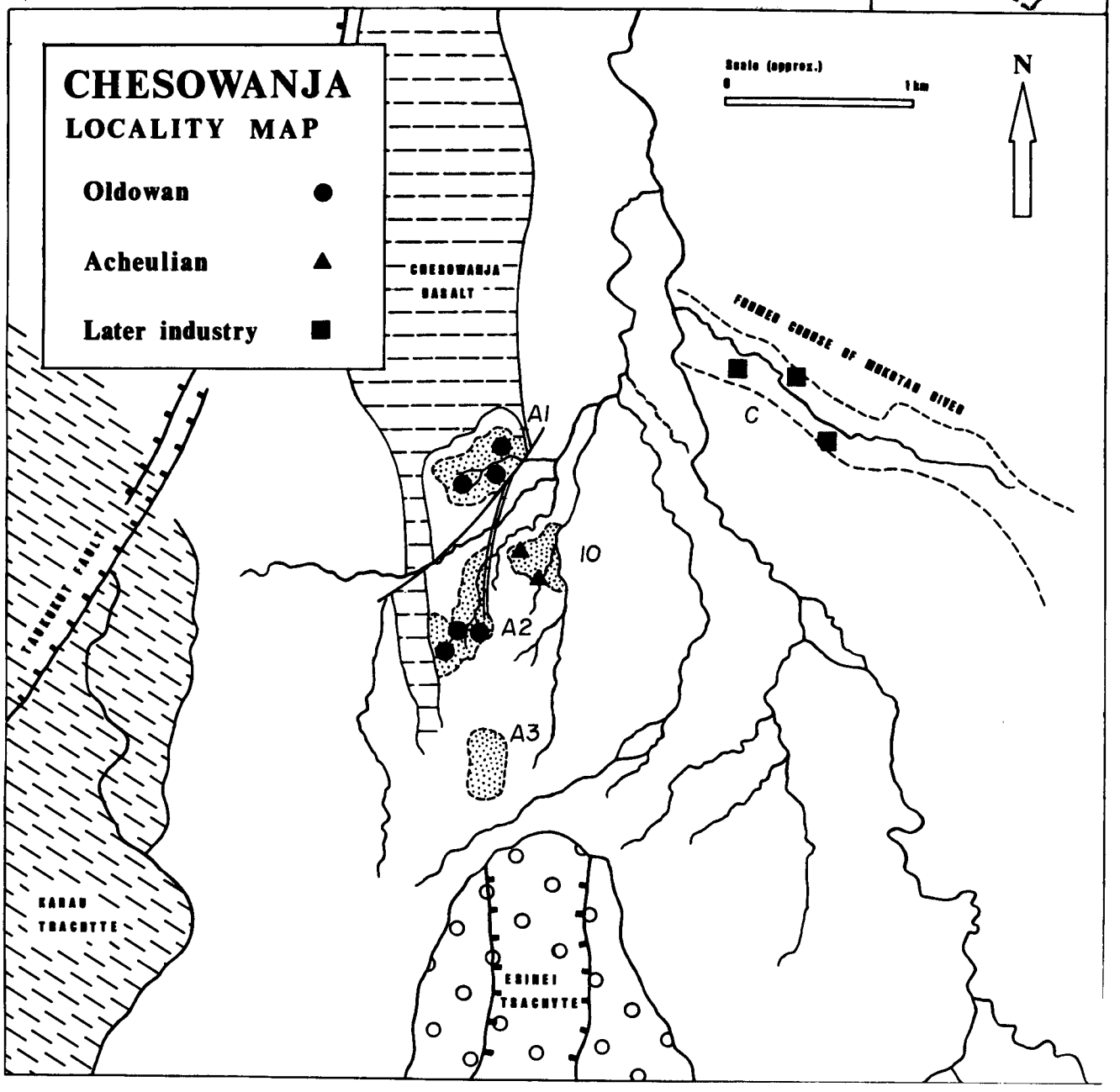
This brief report describes new discoveries from recent palaeoanthropological studies undertaken at Chesowanja which is situated on the east side of Lake Baringo in the Gregory Rift Valley of Northern Kenya (see map). Chesowanja's importance lies in the evidence for a very long datable cultural sequence representing a time span of nearly two million years; the site's geographical location approximately midway between early Pleistocene localities in the Lake Turkana basin - the Omo and Koobi Fora - and those in northern Tanzania - Olduvai Gorge and Peninj, and its

MAPS (1) Inset, right: Map shows Chesowanja's (CH) geographical relationships to Koobi Fora (KF) and Olduvai (Old)

(2) Chesowanja locality map shows location of archaeological occurrences in different areas of exposures.





ecological and cultural relationships to other important localities in the Baringo basin, which will provide in the future a more complete understanding of the prehistory of human occupation within this particular area of Kenya.

The primary purpose of our first field season was to test trench promising localities to discover whether well preserved fauna and artefacts could be recovered from stratified occurrences, especially in the older beds of the sedimentary sequence. We wished to recover sufficient samples of stone artefacts so as to understand the range of variation in assemblage composition and in a preliminary way to define the cultural entities present. Furthermore, we hoped to document the context, nature and character of these occurrences in an effort to shed further light on the ways of life of early hominids.

With grants from the L.S.B. Leakey Foundation and the Wenner-Gren Foundation, we were able to undertake small scale field investigations during January and February, 1978. These field studies were followed up by laboratory analysis of the finds at the International Louis Leakey Memorial Institute for African Prehistory in Nairobi.

Previous studies

Geological investigations carried out in the early 1970's by the late Professor W.W. Bishop and his colleagues had shown the potential of this area for detailed palaeoanthropological studies (Bishop et al, 1978). Mapping, preliminary microstratigraphic and palaeontologic studies and radiometric age determinations indicated a long geological sequence of sedimentary deposits. It was believed based on the nature and character of the surface finds - well preserved fossil fauna, including early hominid remains, together with cultural materials - that these were eroding out of beds ranging in time from a Lower Pleistocene age (circa 1.5 million years) through to the present.

Results of the 1978 season

A. Chemoigut Formation

The basal sequence of beds has been called the Chemoigut Formation. There are 3 'windows' of exposures (see Map - A1, A2 and A3) and their age is probably between 1.93 and 1.34 million years (Bishop et al, 1978). 6 localities where stone artefacts and bone were found to be eroding out on the surface were test excavated in 'windows': A1 and A2. Quantities of *in situ* stone artefacts and faunal material were recovered.

At the largest excavation, GnJi 1/6E, which measured some 40 square metres, approximately 700 pieces were plotted. Over 90% of the artefact assemblage was composed of flakes and flaking debitage, while the 'tool' category was dominated by scrapers but also contained choppers, polyhedrons, discoids and small retouched core/cobble fragments. No bifaces were recovered from the surface nor in situ. Fauna from the site included some large and well-preserved specimens. A range of animals was represented such as bovids, equids, hippo and crocodile.

The archaeological occurrence recovered from this 'site' is typical of the character of the occurrences found stratified in sediments of the Chemoigut Formation. However, there are differences in the density and composition of the artecact assemblages as well as the frequency of faunal elements which are features for further investigation. The Stone Industry is based on a 'core tool' and flake tradition and in view of the age of the sediments and the character and composition of the artefact assemblages, it is provisionally assigned as a geographical variant belonging to the Oldowan Industrial Complex.

One of the highlights during the season was the discovery of a number of hominid cranial fragments closeby to one of the excavations. These fragments were identified subsequently as belonging to a single individual, which was classified as Australopithecus c.f. boisei (Dr. Allan Walker, personal communication).

B. The Area 10 localities:

This area was formerly known as the 'Acheulian localities'. (Bishop et al, 1978). However, this season's work has revealed a number of archaeological occurrences with somewhat different characteristics and also includes exposures of both the Chesowanja and Karau Formations, so that an area designation - Area 10 - now seems preferable. (see map)

In brief, the Chesowanja Formation disconformably overlies the Chemoigut Formation and is composed of 2 members. (Bishop et al, 1978). The lower basalt member has been dated at 0.71 _ 0.07 m.y. while the upper palaesol member locally contains artefacts and fauna. Several areas where there were surface concentrations were test excavated and at one, which has been designated GnJi 10/5, over 1200 artefacts and bone fragments were recovered in situ. The artefact assemblage consists very largely of small flakes and fragments under 7-8 cms. in length. The diminitive character of the artefacts is further examplified by the 'tool' category. Small flake scrapers dominate with discoids and miscellaneous trimmed pieces being other common 'types'. The bone was generally badly comminuted but identifiable pieces included bovid, fish and crocodile bone fragments and teeth.

At this locality and others where trial trenches were dug no bifaces were recovered in situ. Surface bifaces that were formerly thought to be associated with these beds of the Chesowanja Formation are "dripping down the gentle slopes from higher strata. Furthermore, they do not appear to be stratified in tuffaceous deposits of the Karau Formation which unconformably overlies the Chesowanja Formation. We are of the opinion that the 'classic Acheulian' occurrences with bifaces at Chesowanja post-date the Karau Formation and are associated with the upper palaesol/calcrete (Formation undefined?), which unconformably overlies this Formation and is at present of uncertain age (Harris and Gowlett, in press). But we do not deny the fact that those occurrences without bifaces found stratified within the Chesowanja Formation probably represent either an activity 'facies' or a geographical variant (Industry?) belonging to the Acheulian Industrial Complex. However, these findings remain tentative until we are able to carry out further geological and archaeological field studies.

Most of the occurrences so far mentioned are stratified in clays, silts and silty sands which means that the materials are preserved in minimally disturbed contexts. The environment of deposition indicates floodplains lateral to what were presumably fresh water streams. This is not inconsistent with the palaeo-environmental reconstruction that indicates the sites were located on the margins of the saline lake which had a fluctuating water level (Bishop et al, 1978). The fauna recovered from the excavations represents a diversity of animals which suggests the surrounding landscape had bush cover as well as more open grasslands.

C. Mukutan beds

Further east than the other sites, there are relatively recent floodplain deposits which have been named the Mukutan Beds. In various places archaeological assemblages are exposed, which we believe to belong to the Neolithic or perhaps in some cases to the Later Stone Age. (see map)
We were not able to extend our investigations to these areas, except in some cases to plan and photograph surface finds.

We have observed the presence of decorated pottery with obsidian flakes, which suggests the material is not older than circa 6,000 B.C. However, the most typical assemblages consist mainly of extensive concentrations of stone artefacts made from lava that probably represent factory sites but animal bones are also found amongst them.

Summary:

An outline has been given of the first season's work at Chesowanja. Next year we hope to carry out further extensive research at Chesowanja as well as to extend our studies to other known localities on the west-side of the Lake Baringo basin with an enlarged group.

We gratefully acknowledge the support of the L.S.B. Leakey Foundation and the Wenner-Gren Foundation. The Baringo Basin Project is under the auspices of the International Louis Leakey Memorial Institute for African Prehistory, Nairobi.

References:

Bishop, W.W., Hill, A., and Pickford, M., (1978) Chesowanja: A revised geological interpretation in Bishop W.W. (ed), Geological Background to Fossil Man, Geol. Soc. Lond. Scottish Academic Press.

Harris, J.W.K. and Gowlett, J.A.J. (in press) Evidence of Early Stone Industries at Chesowanja. in Leakey R.E.L. and Ogot, B.A. (eds) Proceedings of the 8th Pan-African Congress of African Prehistory and Quaternary Studies, Nairobi.

Continuing Work at Lukenya Hill, Kenya.

Survey of the 70 square km. which comprise Lukenya Hill is now about 80 percent complete thanks to the work of Stanley Ambrose (Berkeley), and James and Debbra Swan, who have undertaken a complete survey of the rock art and associated rock shelters. Some 200 prehistoric and protohistoric sites have been located and described, including Acheulean, MSA, MSA/LSA transition, LSA Pastoral Neolithic, Iron Age and Massai meat feasting sites. In addition, some 75 stock boma complexes, dating from 1915 to 1950, have been located. The excavation of one of these by Steve Brendt (Berkeley) suggests that the ethno-archaeology of these sites may shed considerable light on the structure and location of Pastoral Neolithic and Pastoral Iron Age sites in many parts of East Africa.

Building on the excavations of Michael Gramly and Harry Merrick, we have managed to define a complete, or nearly complete, sequence beginning in the Middle Stone Age. The entire sequence is characterized by well preserved technology and faunal remains in parallel successions at open sites and rock shelters. Excavations conducted by Sheryll Miller of a site containing LSA and MSA horizons indicates that the appearance of typical LSA technological assemblages had occurred by about 25,000 BP. A series of pre-LSA horizons at this and other sites suggests the potential for a complex MSA/LSA transition of substantial duration, but the order and processual details of this succession will require careful dating and additional excavation. The LSA is marked by at least two prolonged and relatively stable industrial stages, but there are also hints of shorter technological episodes in the latter half of the sequence. In addition, the contents of rock shelters appear to be more variable than those of open sites, suggesting the shelters, most of which are quite small, tended to attract activity specific occupations. This pattern continues into the Pastoral Neolithic and also can be documented in the ethnographic context for both pastoral and agricultural peoples.

The LSA/PN transition is not yet securely dated at Lukenya. The earliest Pastoral Neolithic horizon at Lukenya dates from 3400 BP, but there are no dates on terminal LSA horizons and no stratigraphic LSA/PN transitions except in the complex stratigraphic context of rock shelters. Our survey data, the serriation of stone tools and pottery from tested sites, and C-14 dates, all indicate that the numerous, large conspicuous Pastoral Neolithic sites which abound at Lukenya date from between 2200 and 1350 BP. We have tested only one small open site from the earlier half of the succession. This site contains three well defined, productive horizons. The earliest dates from around 3400 BP and the later ones from about 2400 BP. Although the dates from these later horizons are virtually identical, the serriation of stone tools and pottery makes it possible to separate them in time. This yields the

following sequence when combined with the later period sites.

First there is an earlier period beginning at or before 3400 BP and terminating at 2400 BP. At the beginning of this period, the tool industry contains 27 percent outils ecailles, 34 percent microliths, and 23 percent convex scraper forms, especially small end and thumbnail scrapers. In addition, there are modest percentages of other typical LSA tool types, such as burins. There is a greater reliance on local raw materials, especially microcrystalline silica. Stylistically, a number of specific tool types resemble their LSA counterparts very closely, raising the possibility that early Pastoral Neolithic adaptations locally incorporated LSA hunter/gatherers together with much of their technology. Analysis by Michael Gramly of the fauna recovered during the first two seasons of excavation suggests a pastoral adaptation relying mainly on ovicaprids, though some cattle are present in the upper horizon. Zebra and antelopes are also present. Ceramics include Nderit Ware and Narosura Ware. By the end of this period, about 2400 BP, cattle appear to be more common in the faunal remains, the ceramic mix is now dominated by Akira Ware and Narosura Ware, and the frequencies of major classes of stone tools have changed significantly. Outils ecailles account for 49 percent, microliths for 23 percent, and convex scraper forms for 13 percent. The scrapers are not as closely standardized as those of the lower horizon, though thumbnail forms are still present.

Second, there is a very brief period, beginning about 2400 BP and lasting no more than 200 or 400 years, in which small encampments continue to be used. At the very beginning of this period there is radical readaptation of the cultural system in which cattle are relied upon to the near exclusion of ovicaprids, Narosura Ware becomes the only known ceramic tradition represented, and outils ecailles dominate the technology: outils ecailles 68 percent, microliths 9 percent, convex scraper forms 6 percent. Thumbnail scrapers are absent in a sample of 332 shaped tools.

Third, there follows a period of about 1,000 years in which sites are quite large and internally differentiated. During this period, the stone tools technology remains dominated by outils ecailles, though there may be subtle changes in the style and frequency of other tool types. Narosura Ware persists with little stylistic alteration until around 1400 BP when a new ware characterized by panels of rectangular impressions is introduced, apparently coexisting with Narosura Ware until the emergence of Iron Age adaptations. The remains of cattle heavily dominate the faunal assemblages, which are extremely rich and well preserved. By 1800 BP, ground and flaked bone tools have become commonplace for the first time. The analysis of these by Suzan Kaehler will add a new dimension to Pastoral Neolithic technological studies.

Numerous Pastoral Neolithic cemetaries have been located on Lukenya Hill. Limited test excavations and surface finds indicate that at least two groups are represented. The most numerous and extensive cemetaries contain stone bowls with beaded rims, while the smaller, less numerous cemetaries contain bowls of the more usual sort. These cemetaries remain undated, so their exact relationship to the pastoral succession is unknown, though potential correlations seem obvious.

Isolated, well-sealed Pastoral Iron Age sites have proven difficult to locate, though the associated burials are common and scattered occupational debris is found at a number of sites.

A single, ephemeral, Early Iron Age (Kwale Ware or derivative) site has been located on the north end of Lukenya Hill.

The density of sites (over $4/km^2$) and lengthy, continuous sequence at Lukenya Hill will allow us to reconstruct changing demographic, economic and technological patterns in central Kenya over a period of at least 35,000 years. Since many sites are involved, this will require a concerted program of excavation and analysis over the next few years.

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LUKENYA HILL, GvJm 46, EXCAVATION REPORT

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In 1977 and 1978 a group from Pitzer College conducted excavations at GvJm 46, a late Pleistocene site in Kenya. Because the work of Merrick, Gramly, and others had revealed the late Pleistocene content of several rock shelters at Lukenya Hill, the goal was to complement this information by excavating an open-air site if one could be found with deposits still in situ. Stream erosion and ant-bear holes demonstrated the presence of an artifact horizon at GvJm 46, which test pits subsequently suggested might lie in situ.

In 1977 two intersecting trenches, each 1 meter by 3 meters, were excavated. Just below the surface occurred very scattered artifacts attributed to the "Pastoral Neolithic," underlain by almost half a meter of sterile deposit. At the base of that deposit there was a change in earth color, and artifacts of "Late Stone Age" type appeared in abundance. This cultural deposit continued down to the base of excavations, which in all squares halted when encountering a flat rock surface at a depth of some 1.5 to 2 meters.

Vertical variation in artifact densities and earth texture suggests possible fluctuations in climate and occupation density during the time the site was inhabited. However, there is no evidence of an erosion phase, and the cultural materials maintain an amazing continuity in artifact types represented. Particularly noteworthy are the finely-made backed microliths, mostly backed bladelets; these are made on micro-crystalline silica brought as nodues from the Athi River, or on obsidian found locally in the form of small lapilli. Also interesting are small fan-shaped scrapers, carefully worked of micro-crystalline silica; the working end of these tools is broadly convex, like a thumbnail scraper, but the proximal end has been constricted as though for hafting. Other shaped or use-shaped tool types present include a variety of other scrapers, outils ecaillees, and hammerstones.

A most noteworthy feature of GvJm 46 is its excellent bone preservation. Almost all of the bone recovered is splintered and burned. It indicates game species hunted, and butchery habits. Animals most commonly represented, kindly identified by John Kimingich of the National Museums of Kenya, include impala, hartebeest, gazelle, and zebra. Impala and gazelle are found at Lukenya Hill today, while the seasonal migration into the area of hartebeest and zebra has only been disrupted recently by the Nairobi-Mombasa highway and rail line. Thus the ecology of the area in late Pleistocene times was not much different from the present one.

Artifacts and bones occur in concentrations throughout the deposit, with a light amount of scatter in between. Some patches seem to represent remains of a single meal; a typical concentration includes the ends of several long-bones apparently belonging to the same animal, many long-bone

splinters, and one or two large quartz bashing stones. The backed microliths may also have served in food preparation, as knives.

This open-air area may also have functioned as a hide-preparation spot, where skins were pegged out on the ground and processed with the hafted fan-shaped scrapers. Although these same scrapers are found in rock-shelter context at Lukenya Hill, their other very frequent occurrence is at GvJm 10, another open-air site where unfortunately the deposit was entirely eroded out (Gramly 1975).

The large quantity of quartz debitage at GvJm 46, as well as hammerstones and outils ecasillees, indicates that the site also served as a workshop for lithic manufacture and other activities.

Excavations in 1978 continued in the general area of the 1977 work, expanding the sample of artifacts and fauna. Several new test pits were put in to determine the maximum extend of the site, which is now fairly well defined and extends half a kilometer along the base of Lukenya Hill.

Most interesting were the 3 test pits excavated to determine stratigraphy upslope and downslope from the 1977 grid. These revealed that the rock forming the base of all 1977 pits was a huge slab from the face of Lukenya Hill; it apparently fell to its present position sometime before the main "Late Stone Age" deposit began to develop.

The extended stratigraphy goes to a depth of 3.3 meters below the present ground surface, before striking rock (bedrock?). Below the "Late Stone Age" horizon is a lag deposit indicative of fairly strong slopewash. This overlies an almost sterile band of coarse material eroded from the granite-gneiss cliff immediately above the site. Below that occurs an entirely different deposit containing an artifact assemblage as yet industrially unidentified. This "lower unit" is approximately 1.5 meters in thickness of depost.

Archaeological specimens from the lower unit strongly resemble those of the "Late Stone Age" assemblage in terms of lithic manufacturing techniques and raw materials. Artifact types, on the other hand, are quite different. There are no backed microliths, although a blade/large bladelet element does occur rarely in the debitage. The fan-shaped scraper is also absent from the lower unit, and scrapers are instead dominated by shallow denticulate forms.

The abundance of artifacts is truly phenomenal. In one 10-cm spit from a 1 meter by 1 meter square, over 70,000 grams of quartz artifacts were recovered. Faunal remains are also excellently preserved in this lower unit, and hundreds of identifiable specimens were retrieved. The fauna of the lower unit do not appear, in preliminary analysis, very different from those of the "Late Stone Age" horizon.

One of the most significant aspects of the GvJm 46 findings is the age of the site. Thus far, age determinations have been run for two samples of burned bone, recovered from near the top of the "Late Stone Age" sequence. These dates, processed by Geochron, are:

Sample	Depth	Age BP	C13 corrected
GX 5350A	51-54 cm.	18,930	19,330 +1000 - 890
GX 5349A	87-90 cm.	20,395	20,780 +1120 - 980

A full meter of "Late Stone Age" deposit lies below the depth of the earlier sample. Materials recovered from the base of this horizon have been submitted for dating. It is anticipated that GvJm 46 will prove to be the earliest yet known site in Kenya with a full component of truly microlithic backed bladelets. The Lukenya Hill site GvJm 22 (Gramly and Rightmire 1973) contains the same sort of industry, extending back as far as about 17,000 BP. GvJm 46 continues this tradition further still into the Pleistocene.

Certain inferences about the interrelationships of environment and culture can be drawn from the "Late Stone Age" deposits of GvJm 46. Although it remains to be confirmed by the full faunal analysis, it appears that the ecosystem at Lukenya was relatively little affected by the cold climax of the late Pleistocene. Likewise, the cultural system, or at least the technological aspect represented by the archaeological discoveries, was markedly consistent over the period of perhaps 20,000 years represented at GvJm 22 and GvJm 46.

Finally, the lower unit remains an archaeological enigma at present. It is not unique as an aggregate lacking backed microliths just preceding the standard "Late Stone Age" sort of assemblage. Others have been recovered from Leopard's Hill in Zambia (Miller 1969), Matupi in Zaire (Van Noten 1977), and Kisese in Tanzania (Inskeep 1962). In each of these cases, the industry appears to represent a departure from the earlier "Middle Stone Age" technology. It is here suggested that the most significant technological novely associated with these aggregates is the bow and fire-hardened, sharpened wooden arrow. These have of course left no direct evidence in the archaeological record, but the lack of any other projectile point focuses attention in that direction.

A very large rock shelter has been located at GvJm 46 immediately south of the excavated area. Additionally, an exposure of fallen quartz boulders occurs just to the north. Future plans include the excavation of these two features. These excavations will yield information about the differential uses of a single site comprising a sheltered living area and a quarry as well as the food-processing and hide-working area already excavated. This further research will add to our understanding of "Late Stone Age" activity specialization; hopefully, it will also extend our knowledge of the preceding late Pleistocene industry as well.

Acknowledgements. I am grateful to Pitzer College, Trustee Mrs. Harvard K. Hecker, and other friends of Pitzer for their financial support. I thank my husband Dr. Stephen A. Miller and my daughters Laura and Lynne for their field assistance. I greatly appreciate the work in field and laboratory of my students Ann Laurenson, Sheryl Cooperman, and Sheila Kemper. And I am deeply thankful to my colleague, Dr. Charles M. Nelson of the University of Massachusetts, for providing logistics and support in the field. Finally, I extend my gratitude especially to Dr. John Onyango-Abuje, John Kimingich, and the other Kenyans who contributed their encouragement and effort to this research project.

Bibliography.

Gramly, R. M. 1975 Pastoralists and Hunters: Recent Prehistory in Southern Kenya, Ph.D. dissertation, Harvard University.

Gramly, R.M. and G. P. Righmire 1973 "A fragmentary cranium and dated Later Stone Age assemblage from Lukenya Hill, Kenya," Man, Vol. VIII, No. 4, pp. 571-79.

Bibliography (continued)
Inskeep, R. R. 1962 "The age of the Kondoa rock paintings," in Proceedings of the Fourth Panafrican Congress on Prehistory.
Merrick, J. V. 1975 Change in Later Pleistocene Lithic Industries in Eastern Africa, Ph.D. dissertation, Univ. Calif., Berkeley.
Miller, S. F. 1969 The Nachikufan Industries of the Zambian Later Stone Age, Ph.D. dissertation, Univ. Calif., Berkeley.
Nelson, C. M. 1973 A Comparative Analysis of Later Stone Age Occurrences in East Africa, Ph.D. dissertation, Univ. Calif., Berkeley
Van Noten, F. L. 1977 "Excavations at Matupi Cave," Antiquity, Vol. 51.

MALI

R. Bedaux, Institute of Human Biology, State University, Utrecht sends this information:

Archaeological research in the Bani-Niger region (Mali).

8 additional C14 dates (see also N.A. 8, 1976) have been obtained from Toguéré Doupwil (near Mopti) and from Toguéré Galia (near Djenné):

Toguéré Doupwil	section B:	GrN-7943 : 800 ± 45 B.P.
		GrN-8118 : 650 ± 45 B.P.
		GrN-8552 : 580 ± 25 B.P.
	section C:	GrN-7944 : 850 ± 45 B.P.
		GrN-8553 : 675 ± 45 B.P.
Toguéré Galia		GrN-7945 : 800 ± 80 B.P.
		GrN-8555 : 930 ± 50 B.P.
		GrN-8554 :1005 ± 40 B.P.

The earliest occupation of both sites can be dated to the 11th century. The samples GrN-8553- 8555- 8554 are considered too old on the basis of stratigraphy.

A continuity in pottery making tradition from the 11th century to the present can be demonstrated. The pottery shows some affinities to the pottery found in New Buipe (Ghana). No clear evidence for long-distance-trade was found.

Fragments of clay statues were found only in the upper layers and on the surface, suggesting a rather late date for this material. Coffin-jars occur in all layers, from the 11th century onwards to the 18th (?) century. This suggests that Islamic influence did not penetrate far beyond the well-known centres.

Of special interest is a fragment of a lost-wax casting mould at Toguéré Doupwil in a layer dated in the 11th - 12th centuries. The available evidence as to the ethnic origin of the mound dwellers points to the present-day Bozo.

The human, faunal, and floral remains have been analysed. The results of the excavations will be published in the next issue of Palaeohistoria (Groningen).

Colin Flight (Centre of West African Studies, University of Birmingham, England) sends the following report:

Excavations at Gao (Republic of Mali) in 1978

During March 1978, further excavations were carried out at the medieval site of Sané, near Gao, in the Seventh (formerly Sixth) Region of the Republic of Mali. In previous seasons, work had been confined to the Muslim cemetery, at the eastern end of the site. (For an interim report on the first season (1972), see WAJA, 5(1975), 81-90; for a brief note on the results of the second season (1974), see Nyame Akuma, 7(1975), 28-9). This season, it was decided to begin the investigation of an area at the western end of the site, previously unexplored, where a scatter of fragments of baked brick suggested the existence of some important structure similar in style - and perhaps in date as well - to the brick buildings excavated in the cemetery sector in 1972 and 1974. This new structure proved to be very large - too large to be excavated completely within the time available. Its plan, as far as this could be traced, is shown in the accompanying figures.

Structure Q consisted originally of a vast mass of solid brickwork within which, at ground level, was contrived an arrangement of narrow passages. The dimensions of the superstructure (Fig.1) are as yet unknown - there is only one point, towards the west, where we think that we have identified its outer edge - but it must have measured at least 50 m from west to east, and at least 30 m from north to south. Its height must also have been considerable, to judge from the massiveness of the internal features (Fig.2): the wall marked Q1 is almost 2.50 m thick, and so are the square pillars Q5, Q7, and Q11. Even then it still became necessary to reinforce the structure with various 'secondary' walls, wherever this could be done without any of the passages being blocked completely. The 'secondary' features had already been added before the passages were finished off with a thin coat of white plaster, protected, to a height of about 1.20 m, by a dado of red mud.

The date and function of this amazing structure are still uncertain. The bricks of which it was built (at least two million of them, on a conservative estimate) are almost identical with those which were used in the structures already excavated in the cemetery sector. For the primary structure there (structure F) a date of about 1100 may be proposed, though the evidence is only circumstantial, and a similar date seems likely for structure Q. Its function is harder to guess, but provisionally, pending further excavation, we think that it may be interpreted as a royal tomb - the tomb, in fact, of one of the kings whose funerary stelae were discovered in the cemetery sector, inside structure F, in 1939.

At some later date, structure Q was robbed with remarkable thoroughness. Not a single brick was found in place. By this time, fortunately, earth and rubble had accumulated in the internal passages to a height of as much as 1.50 m; and the robbing was carried out with such economy of effort that the plaster facings were left intact, as the bricks were removed from behind them. Thus it was possible to trace the plan of this structure simply by following the lines of red and white plaster that define the edges of the robber trenches. Presumably the bricks were required for some new building project, now very far away.

One cutting was made in the cemetery sector, to answer a question arising from the excavations of 1974. It is now certain that structure F was originally only part of some larger (perhaps much larger) building, the rest of which was subsequently razed to the ground. Here too, the need for further excavation has been demonstrated clearly enough.

The writer would like to express his thanks to the Malian authorities - especially to M. Alpha Oumar Konaré, formerly head of the Division du Patrimoine Historique et Ethnographique - for permission to carry out this work, and to M. Mamadi Dembele for his collaboration in the field. Copies of a more detailed report are available on request. It is hoped to continue the excavations in 1980, on a scale more nearly commensurate with the importance of the site.

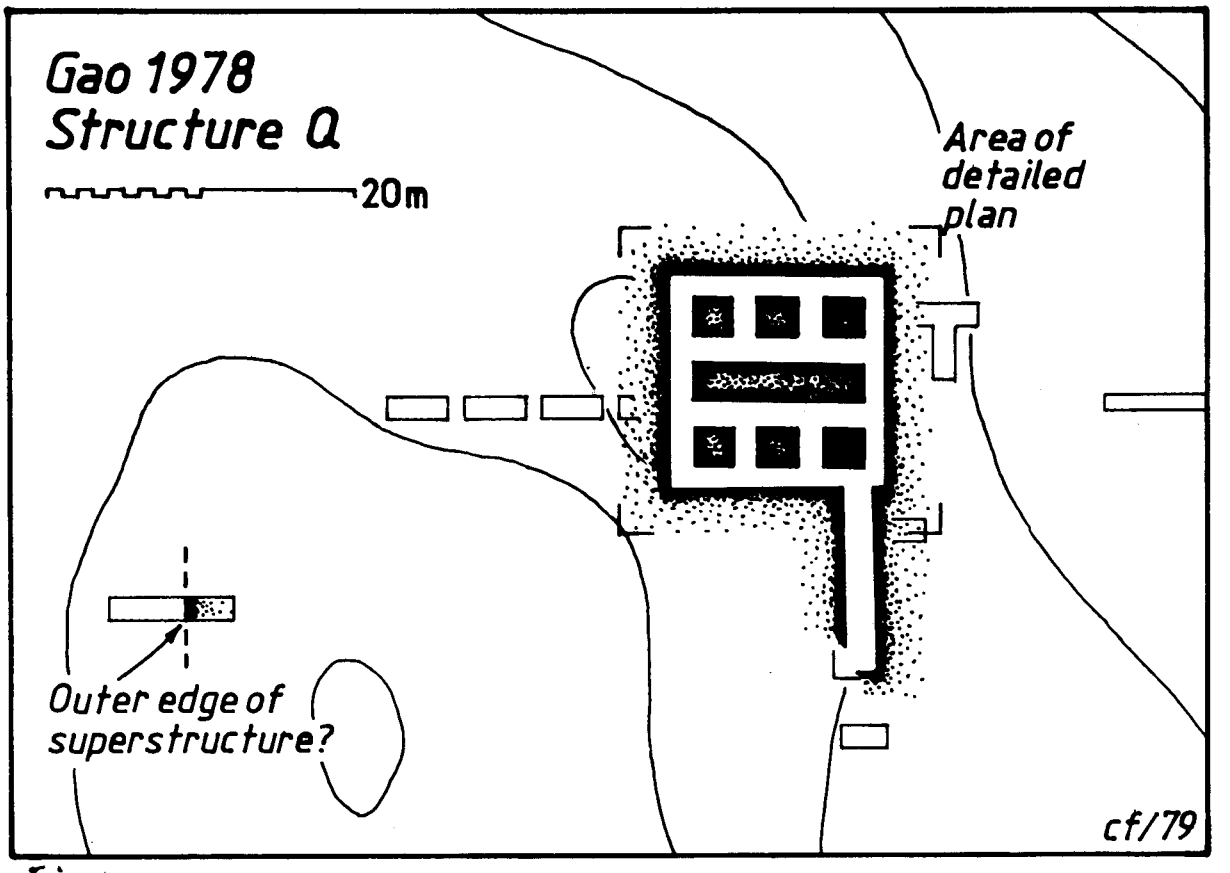
Gao 1978
Structure Q
20m
Area of detailed plan
Outer edge of superstructure?
cf/79

Fig. 1

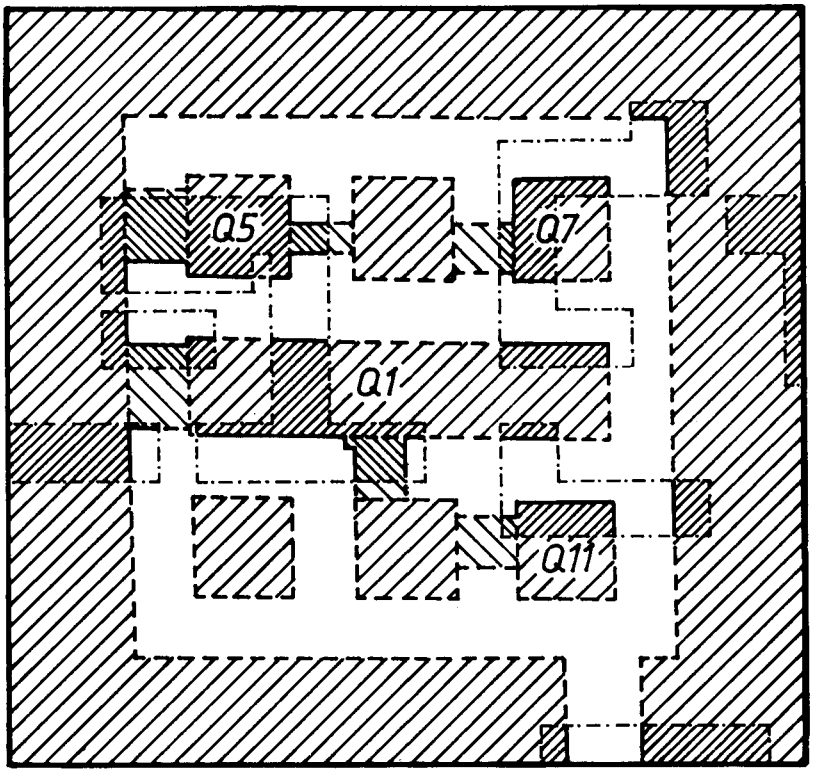
Q5
Q7
Q1
Q11
5m

Fig. 2

Iron working in Mema, Mali, during the Old Kingdom of Ghana.

by Randi Haaland, Historical Museum,
University of Bergen, Norway.

Excavations were conducted in the Mema area during January 1978. The area today has less than 400 milimetre of yearly rain and is marginal both in terms of agriculture and pastoralism There are however extensive archaeological remains in this area, large settlement mounds, some being 7-800 metres in diameter and with cultural debris which seems to be up to 6-7 metre deep, some of these are surrounded by enormous slag remains from iron production, there are also traces of ancient fields. The Mema area is often referred to as the dead delta indicating that in the past this area was part of the Niger delta. The environment then would have been very different from today and could have supported a large population such as the large settlements indicate.

The fieldwork was undertaken with the following objectives:

1) to date these archaeological remains (they were expected to be contemporary with the Kingdom of Old Ghana).

2) to find material which could indicate if the area when inhabited was part of the Niger delta.

3) to collect data which could show if the present environment was the result of human activities (overgrazing, deforestation in connection with the iron smelting).

I will in this paper concentrate the discussion on points 1 and 3.

The Archaeological Material

One site was selected for more intensive fieldwork, this was because of the large slagheaps surrounding the site indicating extensive iron smelting: Mound B. From two other mounds situated a few kilometres to the north and east, charcoal samples were collected from the top layer for dating.

Mound B

The settlement mound is c. 450 metres in diameter and rising c. 4 metres above the surrounding dried out river delta. The mound is rather eroded, especially along the slopes, potsherds, slag, iron fragments and ferricrete sandstone blocks are visible on the surface. In certain areas one can also see red burnt clay, possible bricks but more excavations are needed to test this proposition. One square 2 x 2 metres was excavated on the highest part of the mound, this area was covered by sand dunes and it looked as if these had protected the area from erosion and the settlement debris was therefore expected to be undisturbed.

The cultural debris was 3.1 metres deep and 4 separate cultural layers were found with more or less sandy sterile layers in between.

The occupation debris consisted in all four layers of potsherds, iron fragments (too rusted for identification yet), smaller finds of carnelian and clay beads, and one copper-ring was found on the surface. There does not seem to be much differences in the pottery material from top to bottom, in all layers were found some very distinct flat plates with remains of three finger marks impressed on the inside. Among the osteological material it is interesting to note that fish bones were very numerous, indicating that the now dried out river, was during the settlement, probably part of the Niger branch.

Carbonized seeds and plants were found and preliminary analysis suggests that they are seeds from hack-berry trees (CELTIS INTEGREFOLIA) and from millet.

The deepest cultural layer is 1.6 metres thick. This seems to have been an area where smithing activities took place. This inference is based on the many finds of cylindrical shaped slaglumps, some of them being 20-25 centimetres in diameter, and the cultural layer being grey black from abundant ash and charcoal.

Charcoal was used for C.14 datings. The deepest cultural layer (layer 4) has got a date of A.D. 805 ± 115 (T-2827) and the top layer (layer I) has got a dating of A.D. 1100 ± 70 (T-2826), both datings are MASCA calibrated. It seems clear that the occupation of the mound lasted for three centuries and that the settlement was contemporary with the period when the Kingdom of Ghana was in power and controlled the area. It should also be mentioned that the dates from the top layers of the two other mounds gave the following results: A.D. 925 ± 95 (T-2828) and A.D. 1155 ± 75 (T-2829), these are also MASCA calibrated.

From Mound B were found some graves, these were localized at the southern outskirt of the site. They were marked on the surface by blocks of ferricrete sandstone, usually set up in a circle with one block in the middle. Buried under one such structure in an oval depression was found a complete pot with scattered fragments of human remains (probably burnt).

Iron Working

At the northern outskirt of the site were found the remains of the bottom of an iron smelting furnace. This was a bowl like depression clay lined with a diameter of 60 centimetres and 50 centimeters deep, the clay lining being c.15 centimetre wide, large slaglumps with impressions of what seemed to be stalks and seeds of millet were also found. This structure seems to be the remains of

a furnace of the nonslag-tapping type, similar to what was found at the Taruga site in Nigeria dated to 4-200 B.C. (Tylecote 1975:1-5) and still used among certain tribes as for example in west-Sudan (Haaland R. in manuscript).

Remains of the iron furnace itself was not found but broken pieces of tuyers. It is however likely that this was a shaft furnace made of clay. Based on the diameter of the clay depression I would expect the height to have been around one meter (Tylecote, R.F. 1975:5).

The enormous slag remains surrounding the site c. 60,000 square metres, must have required a large forest off-take for making charcoal used in the iron smelting. I would also expect that the people in the area had to be selective in their exploitation of the trees used, since only a few types of acacia trees would have given high enough temperature for the smelting of the iron. This would most likely have lead to over-exploitation of the trees and deforestation in the area. I therefore think that the periods of abandonment of the settlement can be seen as related to deforestation. After a period of regeneration of the forest the people moved back to the settlement.

It should be mentioned that the ferricrete sandstone used as raw material for iron smelting was found along the Boulel ridge running just north of the site.

By extensive travelling in the Mema, it was evident that a large scale iron production had been maintained in the area. Based on these data I suggest that the iron production was not only for local use, but was probably circulated in a wider area. Since the production is contemporary with the Ghanaian Empire, it is reasonable to suggest that it was used by this political organisation. It has also been mentioned that the kings of Ghana controlled the iron supply.

Reference:

Tylecote, R.F.
1975 The origin of Iron Smelting in Africa in:
West African Journal of Archaeology no.5
pp. 1-9.

NAMIBIA

Mr. L. Jacobson, archaeologist at the State Museum, Windhoek, is engaged in the following projects:

a) Neutron Activation analysis of potsherds

This work is being undertaken in conjunction with G. Boulle and M. Peisach of the Southern Universities Nuclear Institute. In addition to NAA, a new method of analysis, particle induced X-ray emission (PIXE) was also used. This method measures a different suite of elements and was used to check the NAA results. Preliminary work on a widely based sample of sherds have yielded interesting results which could throw light on prehistoric patterns of exchange and mobility. A new method of trace element pattern recognition was also used in the study.

b) Late Stone Age Ecology and Subsistence

The main focus of research is dealing with the problem of Later Stone Age subsistence patterns. Thus far, excavations are taking place in the Outjo District and the Naukluft Mts though other areas will soon be investigated.

c) Coastal Middens

A final field trip is planned for the excavation of middens at Wortel near Walvis Bay which have been threatened by roads and salt pan development.

Mr. J. Kinahan, also of the Museum, is working on the archaeology of the Windhoek District and has located a number of interesting sites. His other interests are the classification of glass beads and the physical examination of pottery.

In addition to these projects, the Zerrissene project has been completed and the Brandberg work is being written up. In this connection it should be mentioned that Mr.E. du Pisani (now at the National Museum, Bloemfontein) has published the results of his work on the settlement and subsistence patters of Dama living in the vicinity of the Brandberg. This work will be important in the evaluation of the archaeological remains of earlier Dama settlements in the Brandberg and Zerrissene areas.

NIGERIA

Archaeological Excavations at Okochiri, Okrika, 1976-1977

by Dr. Nwanna Nzewunwa, Department of History,
University of Jos, JOS, NIGERIA.

The archaeological excavations at Okochiri in the Okrika Local Government Area of the Rivers State of Nigeria in December 1976 and January 1977 were undertaken principally as part of the fieldwork requirements. It was intended to recover cultural and economic data to complete a Ph.D. thesis in archaeology for the University of Cambridge.

Like most other archaeological researches it was geared to isolate cultural sequence, establish chronology for the region, recover faunal and floral remains, trade elements and chart resource zones for the reconstruction of past economic life.

The site of Okochiri (7^{o} 08'E; 4^{o} 42'N.) had been reported by Professor E.J. Alagoa as important in the settlement and migration history of the eastern Niger Delta. It is said to be the oldest mainland settlement of the people of Okrika island. The present generation call it Olomu Ama (old town).

Though situated in a dry upland environment with a light forest vegetation and numerous oil palm trees and plantains, the present inhabitants of Okochiri are riverine oriented in their economy. It is inhabited by a handful of people who live mainly on the resources of the Oko river though such plants as plantain, cocoyams and cassava are cultivated.

Okochiri is, archaeologically speaking, a shell midden site. It is about $6\frac{1}{2}$ km southeast of Okrika Island, 15 km southeast of Port Harcourt and is directly fronted on the south by the Oko River (Oko Toru) which joins the Okrika Creek to empty into the Bonny River further south. It shares boundaries with the yam farms of the people of Eleme.

The shell midden site of Okochiri has been under constant pillage by people from Okrika Island who carry away boat loads of earth and shell for reclaiming land for building purposes. This has led to the destruction of a good part of the main mound complex and may lead to its eventual obliteration.

The excavations were undertaken with the assistance of Dr. F.N. Anozie who spent a few days with the team. Other members

of the team included Mr. T.T.D. Green, some museum staff of the Rivers State Council for Arts and Culture, and a work force recruited from Okrika.

Okochiri is a huge midden complex comprising ancillary middens with a peak of over 5 metres at some points. The physical excavation lasted between 27th December 1976 and 15th January 1977. Within this period four test pits of two square metres each were opened in spits of 15 cms. The pits ranged from 70 cm to 315 km in depth.

Various methods and techniques were adopted in the excavation as thought best to satisfy our research objectives. Some of these need not be mentioned here. Pick axes and trowels were used when necessary while wet-and dry-sieving were also applied.

The middens were composed mainly of oyster shells though other shells like periwinkle and Arca were also represented. A large quantity of animal and fish bones were also recovered. The study of these bones has reached an advanced stage.

Pottery materials were recovered in substantial quantity. These have been studied and their results will be made available in future.

Shell and charcoal samples for radiocarbon dating were also taken. Soil samples for physical, chemical and palynological analyses are receiving attention at the hands of various specialists.

Because of the nature of our research orientation we also took fifty-two column samples from various parts of the site each weighing about 3 kg. These are expected to act as a control on our sampling procedure.

Miscellaneous materials included palm kernels, and a few fragments of metal from the upper layers of the fourth test pit.

Apart from the bowl of a factory-made smoking pipe and an iron manilla, both surface finds, no other exotic materials were recovered in the excavation. This lack may be an indication of the age of the site, including the time of its initial "abandonment" or of its occupation pattern.

The foregoing is a tentative statement of research in progress. Details of the results and analyses will be made available in due course.

The Occurrence of Waisted Stone Adzes/Axes in Eastern Nigeria

by: V.E. Chikwendu, Department of History/Archaeology, University of Nigeria, Nsukka.

Waisted stone adzes/axes have been collected as surface finds since the first few decades of this century. Recently they have been recovered in stratified layers during archaeological excavations.

Stone implements in the former British Cameroons have been mentioned by two previous writers. Migeod illustrated some of the artefacts which he found while passing through Bamenda in 1923. He described them as "palaeolithic" - meaning only that the tools were not ground or polished. Jeffreys published a series of "neolithic implements" from Bemenda in 1951. He illustrated eleven stone tools, most of which are 'waisted ' and therefore suitable for hafting. Some were ground, others only flaked; but the differences was thought to be of functional rather than chronological significance. Jeffreys also refers to similar material which he had found some years earlier in Calabar Province of Nigeria (Jeffreys, 1951, 1964). A more detailed description of material from Sabga was published recently by the same author.

In 1972, Hartle undertook an archaeological survey of West Cameroun motivated by three factors. The first was his inability to return to the University of Nigeria where he was the sole archaeologist from 1964 as a result of the Civil War. The second was to find comparative material for the stone implements which he recovered from the Ezi-Ukwu Ukpa Rockshelter in Afikpo in 1966. The third, I imagine, was to check out Jeffreys claims with regard to the 'waisted' stone axes/adzes from West Cameroun. Hartle located three sites, the most important of which, in relation to Afikpo, was in the Ndop plains east of Bamenda. Among the surface finds, he recognized two broad types of tools, polished and unpolished. He reported that the tools have waists and could have been hafted. He pointed out that his finds were not different from the other surface finds which have been reported from the Bamenda area of West Cameroun (Hartle, 1967).

The most extensive excavation undertaken in eastern Nigeria, which yielded 'waisted' stone adzes/axes took place at the Ezi-Ukwu Ukpa rock shelter in Afikpo and was carried out by Prof. Hartle. The excavation and the survey which preceded it originated in the chance discovery by a student of worked stone artefacts on the escarpment north of Afikpo.

The Ukpa rock shelter proved to have been occupied over a long period of time, providing both protection and defence. The innermost part of the shelter was dry and a semicircular ridge of sandstone boulders enclosed the opening.

In his first report on the site, while excavations were still in progress, Hartle envisaged four archaeological horizons:

1. An upper level (0-6) inches containing fairly recent Afikpo pottery grey in colour and well fired, a stem fragment from an imported clay pipe, a metal bracelet etc.

2. A thin layer (6-12 inches) containing thin, red pottery, poorly fired.

3. A very thick horizon (12-84 inches) containing large, crude stone tools and thick, crudely fired pottery.

4. A possible pre-ceramic horizon (below 84 inches) containing the same stone tools as layer 3. Thus the two last horizons yielded the type of stone tools which we are concerned with in this paper.

At a later stage, however, after the excavations were completed and while analysis of the material was in progress, Hartle revised his interpretation. The suggestion that the lowest levels might be aceramic was by now seen to have been mistaken: "the stone artefacts and pottery sherds are mixed throughout" (Hartle, 1967). He did indicate that there were at least two separate cultural horizons. The upper level, down to a depth of about 12 inches contained near-modern Afikpo pottery - dark, usually black or dark brown or red, hard-fired, and tempered with sand or grit. He did not consider that much if any of the worked stone was associated with this level. Below this, and down to a depth of 126 inches, was a second horizon containing fairly similar material throughout. The pottery is of "light brown colour, thick, very poorly fired and has temper materials of sand and, in many cases, seeds". Among the stone artefacts, Hartle recognized various types of tool: knives, balls, scrapers, and hoes. Most of the hoes are waisted.

Radiocarbon dates for Ukpa rock shelter were received in 1968 (Table 1). Apart from showing that the lithic material recovered from Afikpo was contemporaneous with Late Stone Age sites in western Nigeria, they also suggest that pottery was known in eastern Nigeria before 3000 b.c.

The material from this site was still being studied when the Nigerian Civil War broke out in 1967. During this war, the

Laboratory of Archaeology of the University of Nigeria was ransacked, and some of the materials from Ukpa rock shelter smashed. Hartle's catalogue of the finds and his field notes were also lost along with other things. Thus, it became difficult if not impossible for him to study and publish the material from Ukpa.

TABLE 1

Radiocarbon Dates for Ukpa Rock Shelter (Hartle)

Lab Ref.	Depth Inches	Age (Year BP)
Gx 0938	120 - 126	4885 ± 140
Gx 0937	108 - 114	3350 ± 95
Gx 0936	102 - 108	3930 ± 80
Gx 0941	96 - 102	3125 ± 95
Gx 0940	84 - 90	2935 ± 85
Gx 0935	78 - 84	2860 ± 65
Gx 0934	66 - 72	2620 ± 380
Gx 0939	60 - 66	1935 ± 80
Gx 0933	42 - 48	2055 ± 85
Gx 0932	18 - 24	2045 ± 95

TABLE 2

Radiocarbon Dates for Ugwuagu Rock Shelter

Lab Ref.	Depth Inches	Age (Years BP)
N-2545	12-18	2580 ± 80
N-2544	6-12	2220 ± 80
N-2546	18-24	3230 ± 90
N-2547	24-30	2920 ± 125
N-2548	30-36	2970 ± 90

In 1973 the present writer was sent by Hartle at the head of a five-man team to survey the Afikpo area. During this survey, many sites were recorded; these included sites in Oziza, Ibii, Ukpa, and in the Ogwugwu valley, northeast of Afikpo. In this valley we recorded five sites from which worked stone and pottery were collected.

In 1975, I excavated two sites in the Ogwugwu valley, one of which is relevant in this context. The relevant site known as

The Ugwuagu Rock Shelter is about 50m long, at the foot of a northward-facing cliff composed of feldspathic quartz sandstone. Altogether four layers were recognized, representing three archaeological horizons. The earliest, horizon C, was encountered only in trench B, where it was represented by layer 4, which was aceramic. Its main cultural content was stone artefacts. Two radiocarbon dates were obtained for this horizon which place it at about 1200 b.c. The second horizon - B - was represented in both trenches by layers 2 and 3. It is characterized by a mixture of crude pottery and a few lithic implements. Radiocarbon dates for this horizon lie between 800 and 600 b.c. The date obtained for sample N-2546 which was encountered in the lower part of layer 3 should be rejected as it is not consistent with the rest of the dates. The last horizon - A - is represented only in trench A by layer 1. It contained better fired pottery and no stone artefacts with the exception of a scraper which was encountered in trench A. The radiocarbon results show that this horizon occupied the last three centuries b.c. It is possible that agriculture was known at this stage, but there is no direct evidence for it. It is also possible that horizon B represents a period of transition from Late Stone Age economy to agriculture.

The most striking similarity between the Ukpa and Ugwuagu material is that most of the stone axes/adzes are waisted. However, polished or ground stone axes are proportionately more numerous at Ugwuagu than at Ukpa. In fact, with one exception, all the stone axes recovered from the aceramic level at Ugwuagu rock-shelter bear evidence of polish. Chronologically, however, the Ukpa material is earlier than the material from Ugwuagu. The radiocarbon dates for Ukpa range from 2935 b.c. to 15 a.d. which makes Ukpa about 1600 years earlier than the earliest date so far obtained for Ugwuagu which ranges from 1300 b.c. to 300 b.c.. However, it must be mentioned that the sterile layer had not been reached in trench B before we were forced to abandon work as a result of shrtage of funds and time.

Hartle mentions the recov ry of waisted stone axes from other areas of West Africa. "One specimen which appears to be similar to my Group II (waisted stone axes) was recovered from the lower levels of the Iwo Eleru site in the Western State of Nigeria. Davies, also illustrates comparable materials from Niger and Ghana as well as from Bamenda" (Hartle 1969). It must be added, however, that while waisted stone axes do occur in these areas, they are found in very small numbers, often in microlithic layers. But in the area under study, the assemblages consist mainly of waisted stone axes, with other types of tools appearing in smaller numbers. For example the Rop rock shelter contained only microliths, as did the rock shelter at Old Oyo. Conversely, the Ukpa and Ugwuagu rock shelters contained only very few microlithis, some of them doubtful,

and not comparable for quantity or quality with the materials recovered from sites in Western Nigeria.

The occurrence of 'waisted' stone axes in the Late Stone Age assemblages of eastern Nigeria needs be thoroughly scrutinized. Jeffreys mentioned that one Mr. Pleas, a one time District Officer for Ogoja, intimated to him that some people in Ogoja were still using stone hoes for making mounds and for other agricultural purposes. The period Mr. Please was referring to was in the first two decades of this century. Could this not have been the Late Stone Age survival of the people's agricultural practices? Shaw in his report on the site of Bosumpra in Ghana mentioned that one of his informants asserted that the short celts which he recovered during the excavations used to be long. It is not very likely that the much talked of Nyame Akuma were actually agricultural implements? Hartle in his report about the 'waisted' stone axes of Afikpo and Abakaliki areas did suggest that the hoelike adzes were frobably used for agricultural purposes. Jeffreys had gone a step further by suggesting that the polished stone axes were used for felling trees and splitting wood, while the flaked hoe-like adzes were used for agriculture. He even illustrated the way in which, he thinks, the adzes or hoes could have been hafted and used as agricultural implements.

If these implements were used for agricultural purposes, and this is my contention too, it means that the Late Stone Age 'waisted' stone axes, or hoes and other microlithic implements associated with them, represented a mixed economy - hunting/ gathering and agriculture - a basic economic pattern which has not changed in the village communities inhabiting eastern Nigeria today. What crops were involved in this early agriculture, we hardly can tell, but ethnography, oral tradition, palaeobotany and linguistics point to the yam as the probable candidate. Thus the 'waisted' stone axes may be the earliest evidence so far, though indirect, for the beginnings of the slash-and-burn cultivation which has been variously associated with the beginnings of vegeculture. It is also interesting that the earliest evidence for the 'waisted' stone axes in Afikpo is dated to about the third millennium B.C. - a date which is consistent with those suggested by other authorities as the probable time when yam domestication begain in West Africa.

- Archaeology in Eastern Nigeria. Nigeria Magazine, 92, 1967, pp. 134-143.

- An Archaeological Survey in West Cameroon. West African Archaeological Newsletter, 11, 1969.

Jeffreys, M.D.W. Neolithic Stone Implements (Bamenda British Cameroon). I.F.A.N. Vol. XIII, No.4, 1951, pp. 1203-1217.

- "Notes on the Neolithic Stone Age Culture of Bamenda", The Nigerian Field. Vol. XXIX, No.1, 1964, pp. 38-41.

RHODESIA (ZIMBABWE)

The following note has been received from Mr.Cooke of the Umtali Museum:

I have had published the following:-

1978. The Redcliff Stone Age Site. Occas. Pap. Nat. Mus. Rhod. "A" Hum. Sci. 4(2) 43-80.

1979. The Stone Age in Botswana: a preliminary survey. Arnoldia Rhod. 8(27): 1-32.

At present I am re-examining and analysing all excavated sites of the L.S.A. in Rhodesia. No fieldwork is envisaged this year.

SOUTH AFRICA

Professor P.V. Tobias sends

Extracts from report on 1978 activities, Department of Anatomy, Medical School, University of the Witwatersrand, Johannesburg.

In palaeo-anthropology, the Department has continued as a centre for research on the evolution of man. The University Council has formally constituted a Palaeo-anthropology Research Group, headed by Professor Phillip V. Tobias. Its close association with the Bernard Price Institute for Palaeontological Research is signalled by his appointment as Honorary Professor of Palaeo-anthropology. Other members of the Group are Mr.A.R. Hughes, Dr.T.C. Partridge, Mrs. Kay Copley, Mr.F.E. Grine, Mr. I.M. Suzman, Mr.A. Morris, Mr. J.K. Lundy and Mr.P. Christie, while Mr. J. Bunning and Mr. E. Maubane are closely associated with its work.

Twelve years of excavation as Sterkfontein have now been completed. During the year, Dr. Tim Partridge's study on the lithostratigraphy of this cave was published in Nature. Access was provided to the deepest levels of the breccia by means of a platform, hoist and steps planned by Professor R.P. Plewman, generously donated by the Johannesburg Consolidated Investment Company Ltd. and installed by Randfontein Estates. The Council has named this deepest portion of the Sterkfontein Cave the Silberberg Grotto in honour of Dr.H.K. Silberberg, who discovered there the jaw of a primitive hyena in the 'forties. This discovery

led Dr.R. Broom F.R.S. to realise that the deposit was far older than he had imagined. These strata are older than that in which the ape-man Australopithecus africanus was found.

The work of the Group has achieved more international recognition during 1978. At a meeting of the Executive Committee of the International Union of Prehistoric and Protohistoric Sciences in Berlin, Tobias was appointed Vice-President of the Commission on Les Plus Anciens Hominides. The Rivers Memorial Medal of the Royal Anthropological Institute of Great Britain and Ireland was awarded to Tobias for his "significant contribution to anthropology" and was presented on 29th June 1978.

The Royal Swedish Academy of Sciences invited Tobias to participate in a Nobel Symposium on "Current Argument on Fossil Man" at Karlskoga, Sweden, in May 1978, to mark the 200th anniversary of the death of the naturalist, Linnaeus. Tobias's two addresses are to be published in the book of the Symposium.

In 1978 the Austrian Academy of Sciences conferred its Foreign Membership on Tobias. He participated in the first meeting of the International Advisory Council of the Louis Leakey Memorial Institute for African Prehistory in Nairobi on 25th November 1978.

Mr. Ivan Suzman, Assistant Lecturer and member of the Palaeo-anthropology Group, visited the Leakey Memorial Institute in Nairobi, where he studied Plio-Pleistocene hominid fossils.

Mr. Fred Grine, a pre-doctoral student in palaeo-anthropology and a Junior Lecturer, visited a number of major European museums where he examined collections of hominid and reptile fossils. His trip took him to London, Cambridge, Paris, Marseille, Munich and Frankfurt. He assisted G.H.R. von Koenigswald in Frankfurt in the description of nearly 100 unpublished teeth of early hominids from Java.

Mr. John Lundy of the Department of Anthropology, Western Washington University, arrived in October as a full-time Ph.D. research student in Palaeo-anthropology. He will devote his thesis to the children of the ape-man.

Dr. O. Davies has been studying the shorelines of the Last Interglacial in the South Cape. He has found stratified evidence that an industry of Middle Stone Age type was established before the peak of Eem I (usually dated about 125000 B.P.); and just after the peak there appear small bifaces and flakes, suggestive of transition from the latest Acheulian to the Middle Stone Age.

In the next shoreline at 18 m there is only Acheulian material, rolled and unrolled. This shoreline must date around 200000 B.P.

Dr. Davies was awarded an honorary doctorate of the University of Natal on 2nd April 1979.

Mr. Matiyela of the University of Cape Town sends this note on his activities:

1. Port St Johns Iron Age sites.

In June 1978 I conducted a preliminary archaeological survey on three Iron Age sites near Umngazi river mouth in Port St Johns in the Transkei (31°40' S; 29°25' E.) with good results. Material hitherto unknown in the region was brought to light. Three different Iron Age pottery traditions - apparently of the Early, ?Middle and Late Iron Age - were found in these sites. Two more promising discoveries were made. These comprise evidence of iron smelting and a hut floor of a probable Middle Iron Age date. The iron smelting practice was indicated by many slag and tuyere fragments. The hut floor was well preserved and consisted of well baked clay resembling Iron Age floors found elsewhere, especially the Highveld. These two features are the first ones of their kind to be found south of 31° latitude in the continent.

A variety of decorative motifs was found in the pottery of the Early Iron Age. The sherds were scattered on the surface of deflated sand dunes - more must be buried under the moving dunes.

Further research is now proposed to investigate these sites and their resource environment. The project aims at: (i) locating and exposing some more hut floors of this village to establish the settlement pattern; (ii) finding the furnace to study smelting techniques and products; (iii) locating the mine - iron ore mine - and re-opening thereof for studies of prehistoric mining techniques; and (iv) excavation of in situ Early Iron Age material to find associated pottery and datable material.

2. Later Iron Age settlement in the Eastern Cape

Since 1976, I have been engaged in investigation of the Later Iron Age settlement of the Eastern Cape. Several sites were excavated but did not produce quantitative material. The scope of the enquiry was changed to be ethnoarchaeological instead of being

traditional or conventional. I am presently trying to synthesize the fragmentary evidence. I am hoping to complete the thesis by early next year.

SUDAN

British Institute in Eastern Africa

Nicholas David (U.C.L.), Jill Goudie (B.I.E.A.) Paul Harvey (Cambridge U.) , Patti Langton (Pitt-Rivers Museum, Oxford), John Mack (B.M.), Alex Opira-Odongo (B.I.E.A.) and Amum Tor (Sudan Antiquities Service) write:

This year's combined archaeological and ethnographic expedition to the southern Sudan followed up Dr.D.W. Phillipson's survey of 1977-78 and was in the field from 14 January to 28 March 1979. Our aim was to sample the past and present cultural variety of the area by obtaining archaeological sequences and ethnographic data from at least three localities differing in their environments and in the cultural-linguistic affiliations of their peoples.

This brief account is being written less than a week after our return from the field and must be considered even more provisional than most statements in Nyame Akuma.

The first site tested was the Jebel Tukyi rock shelter (5°19'N.; 30°27'E.) at Lui in Mundri district of Western Equatoria. The shelter is in one of the many inselbergs that break the surface of the ironstone plateau. In most places the ironstone is overlain by a few metres of ferruginous soil. Widespread gullying is exposing ironstone and Basement Complex rocks below these soils. Annual rainfall is 1100-120mm. and the vegetation cover is one of thick savanna woodland.

A small talus leads up from the plain to the shelter which is 20m. long by 11m. deep within the main dripline, rather under half the area being taken up by a slopping shelf of rock. A total of 7 sq. m. were excavated in whole or in part, the gneiss bedrock occurring up to 1.1 m. beneath the surface. Three phases can be provisionally recognised:

A. Ceramic Late Stone Age (45 cm.) in gneiss rubble within a clay matrix containing numerous concretions. The pottery is characterised by comb punctations and grooving. The rich quartz component appears typically undiagnostic.

B. Iron Age (32 cm.) in a matrix less stony, less clayey and less affected by concretions. Iron slag is present and the pottery is mainly decorated with plaited fibre roulettes. This phase may be broadly ancestral to C.

C. Recent Iron Age (10-20 cm), being the remains of probably nineteenth century smelting in bowl furnaces by the Moru and of smithing and other activities that continue in the shelter up to the present. The pottery is decorated with plaited fiber roulettes.
Shell and bone were well preserved and it is possible that cattle-breeding may be a feature of Phase A.

Logistic constraints contributed to the ethnographers' decision to carry out intensive rather than general survey work on Moru ethnohistory and contemporary technology in its socio-cultural context. Their two weeks of fieldwork have added substantially to knowledge of this virtually unstudied Central Sudanic people and complemented that of the archaeologists in many areas, besides raising the question of whether the Moru were not first displaced southwards into their present area before suffering Azande and other incursions into their territory.

The team then moved to Wun Rok (Wun Rog) (9°0'N.; 28°21'E.) 160 km. by road north of Wau, the capital of Bahr el Ghazal province. G.W. Titherington (Sudan Notes and Records VI (1923): 111-112) had noted numerous artificial mounds in this general area. Although the absence or poor state of the roads prevented extensive survey, 20 mounds were located and many others reported in this and neighbouring regions forming part of the Dinka toich or seasonally flooded grassland. Flooding is due to local rainfall of 950-1100mm., concentrated in the period May-October, and the discharge of torrential streams and a few larger rivers draining northwards from the ironstone plateau. During the dry season flow is concentrated in slow-moving rivers like the Lol, on which Wun Rok is located, while in the rains overbank flooding of the impervious clay soils of the toich brings further deposition of fine-grained sediments.

The village mounds visited were generally grossly sub-circular in plan, from 60m. - 250m. in diameter and up to 6m. high (though Titherington claims mounds up to 40 feet high from further east). Depressions around the sites result from digging clay for building materials and retain water well into the dry season. Dhang-rial, the site tested, lies 1 km. north of Wun Rok and is a flat-topped mound, 170m. in diameter with 2.7m. of archaeological deposits overlying progressively clayier material, near the surface of which were found scattered rare comb-decorated sherds. However the builders of the mound, identified by the Dinka Tuich

as the Luel, were a cattle herding people who had knowledge of iron (though on the basis of our very limited sample its use would appear to have been restricted to ornaments). The pottery is mainly plain or decorated with twisted fibre roulettes. In the early part of the sequence the dead were buried in the central part of the site where we opened a trench 4.5m. long (later reduced to 2.25m.) by 1.5m. Graves were hard or impossible to detect in the heterogeneous clayey deposits, but seem to have been shallow trenches, sometimes containing more than one individual. Bodies were typically lain on the right side in an extended position with the head to the west. Unlike the Dinka they did not practise dental evulsion and were buried wearing various iron ornaments and also necklaces of shell or bone beads. In the middle of the sequence there is evidence of the mass disposal of at least 14 adults, who although wearing their ornaments were only very roughly laid out and covered with a little clay and earth. Burials then ceased in this part of the site which, from the homogenesation of the deposits, would appear to have been thereafter used as a cattle pen. Another trench, 3m. by 1m., near the edge of the mound gave a sequence showing an almost uninterrupted series of hardened floors.

The cattle, on the evidence of numerous crude figurines, were until the later stages of a humpless variety that must predate the appearance of Zebu in this part of the Sudan. Indeed the introduction of the new breed may have encouraged a change in settlement pattern. Together with the use of bone tools and the rarity of iron, the figurines suggest that part at least of the Dhang-rial sequence must extend back into the first millennium A.D.

In view of the contrast between the prehistoric settlements and the present Dinka pattern of loose aggregations of family homesteads, P.L. and J.M. investigated this aspect of Dinka culture in some detail, including their current use of the mounds as wet season cattle camps and as sacred places, besides continuing their enquiries along lines developed among the Moru.

Our third locality lies in the dry acacia woodland of Eastern Equatoria some 35km. southwest of Kapoeta. J.G. directed testing of Nilum Lokabulo, a shelter in the small Kales inselberg ($4^{\circ}32'$N.; $33^{\circ}19'$E.), while P.H. and N.D. surveyed the locality, finding only ex situ traces of the Acheulian but widely distributed evidence of M.S.A. technology including an extensive surface site on the right bank of the Kugulu torrent ($4^{\circ}30'$N.; $33^{\circ}20'$E.). Study of sediments gave some indication of late Quaternary environmental changes. Following major erosion that left occasional perched ironstone relicts, up to 2m. of soil developed over the granite bedrock which contains massive and resistant quartz veins. Quartz was used as raw material in the Stone Age

together with diorite, a dyke of which was located. The M.S.A. at Kugulu overlies the first series of deposits. The general topography, sections in gully walls and the nature of stone scatters suggests that the M.S.A. is contemporary with or was closely followed by at least one episode of sheetwash and gullying which contributed to the localisation of artefact scatters. This was followed by a period of increased and less seasonal rainfall, denser vegetation cover, reduced erosion and infilling of gullys with fine-grained deposits. This period may be tentatively correlated with part of the main Holocene wet phase. The return to drier conditions, with a present day rainfall of 750-1000mm., has reactivated gullying along the drainage lines followed during the previous erosive phase and removal of thin grey soils on the interfluves has exposed concentrations of worked and natural stone. One of these concentrations, of uncertain date or dates, next to the eastern end of Kales was mapped and sampled.

The sequence in the shelter, which is some 35m. long and 8m. deep within the main dripline, appears to correlate with the later part of this sequence. A small test, 2m. by 1m. allowed recognition of three phases in a stratigraphy that also occurred though much compressed in a higher part of the shelter.

A. Preceramic L.S.A. (55cm.) in reddish deposits containing much granite disintegrating in situ and capped by a definite soil. The flaked stone comprises mainly quartz with some diorite and other exotic rocks.

B. Ceramic L.S.A. (50cm.) in a grey silty matrix with numerous concretions in its lower part. The stone component does not seem to change and the pottery is mainly comb-impressed. Phases A and B are likely to belong to the main and later parts of the Holocene wet phase.

C. Iron Age (35cm.). This probably recent level is composed largely of lenses of burnt and unburnt dung. A little pottery is present and includes examples of both twisted and plaited fibre rouletting. There do not appear to be any impressions of carved wooden roulettes that probably constitute the most common group of motifs on modern and recent Boya pottery.

Paucity of English-speaking informants among the Boya, a small group of Plains Nilotes presumably of the Itunga cluster, caused the ethnographers to vary their approach. P.L. lived for a fortnight in a Boya village while J.M., assisted by A.V.O. Hatulang, collected comparative data on the related Didinga, Toposa and Lotuko. The peoples of the south-eastern Sudan are some of the least known in the whole of Africa; it is interesting that some of the smaller groups have traditions that until compara-

tively recently they were hunter-gatherers. Analysis of the Nilum Lokabulo fauna will certainly throw light on the prehistoric economies of this region.

In conclusion, the multi-disciplinary nature of the team has enabled a promising start to be made in reconstructing environmental sequences and culture history. In spite of the difficulties in carrying out a succession of excavations and ethnographic studies up to 2000 road km. from the Nairobi base, the results of this season's work fulfil the expectations raised by Dr.Phillipson's survey.

Throughout the expedition the team received the fullest cooperation of national, provincial and traditional Sudanese authorities and were given generous assistance by representatives of UNICEF, ACROSS and other institutions. Selected samples from the excavations and collections of material culture will be studied in Britain and Dr. P.L. Carter will be responsible for analysis of the faunal remains.

Friedrich W. Hinkel reports:

Work at the Northern Group of Pyramids at Begrawiya (Meroe) and at the historical buildings of Suakin, 1977/78

In accordance with the agreement between the Directorate General of Antiquities and National Museums and the Academy of Sciences of the GDR I spent another season from November 1977 to April 1978 at Meroe and Suakin where our restoration and reconstruction work continued.

A. Meroe

Actual work at the pyramids at Begrawiya lasted from 4th December 1977 to 23rd February 1978 and consisted mainly in the reconstruction of offering chapels and pyramids of the last Meroitic kings.

Work was carried out on the following pyramids:

Beg. N 25: The remaining relief blocks of the chapel were dismantled, numbered and photographed before their re-erection on a newly made foundation. A number of fallen blocks were found buried under the sand in front of the pylon and were incorporated in the reconstructed walls. The exterior brick work of the chapel

together with the work on the pylon and the roof was completed leaving only the plastering for next season. The entrance to the chapel was closed by a wooden door.

During excavation work in front of the pylon the drums, capitals and bases of two nearly complete columns of the original portico were secured and erected.

The pyramid is normally attributed to the last meroitic ruler and according to the relief scenes beongs to a king and not to a queen as recently suggested.

Beg. N 26: Work similar to the one described for Beg N 25 was carried out. We were able to incorporate many newly found relief blocks in the reconstructed chapel walls. The scenes of the north and west wall are now nearly complete. In addition,the pyramid proper was reconstructed. Plastering work for the pyramid, the chapel and pylon is earmarked for next season.

Two bases and some column drums of the portico as well as the remains of the enclosing walls of the yard were found in front of the pyramid.

Beg. N 27: Those parts of brickwork which were left unplastered during the first season were plastered and work on this pyramid is finished. Some explanatory boards with information for visitors about the pyramid and the scenes of the chapel walls were exhibited inside the chapel.

Beg. N32: The pyramid, the chapel and its pylon were reconstructed on newly made foundation. The relief blocks of the chapel are almost complete.

In studying and drawing the scene of the west wall of the chapel it was observed that the roof was originally vaulted - most probably using burnt or mud bricks. A new vault similar in shape to the old one was therefore constructed to roof the chapel. At the entrance to the chapel a wooden door was installed to protect the relief blocks against defacement.

In the vicinity of the pyramid we found the altar block - split in two parts - and some fragments of the faience offering table.

Beg. N 19: During this season's work the remaining three stone layers of the plinth were dismantled, new foundations were made and the plinth was then reconstructed except for the west wall where the original stones were missing. The work on the foundation allowed us to examine the staircase to the burial chambers which was left unexcavated by Dr. Reisner's expedition in 1921/22.

Besides some pottery fragments we found in the upper part of the staircase the skeleton of a horse which apparently was sacrificed when the staircase was closed and filled after the burial.

During the season at Begrawiya another 250 fallen relief and architectural blocks of different pyramids were numbered, measured and photographed to facilitate the assembling of these blocks to scenes on paper for future reconstruction work.
In 1976/77 we found a well preserved and unusual shaped stone near Beg. N 27 which gave the clue to the so far unknown form of the capstones of meroitic pyramids. The fragment of a similar stone was also found in the vicinity of Beg. N 26 and two more well preserved samples and the fragment of a third one were discovered in the western group of pyramids. Another type of capstone - probably an earlier one - was found by Miss R. Bradley (Calgary Univ. expedition, Meroe Town) in the southern cemetery. Another capstone of the second type was recorded in the northern group of pyramids.

Thanks to the help of Miss K. Spirydowicz (Calgary Univ. Exp.) the so far only known samples of painted and decorated plaster from Meroitic pyramids were carefully removed from the south face of pyramid Beg. N 51 and brought to the Sudan National Museum at Khartoum.

B. Suakin

Work at Suakin was resumed at the end of March 1978 and continued for 5 weeks.

Finishing work comprising plastering, flooring, painting, etc. was completed at the Guard Room near the Main Gate to the island. Our work concentrated this season on the Hanafi Mosque where recent destruction, especially on the pillars had endangered the whole structure. The 3 wall parts surrounding the open yard at the southwest are now reconstructed and new doors at two entrances in the walls are installed. The two storied building in the southern corner (store room and khalwa) was reconstructed and roofed. Repairwork was carried out on the masonry of the minaret and the surface of the walls of the staircase was cleaned from inscriptions and charcoal scribblings of recent visitors. In the prayer hall work started to clean the walls from thick layers of crusted and salted layers of paint and a number of geometrical decorations carved into the original plaster were laid bare.

Cleaning and chemical conservation work was started on some of the old cannons and mortars in front of the former Governor's Palace and the Gate to the island.

In spite of the importance of the special architectural style of the buildings at Suakin there are no exactly measured drawings of the houses available. Measuring and drawing work was therefore started and included the Hanafi Mosque and a house of Turkish style on plot No. 250. Another survey compiled information on all still existing architectural features, as mashrabiyas, window grills, door-hoods, etc.

THE INFLUENCE OF MAN ON THE ECOSYSTEM

Case study, El Kadero and El Zakyab sites, Central Sudan

By A. Tigani El Mahi

Zoological Museum, University
of Bergen

The excavations of El Kadero and El Zakyab sites in Central Sudan gave information on pastoralism during prehistoric times (5000 B.P.). Both sites are located between 18 - 19 km from Khartoum North, on the eastern bank of the river Nile and the distance between them is 4 km. El Zakyab lies 3 km from the main course of the river Nile, while El Kadero lies further to the east from El Zakyab site.

The two sites gave the earliest evidence of cattle, which was present in the osteological remains of both sites.

The influence of man on the ecosystem is encompassed by his means of production, his behaviour and activities to satisfy his needs. In the present case two points should be considered: (1) the time span of mutual relations between man and cattle, starting at the beginning of domestication outside the area of Sudan and its introduction into the area 5000 B.P., and (2) the dependency of cattle on man for the provision of food, water, protection etc., and the resultant loss or minimization of the ability of domestic cattle to survive independently of man.

Cattle as a newly introduced species in the ecosystem of El Kadero and El Zakyab must have experienced predation by carnivores, which were represented in the osteological material of both sites. Odum (1971) stated that predation is a severe interaction, when it is of a recent origin, or if there have been sudden or temporary changes in the ecosystem. As for changes in the ecosystem of the area see (Tigani El Mahi, A., Nyame Akuma, No. 13, November 1978). Since cattle were newly introduced into the area, there too the interaction was a recent one. Thus it is apparent that the two causes of severe predation were experienced in the ecosystem.

Krzaniak (in press) postulated that the large quantity of osteological remains of carnivores found indicates the deliberate hunting for their skins. The writer, however, consider this as a minor factor influencing the high frequency of carnivores remains to be found on these two sites. In communities practising a similar economy, emphasizing a pastoral mode of production, as for example among the Nuer, although skin of carnivores play a role in distinguishing the power of the leopard skin chief, the main factor determining the hunting of carnivores is to protect their live stock. It is a reduction of the effect of a biotic limiting factor, "enemies", which shows the influence of man in the ecosystem. By hunting the carnivores, the inhabitants of El Kadero and El Zakyab reduce its population density in the area. Also it is possible that a "zariba" was in use as well as a careful guarding during day. These precautions reduce the frequency of contact between predators and prey. For the loss of the prey population depends on the frequencies of contact with the predator population (Slobodkin 1961).

Another indicator of the influence of man in the ecosystem can have been in the seasonal movements. The seasonal movement from the dry seasonal site El Zakyab to the rainy season site El Kadero or generally the seasonal movements (Haaland 1978) involve different motivations. Beside seeking a sufficient supply of water and grass and avoiding the danger of the flooding river, the writer adds another factor, "enemies". Although there can be no evidence for the effect of a fly, for example surret (Tabanidae), this possibility must be taken into consideration.

Leading the domestic stock to the optimum areas for grazing and watering (seasonal movements) means that "food" as a biotic limiting factor was controlled. This is another influence of man on a biotic limiting factor which is a decisive factor in ecosystems.

Also secondary artificial selection within the primary artificial selection (domestication) based on selecting certain animals for butchering, breeding and probably keeping the young individuals, would have had profound effects on the ecosystem due to the compensatory adjustments which occur by natural selection (Odum 1971).

References:

Haaland, R. (1978) A paper presented in the Nubian symposium, Cambridge (in press). "Seasonal variations Among Neolitic sites in C. sudan".

Krzyzaniak, L. "The Neolithic of the Central Sudan" (as a chapter in J.D. Clark ed., palaeoecology and Archaeology of the Central Sudan, Academic press (U.S.A.)).(In press).

Odum, E. (1971) "Fundamentals of Ecology", 3rd ed., Philadelphia, Saunders.

Slobodkin, (1961) "Growth and regulation of animal population", Holt, Renehart and Winston, New York.

*) The writer is much indebted to NORAD for supporting this research.

Report on the 1979 season in the Sudan.

by Randi Haaland, Historical Museum, University of Bergen.

Fieldwork was conducted in February this year, by Ali Tigani El Mahi and myself. The research was divided into two parts:

1) excavation of a pit, 4 square metres, at El Shaheinab, to collect material for a new date for this site.

2) surveying at the east bank of the Nile in the area surrounding the Kadero and Zakiab sites, to find new Neolithic sites, especially smaller herding camps.

The result of the El Shaheinab excavation was as follows:

A pit was excavated on the north-western part of the site (two square metres at Q-87 and P-87 according to Arkells grid system). The settlement debris in Q-87 was undisturbed and 60 cm deep, while P-87 was disturbed by later burials. Shells were collected for dating from a depth of 10 centimetres (later 1) and a depth of 50 centimetres (later 5) in Q-87. The dating of layer 7 is 5300 $\pm$ 100 B.P. and layer 5 is 5500 $\pm$ 100 B.P. (both dates were done in Trondheim, Norway). These dates confirm Arkells previous dates of the site, and they were later than I had assumed. I have earlier suggested that a date for El Shaheinab would probably be 6000 B.P.

As regards the surveying one small site was found, containing quartz artefacts and one convex scraper typical of the Kadero and Zakiab sites, which could have been a small herding camp. The site is situated on the plateau c. 6 kilometres east of Kadero, there was however no organic material which could be used to date the site. 3 larger Neolithic sites were found on the alluvial plain north and south of Kadero. These sites were probably base sites of the same type as Kadero.

Sudan

In the item ' Some Ecological Effects of the Introduction of Cattle to the Central Sudan' by A. Tigani el Mahi in Nyame Akuma' 13. (1978), 36-38, the key to the models was carelessly omitted by the editor who had to re-draw the original diagrams.

These keys should have been as follows:

Model I:

— — → high seasonal flow of energy (dry season).

——→ high seasonal flow of nergy (rainy season).

Model II:

——→ high flow of energy or dependence on the species.

— — — → low flow of energy or dependence on the species.

And the whole of model II should have been surrounded by —•—• indicating aquatic habitat.

My apologies to author and readers - P.L. Shinnie. But please do your drawings in a form that can be reproduced without re-drawing - please see Notes to Contributors in Nyame Akuma no.13, (1978), 2.

Mr. Tigani el Mahi also asked particularly that I should include his two non-specific references which using editorial discretion I had omitted. I have several times pointed out that Nyame Akuma notes being of a non-formal kind do not normally require references, but in this case I am acceding to the request:

Emerson, A.E. (1949) in "Principles of animal ecology", Saunders, Philadelphia.

Watt, K.E. (1966) in "Systems analysis in ecology", Academic Press, New York and London.

TANZANIA

Dr. Masao of the National Museum of Tanzania writes:

There is not much news except that my thesis "The Later Stone Age And the Rock Paintings of Central Tanzania" is being published by the Frobenius Institut and should be out by February, 1979. Orders for copies should be sent directly to the Frobenius Institut, 6 Frankfurt (Main), Liebigstrasse 41, W. Germany. Perhaps I should also mention that last year I conducted a quick survey at the Mtera Reservoir Region with the view to establishing the archaeological potential of the area before it is flooded. A preliminary report describing the archaeological sites and finds, and containing recommendations for subsequent salvage work has been published in TANESCO's "Great Ruaha Power Project" series.

Mr. Mehlman of the University of Illinois writes:

I have spent the past several years in Tanzania conducting research as follows:

a) Nasera (Apis) Rock-- shelter near Olduvai Gorge described by L.S.B. Leakey as containing sequence from "Developed Levalloisian" through "Proto-Stillbay","Stillbay", "Magosian" to "Wilton". Re-excavation indicates lower assemblages of broadly Middle Stone Age aspect overlain by an industry (not the "Magosian") in some aspects intermediate to those of Late Stone Age type; above this latter industry, dated at 22,000 B.P., are a series of LSA assemblages ranging in age from circa 20,000 B.P. A series of spits through the uppermost metre of deposit suggest a progression of pottery types from Kansyore ware (? 5400 B.P.) through Narosura ware to that which is now termed Akira (2100 B.P.).
Preliminary description in Azania, Vol. XII, pp. 111-118.

b) Mumba Rockshelter-- site near Lake Eyasi excavated by L. and M. Kohl-Larsen in the 1930s. An eight metre section indicates industries ranging in typology from Middle Stone Age to Late Stone Age with pottery at the top. Impressive snail midden deposits appear to begin about 31,000 B.P. accompanied by an industry containing both points and microliths. A beach deposit higher in the sequence, as yet undated, documents the last highstand of Eyasi at circa 36 metres above its present level. Late Stone Age industries, snail and mussel midden above the beach through 1.5 metres of

deposit with burials, Kansyore and possibly Nderit wares in the upper part. The topmost layer yielded Narosura ware and early Iron Age pottery (Lelsu ware).

c) Eyasi Lake Shore-- locality in which L. Kohl-Larsen collected crania of two individuals of H. sapiens rhodesiensis type. MSA artifacts were recovered in 1977 together with numerous faunal remains, including the articulating bones of an hippopotamus manus; the hippo remains appear to be those of an extinct species. Efforts are underway to date some of the bone which is presumed to be contemporary with the hominid remains and the lithic industry.

Research was financed in part by grants from the National Science Foundation (Dissertation Research), the Ford Foundation (Traineeship in Anthropology) and the L.S.B. Leakey Foundation.

ZAMBIA

Archaeology at Kansanshi Mine: preliminary notes on the 1978 rescue excavations

Kansanshi Mine, near Solwezi in the North-Western Province of Zambia, was one of the last major ancient copper mining and smelting sites in southern Africa to survive relatively undisturbed into the 1970's. In 1971-72 one of us (M.S.B.) conducted an intensive archaeological investigation of the mine and its associated smelting area at the request of the Anglo-American Corporation of Central Africa who planned to re-open the mine in 1973. After an initial period of mapping the ancient workings, the majority of the research was carried out in the smelting area adjacent to the mine.

In the smelting area four phases of the Iron Age were identified, an Early Iron Age (E.I.A.) Phase I and II and a Later Iron Age (L.I.A.) Phase I and II. The E.I.A. Phase I dated from the 5th to 7th centuries A.D. It was characterized by thick walled, poorly fired pottery decorated by stamped or impressed diagonal, cross-hatched, and herringbone motifs. The E.I.A. Phase II dated from the 8th and 9th centuries A.D. Pottery from this period was thin walled and somewhat better fired. It was very elaborately and finely decorated with wide bands of bangle impressed or incised designs. By far the most common motif (over 65%) was a pattern of interwoven lines with spaces between the lines often filled with fine wavy line or comb stamping. The L.I.A. Phase I was represented by a village site near the smelting area. This village was occupied during the 11th or 12th centuries A.D. Ceramic designs are simpler and more crudely executed during this period, with single bands of diagonal lines or two to three bands of opposed diagonal lines being most common. The L.I.A. Phase II probably began in the 14th or 15th century and extended to the beginning of the colonial period. Ceramics from this period may be related to recent Kaonde wares.

In addition to the Iron Age material, a small amount of undifferentiated Late Stone Age artifacts were located in strata containing both Early and Later Iron Age pottery. A more precise identification of this Stone Age collection as well as its relationship to the Iron Age was impossible because limitations of time and funds prevented testing the site below the Iron Age layers.

The re-opening of Kansanshi Mine was delayed for economic reasons until 1975. At that time quarrying began on the hill and to date about 60 percent of the old workings have been obliterated. The company had planned to preserve the smelting area but unfortunately in early 1978 a contractor looking for topsoil to place around some mine buildings inadvertently removed the top 30-40 cm from much of this site. Only the southern end of the smelting area including the E.I.A. Phase I component and the L.I.A. Phase I village remained untouched. Because production was to be increased, the Zambia National Monuments Commission decided that rescue excavations on the surviving portions of the site should be conducted.

The goals of the 1978 research were to supplement and expand the work carried out earlier. Attempts were also made to recover samples of artifacts displaced by the removal of topsoil, but the bulk of our efforts were concentrated on selected areas where we believed that specific problems posed by the

1972 research could be solved. These problems included the lack of structural remains for the E.I.A. Phase II component, our need to increase the size of our sample of ceramics from the E.I.A. Phase I component, to learn more about the subsistence practices of all the groups to work the mine, and the relationship of the Stone and Iron Age materials. Excavations were conducted over a period of five weeks in July and August 1978 and a total of 18 two by two meter units were opened. Data was successfully gathered on all these problems, but continuing logistical and financial troubles cut the field season short by at least a week.

In the process of grading off the dark topsoil, the contractor exposed a large area of the E.I.A. Phase II component. An intensive inspection and surface collection of this area was carried out in which 212 decorated potsherds were collected along with a small number of other artifacts. Although well over 2000 square meters of this component were inspected, no appreciable amounts of hut daga or other structural remains were found. The pottery was relatively evenly scattered as well. The original interpretation of this component as the remains of a number of small temporary camps for miners is thus sustained.

The E.I.A. Phase I component had not been disturbed by development of the mine. Excavations in this area uncovered a daga concentration confirming the presence of permanent structures in what was probably a small hamlet. Samples of artifacts remained small until a deep circular pit filled with refuse was encountered. From this feature alone over 150 decorated potsherds were collected along with a number of iron artifacts and large charcoal samples. Of particular interest are the extremely small carbonized seeds obtained by flotation from these sediments. These seeds are not yet identified, but may be a form of millet. Similar seeds were also found in the 11th to 12th century village site across the Dambo.

Large amounts of lithics were recovered from excavated units in both the E.I.A. Phase I and L.I.A. Phase I villages. The lithic collection has only recently arrived in Montreal for study and so the following remarks are based on first impressions formed during the initial cleaning and cataloging of these collections.

In the area of the L.I.A. Phase I village stone tools and chipping debris were common. Specimens were found throughout the deposits but increased in frequency with depth. The raw material was almost exclusively milky and clear quartz. Cores are uniform in size throughout these deposits, with a mean maximum dimension of 32.6 mm. Core types are primarily unilateral single platform, bilateral radial, and irregular. Finished tools are relatively frequent and include scrapers on flakes and chunks, notched tools, truncated and backed flakes, and a few crude crescentic microliths. Also found were a bored stone made of hematite and a trihedral pick made on a thick quartzite flake with fresh lateral edges and a polished tip. The overall appearance of this collection is that of a Natchikufan Industry and, because it lacks a significant number of well made geometric microliths, it may be relatively early in date. The relationship of these tools to the Iron Age is still not clear. In general, the lithics are most frequent below the layers that contained the most pottery. Because daga pitting and cultivation have extensively disturbed this site two or

more separate components may have become mixed.

In the area of the E.I.A. Phase I site there appear to be two distinct Stone Age components. The uppermost (50-70 cm below surface) appears to be another Natchikufan assemblage, with small (mean maximum dimension, 32.5 mm) single platform, and irregular cores. Implements are less frequent in this collection. The lower component (70-140 cm) produced a greater number of specimens, all made of milky quartz. Cores were larger (mean maximum dimension, 47.4 mm) and more varied, including a few oval and triangular levallois cores. Implements were rare, although a number of flake scrapers, notched tools, and a single crescent were found. This may represent a "Second Intermediate" industry.

Acknowledgements

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Michael S. Bisson, McGill University

John H. Robertson, Zambia National Monuments Commission

FORTHCOMING PUBLICATIONS

Proceedings of the eighth Panafrican Congress of Prehistory and Quaternary Studies, Nairobi, September 5-10 1977 will be published early in 1979, probably March or April. The volume will contain nearly 100 illustrated papers together with other Congress matter and will be about 400 pages long. The price (including surface postage) will be Ksh. 380 (Kenya only) or US$55 (elsewhere). Please send your orders to:

PACPOS
c/o National Museums of Kenya
P. O. Box 40658
NAIROBI, Kenya.

All full Members of the 8th Panafrican Congress of Prehistory will receive a copy of the Proceedings soon after the publication date.

El Kab II : L'Elkabien, Epipaléolithique de la Vallée du Nil Égyptien by P.M. Vermeersch. Brussels and Leuven. 1978.

and a new journal

SINET: A Ethiopian Journal of Science. A subscription cost US$12 per year by airmail to individuals and $21 to institutions. It can be ordered from: SINET Editorial Office, Faculty of Science, Addis Ababa University, P.O.Box 1176, Addis Ababa, Ethiopia.

'Palaeoecology of Africa'
eds. E.M. van Zinderen Bakker and J.A. Coetzee. Volume X containing 20 articles (190 pages) has been published by A.T. Balkema, P.O. Box 1675, Rotterdam, the Netherlands, Price £10.50.
Volume XI will appear early in 1979.

and Dr. W.Y. Adams of the University of Kentucky tells us that his book 'Nubia: Corridor to Africa' published in 1977 won the Herskovits award from the African Studies Association and says -

" The University Press of Kentucky has agreed to bring out the complete series of Memoirs of the Archaeological Survey of Sudanese Nubia, on behalf of the Sudan Antiquities Service. The series will number at least 10 volumes, and will present the results of the salvage archaeological and ethnological surveys carried out by Unesco and Sudan Antiquities Service personnel in Sudanese Nubia between 1959 and 1969. The first two volumes, currently in the press, are the final version of the Nubian pottery typology that I've been working on for so many years.

PERSONAL NOTICE

Steve Daniels, who was until last year running the Archaeological Statistical Unit at the Centre for Nigerian Cultural Studies, Ahmadu Bello University, is proposing to set up an Archaeological Quantitative Design and Analysis Consultancy offering:-

** Consultation on

quantitative aspects of data collection and research design
selection of appropriate analytical strategies
interpretation and reliability of esults

** Computing facilities featuring

ability to deal with large datasets
comprehensive data-handling routines
a wide range of analytical techniques
comprehensible computer output
publication-standard graphic figures
ad hoc programming for special problems

** Fast service in commercial time

His address will be:- 1, Gwendrock Villas, Fernleigh Road, Wadebridge, Cornwall, England, and he will be ready to produce results by October 1979. Enquiries welcome any time. Fees by arrangement but moderate - he hopes to make a living, not a fortune.