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Editorial

As we explained in the last Newsletter, the report on the Second Conference of West African Archaeologists held at Ibadan in June 1967 was too big to be contained in one number. Accordingly the accounts of recent work there given were held over and form the contents of the present number.

At an informal meeting of archaeologists working in West Africa held during the course of the Sixth Panafrican Congress on Prehistory and the Study of the Quaternary at Dakar, it was agreed that the Newsletter should now drop what has become the fiction of 'For Private Circulation Only' and the rubric forbidding quotation for written publication of contributions without the original author's consent. This will become operative with Newsletter No. 10. It will, however, always be open to authors to ask to have the rubric applied to their individual contributions, and where requested, this will be done.

Please note that there are still some members on the distribution list who have not returned an order form with the necessary subscription. Anyone in this category who wishes to continue receiving the Newsletter is asked to do so at once. This is the last Newsletter which will be distributed to those who have not paid their subscriptions.

Resumé

Editorial

Ce numéro du Journal est consacré aux comptes-rendus des travaux en cours présentés à la deuxième Conférence des Archéologues de l'Ouest africain que nous avons dû remettre du dernier numéro.

Il a été décidé que, dès le numéro 10 du Journal nous n'appliquerons plus la fiction: "Réservé aux seuls abonnés", ni la rubrique interdisant toute citation sans le consentement de l'auteur. Les auteurs peuvent toujours demander l'application de la rubrique à des articles particuliers.

AVIS: L'abonnement réglé conditionne l'expédition du Journal dès ce numéro.

A PRELIMINARY NOTE ON SOME MULTIFACTORIAL WORK

by

S. G. H. Daniels

During the last year I have made two rough applications of multifactorial techniques to two different problems. The purpose of this note is not to explain the techniques in detail or to present the results of the analyses, but to draw attention to the type of approach, and the situations in which it may be useful. In a forthcoming paper (Daniels 1967) I have applied both an inverted centroid factor analysis, and a difference matrix technique to the chronological ordering of nine sites of the Pietersburg Culture in the Transvaal (Mason 1962). The difference score used in this matrix is given by $D = d^2$, where d is the difference, in standard scores, between a pair of sites for each observed variable in turn.

Since this difference score is simply the distance between two points in an n -dimensional Euclidean space, the difference matrix defines the relative position of each site as a point in such a space, in which the n different axes represent the n observed variables used in the analysis. Since the original variables were converted to standard scores, the co-ordinates on any one of the original axes account for just $1/n$ of the total variance in the space. The object of both the analyses here mentioned was to try to place new axes through the centroid of the distribution in such a way as to account for as large a part of the variance on as few axes as possible: in other words to provide the most economical mathematical explanation of the causative factors behind the observed variables. Neither analysis is more than a rough approximation to this requirement, since both were carried out on a desk calculator, and time did not allow the necessary iteration processes to be carried to a satisfactory conclusion.

In the first analysis an axis was passed through the centroid and the point furthest from it, the variance accounted for by this axis extracted from the difference matrix, and the process repeated until the variance remaining in the matrix was negligible. This approach was applied to some preliminary data from Iwo Eleru (Shaw 1965). The site was divided up into eight rather arbitrary areas, four of which were on the main platform, two on the talus slopes, and two at the edge of the platform and the head of the talus. When the analysis was conducted rather under 100,000 pieces of stone had been examined in accordance with a randomisation procedure (Daniels 1966b). Within each area therefore the data available

comprised a sample drawn at random from different depths. Eleven variables were observed for each area (e.g. percentage of microliths, percentage of hammerstones, mean weight of waste flakes, etc.) The first two axes passed through the space accounted for some 80% of the total variance. On one of these axes the four main-platform areas had closely similar scores, the two talus-slope areas differed greatly from these, one considerably more than the other, while the two talus-head areas fell in an intermediate position. On the second axis, the talus, and to a lesser extent the talus-head areas, were very close to the centroid value, while the four main platform areas were ranged more widely on either side of this. The distribution of points in these two dimensions thus approached a T-shape, with one axis differentiating the platform and talus areas, while the other affected only the platform areas to an appreciable extent. Excluded from the variables used in this analysis was the 'Chert Index' (percentage of chert among the stones). As mentioned in 1966 at Freetown (Daniels 1966a), this index showed consistently a change from 0 at the lowest levels to about 30 in some of the upper levels. It was therefore assumed to be a good indicator of chronological position. To test whether either of the two main axes were linked to time, the chert indices for each of the eight areas were calculated. In each case the correlation between the axes and the chert indices was small and not significant, suggesting that the pattern shown is independent of the passage of time.

The second analysis omitted the difference matrix stage, taking a pair of observed variables, after standardisation, and rotating the axes to the position where as much variance as possible was accounted for by one axis. The readings on this axis were then plotted against another observed variable and a similar rotation made. The process was repeated until all observed variables had been rotated. This process was applied to the Pietersburg Culture sites mentioned above in order to see whether any one factor (presumably time) outweighed the effects of all others, thus making a simple one-dimensional sequencing technique possible. The greatest variance accounted for on one axis was 49% of the total observed variance. If it had been practicable to continue with the necessary iterations, this percentage would probably have been slightly increased. However, the result suggests that in this case at least a one-dimensional chronological ordering technique could produce considerably distorted results.

I am hoping to be able to apply similar multifactorial approaches to several other problems where complex relationships

would appear to exist between sites or parts thereof, and in future to cut down the time involved with the use of the University of Ibadan's IBM 1620 computer.

References

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Resumé

Note Préliminaire de Travail Multifactorial

par

S. G. H. Daniels

L'année dernière j'ai fait deux applications primitives de techniques multifactoriales à deux problèmes différentes. J'avais comme but à fournir l'explication mathématique la plus économique des causes des facteurs variables remarqués. Les méthodes employés sont expliqués. Ils étaient appliqués au 'Pietersburg Culture' du Transvaal afin de voir si aucun facteur (peut-être le temps) pesait plus que tous les autres; en ce cas les résultats indiquaient que le méthode de faire une série chronologique dans une seule dimension peut fournir des résultats assez faux. Deuxièmement, une analyse multifactoriale du matériel des fouilles dans l'abri sous roche de 'Iwo Eleru', du type de l'Age de Pierre récent, révélait des différences dans le groupement des outils entre la terrasse, le tête du talus, et le talus même.

COMMENTS ON THE REPORT IN W.A.A.N. 5 ON THE FREETOWN MEETING

by

O. Davies

1. The first volume of my field-notes was dispatched on March 23 to the University Library, Legon, and to the Ghana Museum. I have not yet had an acknowledgement, but it is hardly expected to arrive before the middle of May. This volume consists of 110 pages, at an average of about 8 site-entries per page, on British Togoland. I expect to send 4 further volumes, which will probably be a good deal larger, covering Southern Ghana (former Colony), Ashanti, Northern Ghana, and sites in neighbouring territories which I have visited.

2. Palynology did not escape the notice of the V.B.R.P. I cleaned sections and took samples from about 10 sites in the floodable area in the Volta basin. Two of these sites are supported by radiocarbon-dates, the others did not seem to have enough carbon to make dating possible (dated sites Jimam and Limbisi). It was not possible to get the samples palynologically examined, so they have been stored in a labelled box left in the Herbarium of the Botany Department, Legon. Professor van Zinderen Bakker said that he could not touch West African material. I hope that one day a palynologist will be appointed who will undertake these samples.

All these samples belong to the latest stage of the valley, and are holocene. I did however notice two sites which looked like lagoons of the Low Terrace, and so pre-Gamblian. Probably both these sites are now flooded, one certainly. But almost certainly others exist outside the floodable area. I made no excavation, so do not know what lies beneath the sod; but if palynological work is seriously undertaken, such sites should clearly be tested to see if they do contain pre-Gamblian pollen.

3. Further investigation of raised beaches for Inqua on the Guinea coast has been left to Professor Anderson of Fourah Bay, who told me that he would examine those in Sierra Leone, and hoped to pay a visit or two to Ghana. He is the only member of the Inqua sub-commission in this area. Professor Burke of Ibadan also said that he would try to do something, but Nigeria is a particularly unsuitable terrain for such work, owing to the rapid tectonic activity of most of the coast. I am copying my notes and sending them to Professor Anderson for

his use. Most of the material has been alluded to in one or both of my books. From my own notes I shall make a preliminary map, to which Anderson can add.

Workers in Dakar will probably provide material for their area. We intend to hold a meeting of the sub-commission and of others interested at Dakar, to discuss method of mapping and other details, as requested by Professor Fairbridge, so as to have something ready on Eurafrican Shorelines by the time of the next Inqua Congress in 1969.

A little archaeological material has turned up in the West African raised beaches; but to nothing like the same extent as in Morocco or South Africa.

Resumé

Quelques Observations sur le Compte Rendu du Congrès
à Freetown dans W.A.A.N. No. 5

par

O. Davies

Le premier tome de mes notes archéologiques a été expédié à la bibliothèque de l'Université de Ghana et au Ghana Museum. Quatre autres tomes suivront.

Le 'Volta Basin Research Project' n'a pas manqué à la palynologie; des échantillons ont été ramassés et sont mis en dépôt en attendant l'examen.

RITUAL POTS FROM APOMU FOREST: ONDO PROVINCE, WESTERN NIGERIA

by

Ekpo Eyo

In 1944 an interesting set of pots was discovered while making a road towards the Pilot Sawmill at Apomu ten miles south of Ondo. The site is on the left going towards the Mill and about 13.7 meters from the centre of the road. The position then was marked on the other side of the road by a large "Ijegbo" tree (Entandrophragium) close to the road side.

The officials at the Sawmill reported that near the spot where the pots were originally found there was a "curious mound" at least 90 cm. high and 240 cm. in diameter. They also said that the pots were lying 22 cm. - 36 cm. below the surface in a compact area - i.e. not widely scattered and just about on the top layer of the red subsoil and covered by the blacker forest soil layer.

In 1951, Miss L. V. Hodgson, a Woman Education Officer seconded to Antiquities, carried out an excavation at the site, at which I assisted. A two-paged account of the excavation by Miss Hodgson in the Departmental file made no attempt to describe the pots nor was any attempt made to interpret them. Her report is simply a diary of work carried out in four days at the site, and the pots have never been published.

It would appear that the mound referred to above was not found by us, although it is possible that another mound 240 cm. by about 60 cm. which we found and dug to a depth of about 60 cm. and which yielded only fragments of pottery, was the same mound. When some clearing was made in the same area in an attempt to find the first mound, decorated pottery was found on the surface and just under the surface of the soil. This spot was then excavated.

The Finds: The total excavated area was 60 cm. x 40 cm. and just under the topsoil a big pot, largely broken, was found. Surrounding it were small pots with several knobs on top and cone shaped pots numbering 25 (see diagram).

A few centimeters away (the exact measurement was not recorded) from this excavated spot was another group of pots packed tightly one beside the other. No definite arrangement seems to have been attempted in the laying out of the pots, but it looked as if they were deliberately placed there and

not simply discarded. They were all placed on the same level 30 - 45 cm. below a slight oblong mound, 20 cm. high. It would appear that the pots were laid there and the slight mound made on top of them.

Associated with these pots were six small pieces of iron, an iron dagger 14 cm. long, a bell-shaped iron object attached to a ring with an iron bar attached to it and one bronze bracelet.

Stratigraphy: No section of the excavation was drawn but underlying the top black layer was a red-subsoil which was so hard to excavate that it was decided after four days of digging to wait for the rains to soften it before further excavation could take place. This fact seems to suggest that we were already on virgin soil and that the pots were placed in a shallow pit and covered up with earth which formed the mound.

Description of the Pots: The pots have been divided into four main types, based on the decorations on them. Generally the pots, except a few examples, are made like upturned drinking cups and thus can only be stood erect by placing them with the open-end down. The rims of the cups are usually sharp except in two examples which are flat. The diameter of the cups ranges from 3½ cm. to 9½ cm. and the thickness from 1 cm. at the bottom of the cup to 5 cm. at the rim.

Type 'A': Consists of 34 pots with neck or column rising up. Twelve of these still have the columns or their remnants intact while the others are judged from the indications given by the technology as discussed below. The columns are decorated either by being corrugated from top to bottom with herring bone design on the sides of the corrugations or by slant lines. There are also serrated rings (two to four) around the base of the columns. At the top of the columns are usually 3 or 4 striated protrusions, one of which sits right on top. The bodies of some of the pots are globular while others are bell-shaped.

Type 'B 1': This class consists of pots with bodies similar to Type 'A' but instead of columns are decorated with conical knobs. Some of the pots (14) have striated knobs, while others have shorter, more numerous (24) and less pointed knobs. The pots with longer knobs measure about 16½ cm. in height with the knobs measuring 4 cm. - 5 cm. Most of the pots in this category have a line ridge or serrated line round the base where the knobs commence.

Type 'B 2': are similar to the above except that the knobs (17 - 20) are shorter and unstriated. They do not also have any line round the base where the knobs commence.

Type 'C': These are pots with crests which lean to one side. Some of the crests are "feathered" (as in 51.20.7/1) on the upper side and on the lower (concave) side there are few wide-spaced scratched lines. One of the crests (51.20.7/4) has three ridges running from the top of the crest to its base with stabbed dots sprinkled in the area of the middle of the crest. The concave side is plain.

At the base of the crests are several (1 - 3) rows of either serrated lines or slanting lines or just dotted line decorations.

Type 'D': consists of two pots with "Crown" heads - Nos. 51.20.10 and 44.3.1. (see diagram).

Type 'E': These are five anthropomorphic pots (Nos. 51.20.27/1; 51.20.27/2; 51.20.28/1; 51.20.28/2 and 51.20.28/3). They are very crudely made and have small knobs on top. Two of them 51.20.27/1 and 51.20.27/2 have a pair of eyes which are paralleled by some terra-cottas on exhibition at Ife Museum.

Type 'F': Three conical pots, one with ring head (51.20.15/1) and the other two, 51.20.15/2 and 51.20.15/3 having a pair of horn-like protrusions.

Type 'G': A single pot No. 44.3.7 with a central crest. There are on one side of the crest raised decorations with impressed circles (see diagram).

Technology: The pots were all hand made by the simple technique of moulding although the inside of Cat. No. 44.3.7 i.e. Type 'G' shows signs of coiling. It is obvious that the body or "cup" part of the pot was first made and the knobs, columns, crowns, and crests made separately and lugged in. Most of the pots appear to have had a red slip but there are several of a much paler and yellower colour evidently made from a different clay and covered with biscuit colour slip.

The firing seems to be of a high order because the uncracked pots produce a high resonant sound when struck with the knuckle of a finger.

Comment: One is not certain what the pots were meant for. Pots can be used for domestic purposes, for ritual purposes,

or for mere decoration, and it is tempting to assume that they were merely decorative in view of their very ornate nature, but there are other important considerations. First, the "cups" could have been used for drinking in a ritual ceremony which took place in this bush. An examination of the inside of the cups does not reveal much, as they were already washed and no on-the-spot examination appears to have been made before their contents, if any, were removed.

A point of importance is the fact that these pots, numbering 106 (excluding those smashed on the site and the bulk of the 1944 lot not found), were from two groups of pots in a very small area, with one group forming a heap and the other packed around a bigger central pot. The proximity of the "heap" of pots to the pots arranged around the bigger one seems to suggest that the former was used as a "feeder" - the pots being removed from the "heap" and placed around the bigger pot as and when necessary. There was still a gap which was not filled with pots at the time of the excavation.

It is notable that this particular forest is not regarded by the Ondo people as sacred unlike the people of Ife who have some pious feelings towards their sacred groves. However, the Mill Officers reported that the Ondo people thought that some juju probably existed there in the bush and was visited by Akure people, the pots being offerings of a special type.

It is particularly notable that the pots were not associated with a burial, for despite the contention that bones do not survive for a long time in tropical soil, traces of them would have been visible. This does not rule out the fact that future excavation may reveal a burial, but meanwhile all deductions must necessarily be based on available evidence. On the present evidence, the pots were not placed on top of a grave like those found among the Dakakari of Zuru in Kontagora or placed with a corpse as is common elsewhere.

The fact that so much trouble was taken in the making of the pots suggest that their function or purpose must have been important. In South Africa, pots were dedicated to contain the soul of the tribe or to become the focus of major rituals. In West Africa, pots have been used as grave goods, while others have holes cut in them and are used in sacrifice, or merely offered as sacrifice. The Apomu pots have no holes in them, but on the other hand they have been so elaborately made and carefully arranged around a big pot that they were most probably used as the focus of a major ritual.

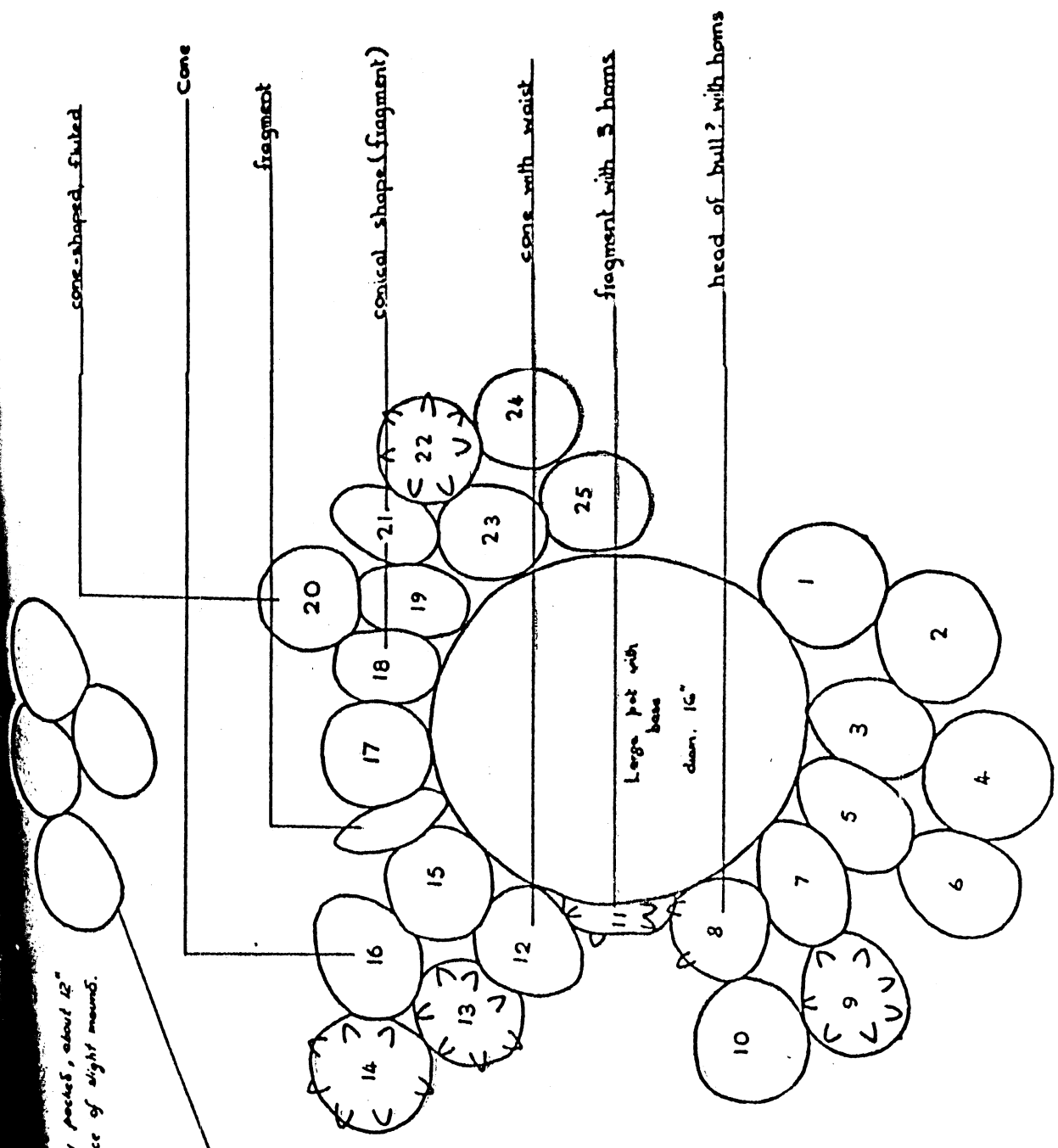
If the suggestion that the pots may have been used as the focus of a major ritual is accepted, we can find parallels in Ghana.¹ Wild reports that the site at Agona Swedru was not a burial ground or cemetery and that the Agona people called it "Samanpow" or "Asensie" meaning, "a place of pots". Wild also refers to Rattray² who reports that in the funerary rites of ordinary individuals, a family pot "Abusua Kuruwa" which has been made to represent the dead is generally produced. The blood relations of the deceased shave their heads and the hair is placed in the pot and this is placed together with some utensils in the "thicket of the ghosts", not on the grave, but in a part of the cemetery, known as Asensie - "the place of pots". A speech is then made informing the deceased that his funeral rites have finished. Furthermore, Wild quotes Rattray again³ as mentioning the use of pots for ceremonial purposes in connection with the sacred grove at Santeranso. The ancestors of Ashanti are supposed to have emerged from the spot where the pots were placed. Finally, Wild mentions a further example of the same phenomenon from Peindorf⁴ who reports that pots were placed as offerings to the spirits of the dead, "apart from the graves".

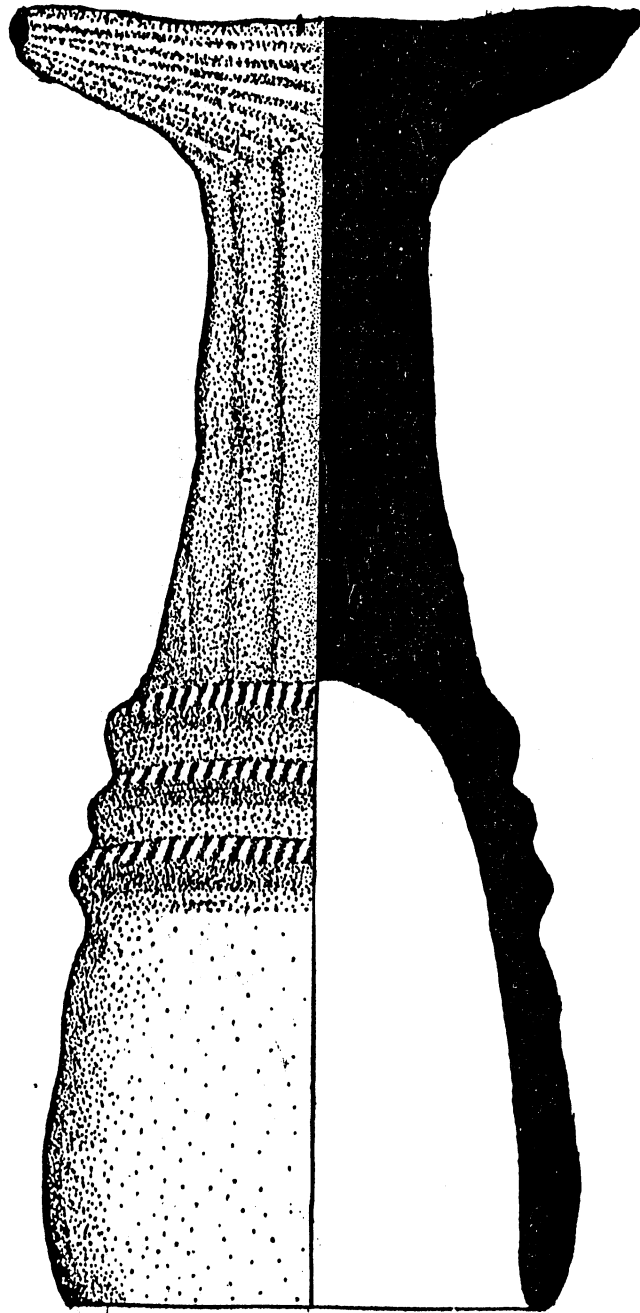
From these examples, it will be seen that the practice of using pottery objects as a focus of rituals is not uncommon in West Africa and that the Apomu pots could in all probability have served this purpose.

I have not come across other pottery objects which can be compared with the Apomu ones, but John Picton has drawn my attention to two carvings on display in the Nigerian Museum, Lagos which come from Ewu, Urhobo. They are carvings to symbolise Iviri, a protective spirit, and Obor, the shrine of the hand, a sort of talisman obtained on the advice of a diviner to reverse fortune. Stylistically, there may be some connection, but their functions do not appear to be the same. For, while the Iviri and Obor are objects of individual cults like the Ikenga among Onitsha Ibo, the ritual connected with the pots was most probably communal.

Dating: If the pots were indeed a focus for a major ritual of the inhabitants of the present Ondo people, such a ritual would have been known to them at least as something that happened in the past. That they do not know about the sacred nature of the pots suggests that they antedate the occupation of this area by the present Ondo people. Indeed the name Ondo means "the settlers" and they are said to have moved to this area from Oyo. This situation can again be paralleled in Ghana at the Agona-Swedru site. Wild reports

loosely packed, about 12"
surface of slight mound.

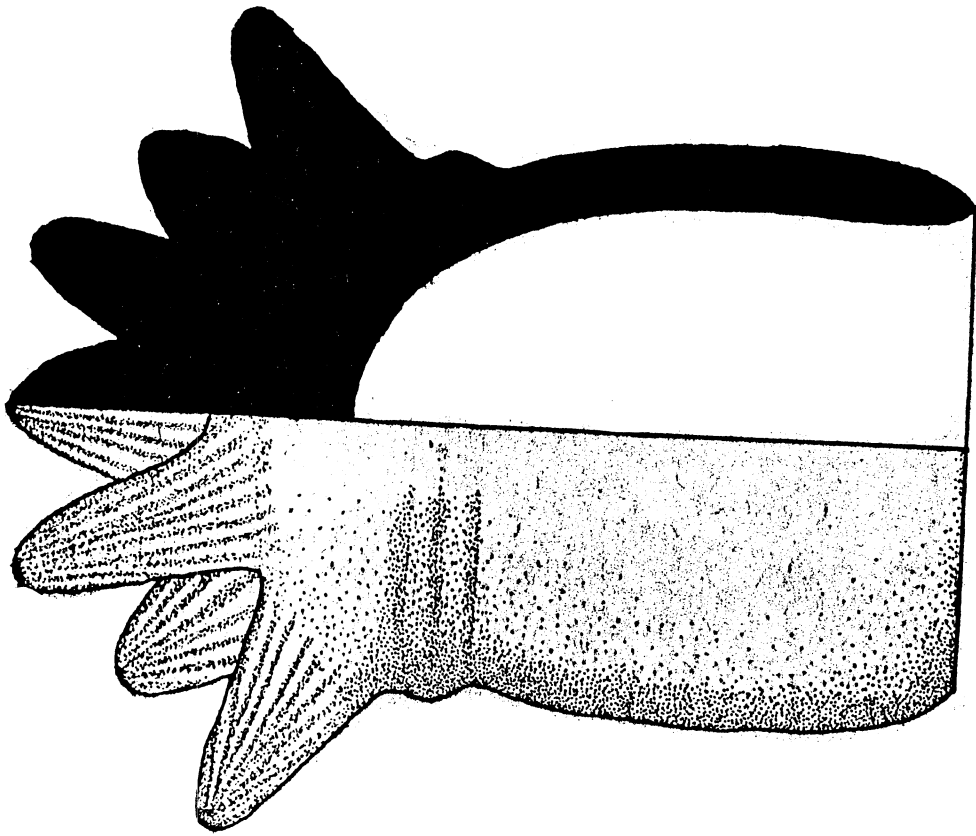




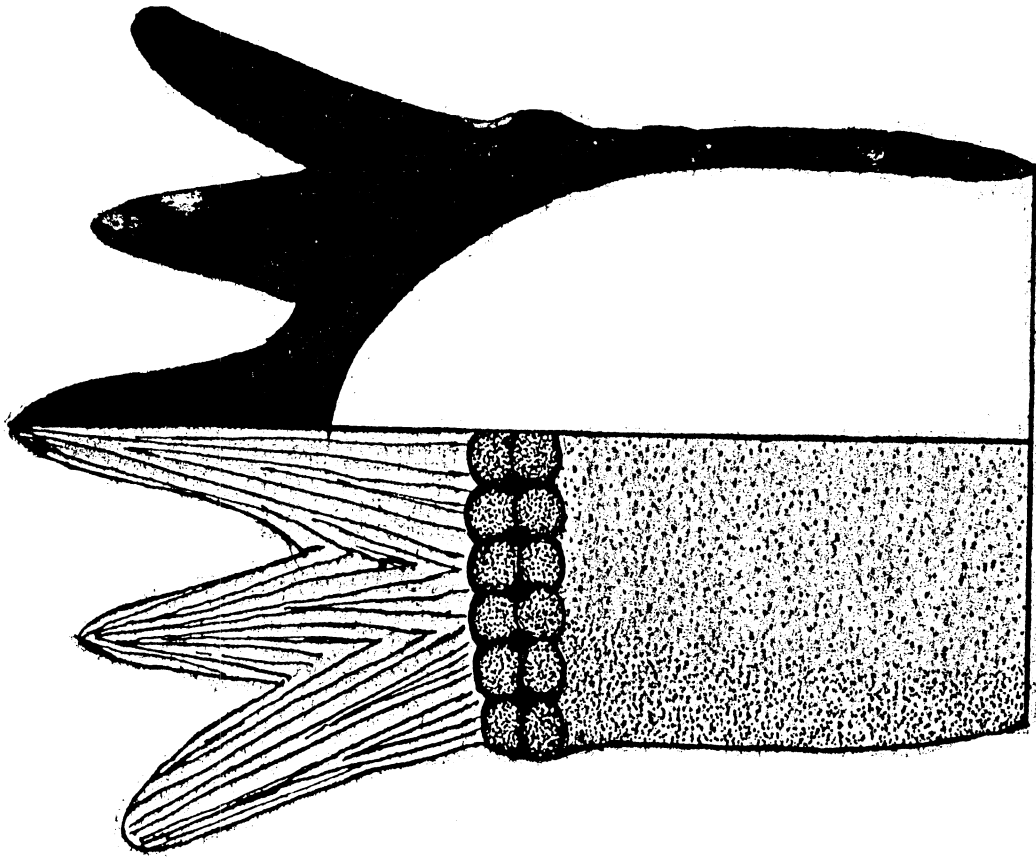
APOMU POTTERY TYPE A

23

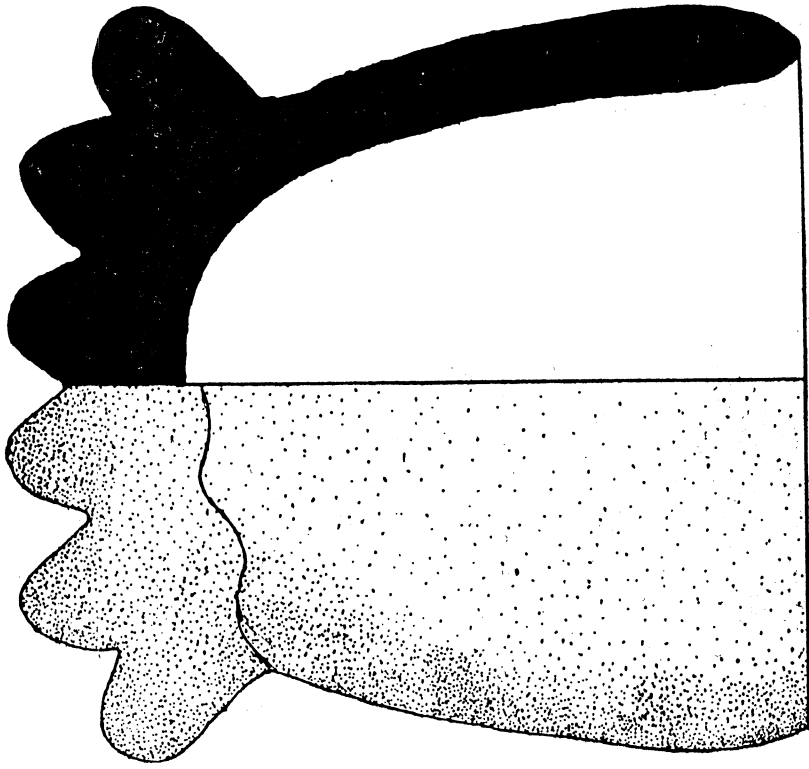
19



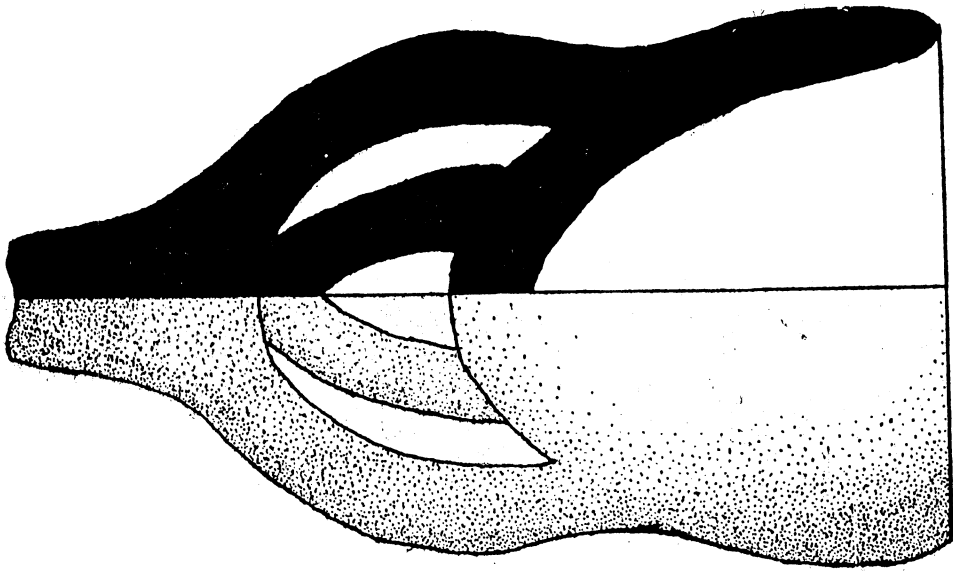
APOMU POTTERY TYPE B1



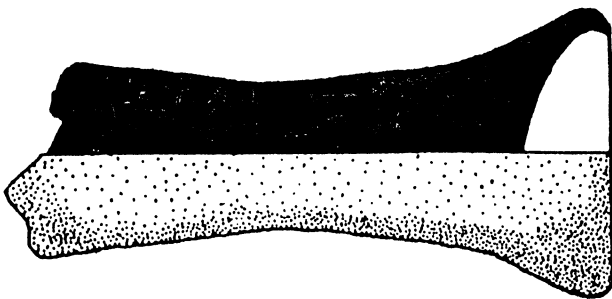
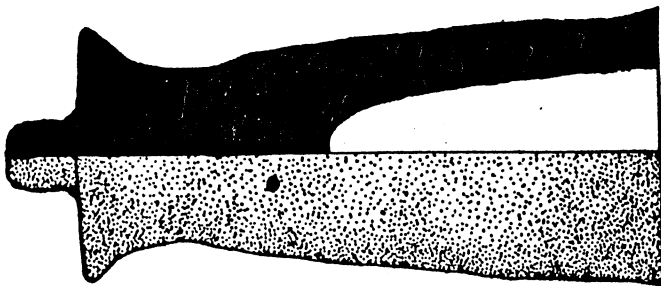
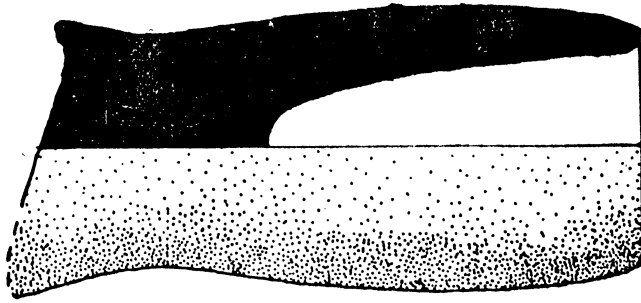
APOMU POTTERY TYPE B1



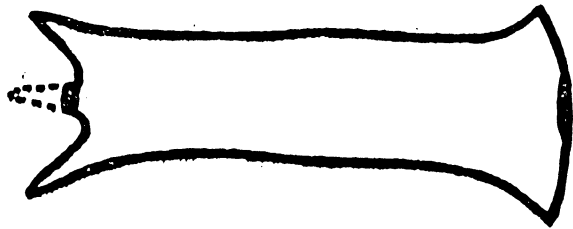
APOMU POTTERY TYPE B2



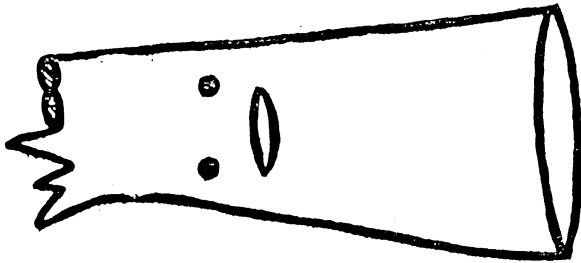
APOMU POTTERY TYPE D



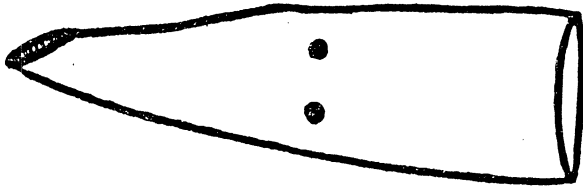
APOMU POTTERY TYPE B



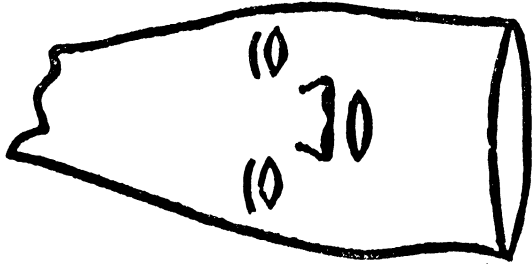
Cat. No. 171/61D
6 1/2' x 2'



Abiri f
6 1/2' x 2 1/4'



Abiri f
8' x 2 1/4'

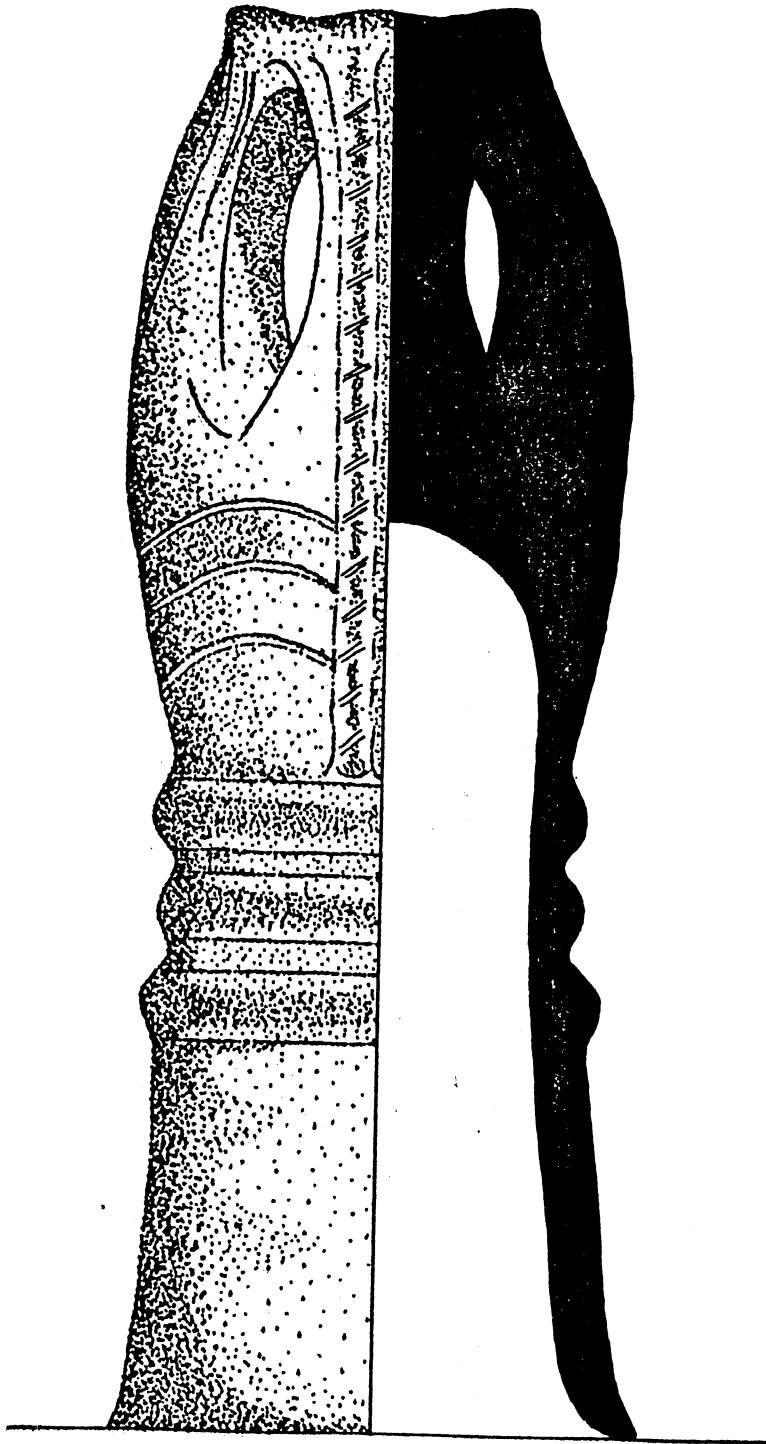


Cat. No. 63/46
6 1/2' x 2 1/4'

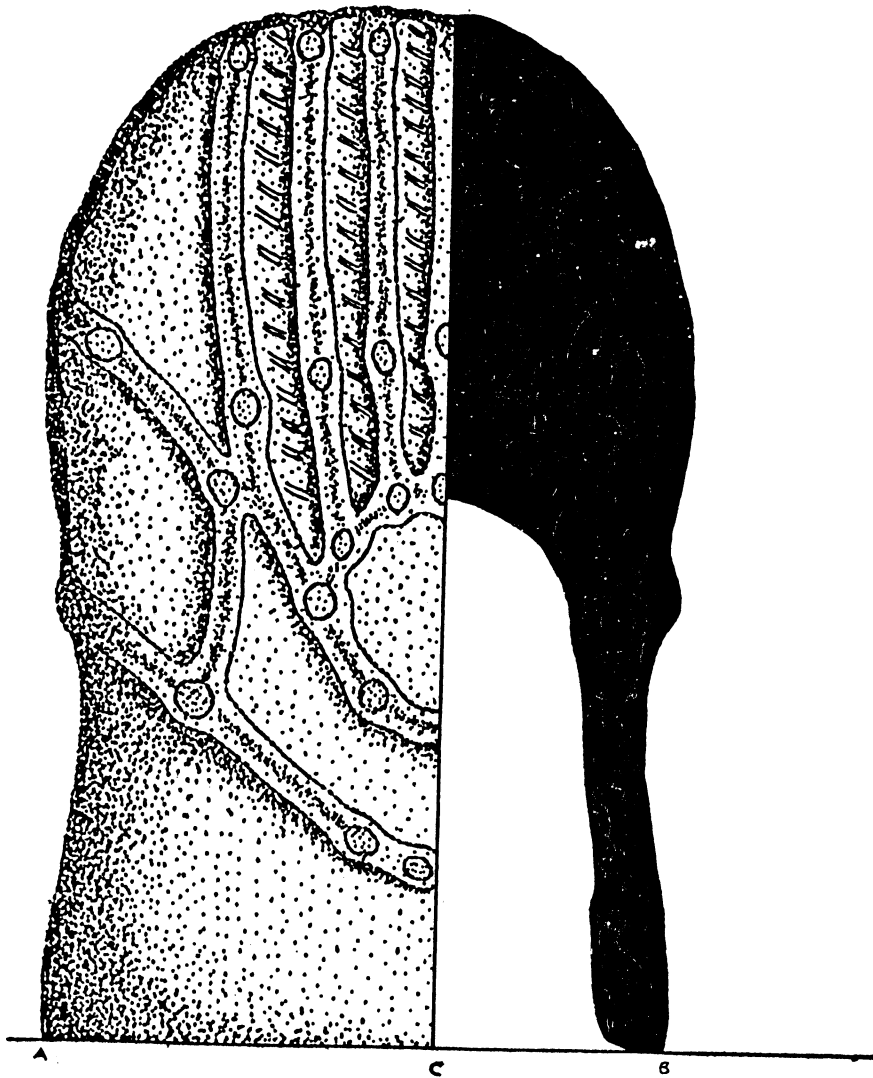


Cat. No. 61/4
5' x 2 1/4'

POTTERY FROM IFE FOR COMPARISON WITH APOHU POTTERY TYPE I.



APOMU POTTERY TYPE F



APOMU POTTERY TYPE G

that the Agona Swedru do not have any pious feeling for the "Samanpow" or "Asensie" and that the area was formerly occupied by the Awutu people who claim to have come from Benin in Nigeria.

More important than the above is the similarity between the anthropomorphic group from Apomu (i.e. type 'E') and Ife ones Cat. Nos. 63/46, 171/61D and two others from Abiri (f). The Ife specimens are described as "conical heads which have been used as offerings at a shrine or as memorial to ancestors". One of them Cat. No. 171/61D is described as "a ceremonial staff". Again there is at Ife a piece of projecting flat clay lug with a hollowed end which is not unlike Apomu 51.20.7/1. The Ife specimens are thought to be a pre-classical form and thus older than the naturalistic heads. Perhaps it is not then unreasonable to date the Apomu finds to some time earlier than the 14th century A.D.

The above suggestions are based on a very unsatisfactory excavation whose main object was simply the recovery of pottery. It is intended in the near future to carry out a more scientific work in this forest, the result of which might sustain or disprove the suggestions made here.

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1. Wild, Captain: Funerary Equipment from Agona-Swedru. Winnebah District, Gold Coast. J.R.A.I. Vol. LXVII, 1939, pp. 67-75.
 2. Rattray, R. S. "Religion and Art in Ashanti", Chap. XIV, p. 164.
 3. Rattray, R. S. "Ashanti", Chap. X.
 4. Reindorf, C. C. "History of the Gold Coast and Ashanti", Chap. V, p. 67.

Resumé

Au sujet des Pots Rituels, trouvés dans la Forêt
d'Apomu, Nigéria de l'Ouest

par

Ekpo Eyo

Quand on perçait une route en 1944 on a trouvé un assemblage de pots intéressants, et de petites fouilles ont été faites en 1951. On a trouvé aussi des objets de fer et un bracelet de cuivre. La plupart des pots sont fabriqués en forme des tasses renversées, donc ils ne peuvent pas se tenir debout que quand l'ouverture est utilisé comme fond. Ils sont bien ornés; on ne connaît pas d'analogues. On suppose qu'ils sont des pots rituels, et on sait qu'on se sert ainsi des pots au Ghana. On propose une date avant le XVe siècle ap.J.-C.

KINTAMPO 1967

by

Colin Flight

This is a preliminary report on the first season of research undertaken by the Department of Archaeology into the prehistory of the Kintampo area. Philip Rahtz of Birmingham University spent 5 weeks in November-December 1966 excavating a rock-shelter (K1) 6 miles north of Kintampo. I carried on with work at this and seven other sites of the same type for 13 weeks in January-April this year. Not all the shelters investigated proved of much importance, and the tentative conclusions given in this report are largely based on the evidence from three sites:-

Site	Site name	Location
K1	Bwigheli <u>Mo</u> : 'the high rock'	8°08'N 1°42'W
K6	Onyame Bekyere <u>Akan</u> : 'god will provide'	8°01'N 1°45'W
K8	Buobini <u>Mo</u> : 'the old hole'	8°04'N 1°44'W

It may be noted that only one rock-shelter had ever been excavated in Ghana before, the Bosumpra cave at Abetifi dug by Shaw in 1943.*

Buobini Culture

The earliest culture we have been able to identify so far we propose to call the Buobini culture, after the rock-shelter K8 where it is best represented. It occurs also at K1, in the lower of two cave-earths (layer 9), and at K6 Onyame Bekyere. Radiocarbon dates shortly to be published (see postscript) suggest that the Buobini culture came to an end at K1 about 1600 B.C.

The pottery is immediately recognizable. Almost every sherd bears some decoration, with typical motifs including cord-impressed lines and rough overall stabbed ornament. Harder to analyse is the prolific small-scale flake industry - 'microlithic' in none but the vaguest sense. The only tools recognized so far are a few lunates and other backed pieces. There are no polished stone axes - two small fragments from near the surface at K8 must be regarded as suspect - no stone rasps, no querns or rubbers.

Two burials were found: one from K8 (K8-A), the other, only partly excavated this season, from K6. Also from K8 comes most of a skull with the mandible and a few other scattered bones, probably from a disturbed burial (K8-B). The K8-A burial was that of a young man. The skeleton lay on its left side, in a flexed position, with the head to the

* Proc. Prehist. Soc. 10 (1944), 1-67.

northeast. Four beads of polished bone were found by the right wrist, two by the left, and one rather larger beneath the left upper arm. So far as we could tell, the K6 burial lay in a similar attitude, on its left side with the head to the north-east. Around the neck was a string of tiny shell beads. Both this burial and the scattered burial K8-B are thought to be of adult women. Both seem, moreover, to have undergone a similar mutilation which may well prove to be a regular feature of this culture: K6 had had seven of its incisors extracted at an early age, K8-B all its upper incisors and canines.

Stone Axe Culture

The Stone Axe culture at K6 Onyame Bekyere extends through 3½ - 4 feet of finely stratified deposit, an accumulation of floors interleaved with spreads of ash and domestic rubbish. A small surface collection from K8 is also assigned to this culture. Presumably it is from this occupation that the 2 small axe fragments noted above as suspect are derived. At K6, and apparently also at K1, the Stone Axe culture overlies Buobini levels; and it was shown at K6 to be almost certainly intrusive, not a local development.

The pottery is altogether different from Buobini material. Even with small samples there is no room for confusion. Heavy rolled rims and plain incurved rims with a zone of oblique comb-impressed decoration on the shoulder are especially common. Polished greenstone axe-blades, stone rasps,* and a few rubbers or grinding-stones occur.

Flaked quartz, though never completely absent, is so rare that I did at one point wonder whether iron might have been in use, if only on a limited scale. On general grounds this would point to a date within the 1st millennium A.D., possibly a little earlier. (Davies claims that iron was known at Ntereso before 1000 B.C. He is not to be taken seriously.) But radiocarbon dates for the K1 site seem to mean the Stone Axe culture is very much earlier than that. The material from the upper earth (layer 8) at K1, dated roughly to 1600 - 1200 B.C. resists exact classification, but is at least broadly comparable with the Stone Axe culture at K6 - stone axes, a small proportion of quartz, and pottery which, in some details if not in overall aspect, can be paralleled at this latter site.

* These are objects of the kind which Davies calls "terracotta cigars".

The term Stone Axe culture is, I should point out, only a temporary expedient. Not improbably this culture will prove to be the same as that, nowhere very adequately defined, which Davies called "Kintampo-neolithic". If so, the term Kintampo culture would be preferable.

Ancestral Mo

'Ancestral Mo' is for the moment a rather loosely defined term, but the pottery to which it applies is quite different from earlier material, and has certain distinctive traits of its own. Comb-impressed swags around the rim, for instance, are a characteristic feature. At K6 Ancestral Mo pottery is associated with tobacco-pipes datable probably to the latter half of the 17th century. When pottery of this style first came into use, on the other hand, is a question to which no firm answer can yet be given; though a southward movement of Grusi-speaking people into this area towards the beginning of the present millennium might be inferred from linguistic evidence.*

Conclusions

Our work this season was on a small scale, designed to test the archaeological potential of the area in general, and of caves and rock-shelters in particular. We hoped to recover the outlines of the cultural sequence, not to fill in all the detail. Judged on these terms, the work was extremely successful. It was particularly gratifying to find organic material so well preserved - including the Buobini culture burials which are of some incidental interest as the oldest human skeletons yet known from Ghana. Some of the finds are now on exhibition in the Archaeology Department, where those interested are welcome to see for themselves.

Much of course remains unknown or uncertain which only large-scale horizontal excavation can determine. It is very important, for instance, to define more fully the character and economic status of the Stone Axe culture, and further work is planned to this end next year at the K6 site. This is an enormous rock-shelter, of which so far only a tiny fraction has been excavated. All three cultures described

* Bendor-Samuel, Wilson, Swadesh and Swadesh: "A preliminary glottochronology of Gur languages", a paper read at the 5th West African Languages Congress, Legon, 1965.

above occur here in stratified relationship, with tobacco-pipes neatly dating the latest levels.

There are implications of wider scope as well. It is hard to avoid the conclusion that much previous research has been sadly misconceived. Too much has been made of evidence of a kind which really does not allow any concise interpretation. The time is not ripe for synthesis. What we need first is a series of well-documented, well-dated local sequences like that we begin to piece together for the Kintampo area. And in this work caves and rock-shelters deserve to play a leading part.

Postscript

Three radiocarbon dates are now available for K1, the site excavated partly by Philip Rahtz, partly by me.

I-2697	1270 <u>+</u> 110 B.C.	top of layer 8
I-2698	1610 <u>+</u> 100 B.C.	bottom of layer 8
I-2699	1580 <u>+</u> 100 B.C.	near bottom of layer 9

Layer 9 is confidently assigned to the Buobini culture; layer 8 is less easy to classify, but resembles the Stone Axe (= Kintampo) culture in a general way, and in certain points of detail.

Two more dates are still to come, relating to Buobini culture levels at K6 and K8.

Resumé

Kintampo 1967

par

Colin Flight

Je donne un exposé des fouilles faites par Philip Rahtz et moi-même dans les grottes et abris sous roche près de Kintampo. Ces fouilles étaient exploratives, mais nous avons fait des conclusions tentatives qu'il y a trois civilisations successives, stratigraphiquement établies, et nous avons des indications de la date. La plus ancienne, nommée la civilisation de Buobini, avec une industrie de petits éclats prolifique et quelques segments de cercle et lamelles à dos abattu, a une poterie distinctive ornée de lignes de corde et des impressions piquées; il n'y a pas de pierres polies. Les dates de radio-carbone indiquent que ce civilisation prit fin vers 1600 av.J.-C. La civilisation prochaine a été nommée provisoirement le 'Stone Axe Culture', avec des haches polies, quelques meules et des éclats en quartz très rares; la poterie distinctive est à bords épais ou courbés et souvent à une zone d'impressions obliques de peigne sur l'épaule. Peut-être cette civilisation est-elle la même que celle de Davies, nommée 'Kintampo Culture' mais pas assez définie. Dans les niveaux supérieurs il y a une civilisation nommée tentativement 'Ancestral Mo', dont la poterie distinctive a des impressions à peigne en boucles autour du bord; elle est associée avec des pipes à fumer probablement datables dans la deuxième moitié du XVIIe siècle.

MA

HUMAN SKELETAL MATERIAL AND ITS ANALYSIS

by

Geoffrey Gaberty

In West Africa, human skeletal material is very rare in archaeological deposits. Its rarity makes necessary the utmost care in its excavation, description, and interpretation.

There are two useful guides available to the excavator at present: Brothwell's Digging Up Bones (B.M.(N.H.)) and Anderson's The Human Skeleton - A Manual for Archaeologists (National Museum of Canada). The latter, used in conjunction with a prepared skeleton, is especially helpful in teaching oneself the rudiments of skeletal anatomy, which knowledge greatly increases one's efficiency in cleaning skeletons in the field. Such cleaning is to be preferred to lifting the skeleton intact in its matrix, since the latter may contract on drying or may harden to such an extent that development of the bones in the laboratory becomes extremely difficult. No attempt at reconstruction should be made in the field since this often must be undone in the laboratory at the cost of further damage to the bone. Instead, associated fragments should be packed together for later reconstruction. With immature skeletons, one should search carefully for unfused epiphyses at the ends of long bones, since these are important in age determination. One should also watch for non-osteological evidence such as gall stones, kidney stones, and calcified arteries; these may actually be better preserved than the bones themselves but can easily be mistaken for natural objects, requiring laboratory analysis to establish their identity. Although the skull and mandible are the most informative bones in the body, the infracranial bones also are extremely useful: the pelvis for sex and age determination (special care being taken to preserve the pubic symphysis), the long bones for stature determination, the vertebrae for their abundance of discrete morphological traits, etc.

Two types of report may be made on skeletal material: descriptive and interpretive. The first, usually meant to accompany the site report, is simply a means of putting on record the bones present and some basic observations made on them. Such a report can be prepared adequately by most anatomists, providing the archaeologist can find one sufficiently interested, or even by the archaeologist himself

with the aforementioned guides. Often this is as far as osteological analysis goes, with the result that much potentially valuable information is lost to the archaeologist. The principal reason for this is that an interpretive report, attempting to compare the skeletons with material from other sites or with living peoples, requires specialized techniques which few anatomists or human biologists command.

Comparison with living peoples, of special interest to Iron Age archaeologists, is particularly difficult since modern "races" are usually defined, if at all, by somatological or serological criteria. My present research is intended to bridge this gap between the living and their predecessors by studying collections of skeletons of known sex, age, and tribe, located in the anatomy departments at the Universities of Ibadan and the Witwatersrand, and Makerere University College. I am taking care to work only with well defined populations, i.e. members of one tribe or speakers of one language, in order to establish the range of variation present within such groups, as well as the differences between groups from widely separated parts of Africa. In addition to traditional osteometry, I am recording dental pathology, useful in determining diet, and the incidence of discrete or discontinuous morphological traits.

These discrete traits deserve special mention since, although their use has been advocated by many workers in the past, they have been extensively employed only in the last few years. Brothwell discusses their nature and use on pp. 93-100 of the work cited above. In brief, they are variations in the morphology of certain parts of the skeleton, variations which are either present or absent, such as Wormian bones in the cranial sutures, or the septal aperture between the olecranon and coronoid fossae on the humerus. Their incidence may be expressed as a percentage frequency in a given population. These frequencies differ from one population to another and may be used as a measure of population distance, probably being more reliable for this purpose than ordinary measurements or indices. Unlike osteometrical observations, discrete traits appear to be quite simple in their mode of inheritance. Finally, they are usable on fragmentary material which would be impossible to measure.

The list of such traits has grown steadily; in my present survey I am recording more than a hundred of them. This large number is necessary for two reasons. First, the frequency of an individual trait may be identical in unrelated groups; it is the systematic occurrence of a cluster of traits that is important. Secondly, in archaeological material, some of the diagnostic areas may be damaged or missing.

Because this technique has flourished only recently, examples of its application to archaeological problems are rare in the literature. Only one study will be mentioned here, J. E. Anderson's work on skeletons from the Serpent Mound near Peterborough, Ontario, Canada. His full report is still in the press, but some preliminary results have appeared in the form of a lengthy abstract in the September 1965 issue of the American Journal of Physical Anthropology. Using observations of discrete traits, Anderson was able to discover from the burials a chronological sequence which was independently confirmed by the archaeology. Once the sequence was established, he was also able to place individual skeletons in their correct chronological groups in almost all cases.

When I have acquired a picture of the distribution of discrete traits in Africans at the present time level, I hope to test the applicability of Anderson's methods to African archaeology. As a start, I will be analyzing the large quantity of skeletal material from Graham Connah's excavations at Daima, which offers a situation comparable to that at Serpent Mound. Since a sequence established in one locality probably does not have general validity, I am also interested in obtaining skeletal material from other sites in Africa. The antiquity of such material is not important so long as its age is known and it is in an archaeological context. Large samples are desirable, but there is some hope of applying these methods even to single burials.

Resumé

L'Analyse des Squelettes Humains

par

Geoffrey Gaherty

Les squelettes humains sont si rares dans les gisements archéologiques de l'Ouest africain qu'on doit les déblayer, les décrire et les interpréter avec le plus grand soin possible. On donne des conseils au sujet des fouilles et on parle en faveur de se servir des techniques interprétatives autant que possible au lieu de la description seule. La comparaison des squelettes archéologiques avec ceux des peuples vivants concerne fort l'Age de Fer en Afrique. Pour faire ces comparaisons l'examen des traits discrètes, peu utilisé jusque maintenant, pourra être très utile. C'est l'objet de mes travaux actuels.

THE PAINTED POTTERY SEQUENCE IN THE VOLTA BASIN

by

Duncan Mathewson

For a long time now the occurrence of painted pottery has been noted in Central Gonja.¹ However, as much of this work was based almost entirely upon surface finds, subsequent excavations over the past three years have made this preliminary survey somewhat out of date. The purpose of this note is to summarise briefly some of the recent information concerning the occurrence, distribution, and variation of painted pottery. As there is still much to be worked out, some of this must remain tentative and therefore liable for revision. However, the broad pattern which has emerged will, I think, hold.

Excavations on five mound sites within Central Gonja have established that painted pottery is directly associated with mounds and should be considered as an integral part of the Gonja cultural complex.

These mounds stretch right across Central Gonja and extend as far as the Tamale-Yeji road.² The majority of these mounds represent the collapsed remains of tower-houses which in many cases probably represent several periods of occupation.³ These structures were composed of small rectangular rooms and were at least two storeys high.

Bilegas also seem to be part of the same complex, although it is quite possible that they were initially a Dagomba feature which was later adapted by the Gonja. Bilegas are cisterns which have been cut through the surface laterite and into the soft decomposed bedrock. Their distribution is uncertain, but they are commonly found in association with mounds which are situated in areas that lack an alternative water supply. These cisterns permitted permanent settlement in many areas where it would have been otherwise impossible to maintain; and there can be no doubt of their great importance in providing a reliable water supply through the long dry season.

It has become apparent that the distribution of painted pottery is far more widespread than it once was thought, and we are now able to sub-divide it into two main types.

The painted pottery which is associated with the mounds, I propose to call the Deber type; after the Gonja sub-division

which denotes the general area of the Volta confluence. The distribution of this painted pottery stretches more or less from Bole, straight across Central Gonja, as far East as the river Daka. Apart from the Banka Road site, this type of painted pottery does not exist in any quantity east of this river. Its northern extension is not at all clear, but its southern margin is just south of the Black Volta.⁴ This would be a line running roughly from the Kadelso area south-eastwards to the vicinity of Prang. The area north of Prang up to the Sheribong site, has not been extensively surveyed, but I believe we will find that this area should be included in the distribution of the Deber type.

This pottery type includes a wide assortment of simple geometric designs executed in purplish-red paint, which in most cases is probably applied as a post-firing technique. It occurs on many different types of wares, and when these are defined and plotted, they will hopefully help to give a better understanding of the inter-relationship and significance of the stylistic variations.

One of the most common forms of decoration is broad lines painted across the body and rim of the pot, which is usually accompanied by varying geometric motifs of hatchings and crosses. More elaborate designs do exist, especially at the New Buipe site; some of which are accompanied by simple impressed and incised decoration.

The great variation which exists in both style and form in the painted designs has not yet been worked out. How these might be chronologically related is at present uncertain. But it seems that within this painted pottery complex, there existed contemporary groups of settlements having their own individual styles of painted decoration which were consciously different from one another. Future work, especially with the sequence at New Buipe, may, however, make more sense of these varying decorative styles.

Both the excavations at the mound sites of Krunkrunnboi and New Buipe have revealed that the earliest painted pottery is pre-pipe, and therefore, is certainly earlier than the mid-17th century.⁵

The total absence of pipes from the mound excavations at Asumpe, Kisoto and Juni suggests that many of the mounds in Central Gonja may date to the mid-16th century, if not earlier.⁶ Both the mounds at Kisoto and Juni are about twenty feet high and represent several distinct periods of occupation. As most

of this accumulated deposit represents collapsed mud-walls of storied structures, the build-up may in fact have occurred in a relatively short period. I think one must allow at least a hundred years, possibly more, for the successive periods of occupation, the subsequent collapse of the structures and their final abandonment. The present evidence suggests that the successive build-up would have had to occur prior to the mid-17th century and the local introduction of the pipe.

The second type of painted pottery is what I propose to call the Krachi type, as it appears to be geographically limited to the general Krachi area. This pottery is very common at Bagjamso and in the upper levels of the habitation deposit at Kitare. Numerous surface sherds of it were recently collected off the two large sites at Kajaji and Kwanyase.⁷ These sites are located along the Atebubu-Krachi road, as well as the two other very large sites of Keya-abutu and Kumpu, which appears to have been the 17th century capital site of the Nchumuru.⁸

This type of pottery commonly has red painted lineal designs over an incised or impressed decoration. In most cases, it appears as if the painted designs are a secondary decorative effect, with little or no aesthetic appreciation for its accompanying inscribed motifs.

The incised and impressed decoration must represent a tradition long ante-dating the arrival of the painting technique. This is clearly indicated by the twisted cord and maize cob decoration, as well as, the very common incised half-moon motif. Paint is lavishly applied on rims and necks of pottery in a way which represents a different concept altogether in stylistic form.

The associated wares of the painted Krachi type are completely different from the widespread light buff and orange wares which are common in the Deber type.

The Krachi pottery type is dated by the pipes at Bagjamso to the late 17th-late 18th century. Further dating evidence has come from the C-14 dates of the upper occupation levels at Kitare which indicate a probable early to mid-18th century date.⁹

The geographical distribution in the contiguous area of these two types of painted pottery, and their temporal sequential changes, strongly suggest that the Krachi painted pottery reflects, to some degree, the actual cultural impact of the

conquering and politically dominant Gonja upon the indigenous peoples, who lived along the eastern and southern periphery of the Gonja state.

In a limited sense, this must include the Krachi and Nawuri peoples, but the distribution of the pottery type suggests that it was primarily the Nchumuru, who having been in close association with the Gonja, became acculturated to a greater degree.

Davies (1964) has pointed out that there is a strong resemblance between the painted pottery of Gonja and the painted pottery from Koumbi Saleh. However, far more interesting than this, was the painted sherd he mentioned as having come from Begho.¹⁰

A quick surface survey was recently made of several sites in the Namasa area, which subsequently has shown that this single painted sherd is by no means a unique find.

A site just North-East of Namasa revealed a large area of extensive habitation and is included in the Dumpo Quarter of Begho.¹¹ Occupation refuse mounds of about six feet high exist over a large area, much of which is now planted over with plantain.¹² The surface collection, which is dated by pipes to probably the late 17th century, includes one painted sherd.

Although quite small, this sherd is one of the finest examples of painting technique which has so far been collected. The fabric is well-fired, smoothly burnished, and tanish-yellow in colour. The decoration consists of both internal and external lineal red painted designs in which the lines are about four millimetres in thickness. The external painted design takes the form of vertical lines running down from the rim: while the internal design consists of horizontal lines in groups of three which run around the inside body of the pot. The delicate painted lines indicate a spreading medium of high quality; the application of which must have been carried out with a fine-tipped brush.

Another site which yielded painted pottery is old Bima, which is about three miles south-east of the present day village of Bima.¹³ This is a very extensive site covering a large area on both sides of the river Chen. One painted sherd was collected from the surface of one of several six to seven feet high occupation mounds which occur south of the river. Although these refuse mounds are a conspicuous feature of this

site, widespread scatter of surface pottery exists in localized concentrations for over one-quarter of a mile on either side of the Chen. In one of these pottery concentrations, six painted sherds were collected.

These sherds display various painted lineal designs in which one is of particular interest. It is a geometric design composed of closely spaced horizontal lines which truncate similar diagonal lines. This type of painted motif is quite common throughout the Deber pottery type and might represent an earlier motif proto-type.¹⁴

It has been firmly established that by the 15th century strong Mande penetration had occurred in this area, resulting in the establishment of Begho, as an important trading link with the western Sudan.¹⁵ Both oral tradition and linguistic studies confirm the existence of numerous Mande speaking peoples in the Banda-Begho area¹⁶ and I think it is quite likely that the occurrence of painted pottery in this early context suggests that it was introduced into Ghana by one or several of these Mande speaking groups which colonized Begho and its surrounding area. If this is so, the Deber painted pottery most certainly derives from this earlier Mande tradition, which had established itself in the Begho area at least one hundred and fifty years before the explosion of the Gonja out into Central Ghana in the mid-16th century.

There is no doubt that the existence of painted pottery in period III at the New Buipe mounds indicate a painting technique which is pre-Gonja.¹⁷ Although it is only represented by a few sherds, two complex geometric motifs are present which do not occur in the upper levels of the painted pottery sequence. It is quite clear that this sophisticated painted style must have required a long history of development, which the present evidence indicates cannot have occurred locally. Therefore, it is possible that this early painted pottery represents trade contacts with the Begho area prior to local Gonja colonization.

The Gonja presence in the Banda-Begho area has been firmly established by other writers.¹⁸ What form this early association took, however, is uncertain. The presence of painted pottery in an early Dumbo context is interesting in the light of Goody's (1964) suggestion that the ruling groups of Gonja may have learnt their Guang language in the general Banda district from the indigenous Dumbo peoples.

At this stage it is difficult to ascertain how significant this association of painted pottery is with early Dumbo sites.

Admittedly, the present archaeological evidence is meagre; however, I don't think it is too fanciful to suggest that it might represent the contact that would have been necessary for the Gonja to learn their new language, and at the same time acquire the technique of painted pottery, if they were not already familiar with it.¹⁹

Although there are similarities between the painted sherds from Koumbi Saleh and some of the painted pottery in Central Ghana, one should not infer a direct line, for the similarities do not necessarily mean direct contact; but more likely represent derivation from a common pottery tradition, which originated as an early Mande element in the western Sudan, and subsequently spread through the intense activities of its trading communities.

To conclude - I think one might consider the painted pottery tradition of the Volta Basin as a series, which both geographically and chronologically, form a sequence of contiguous styles and technique; the development of which might be seen in three main steps. (1) Its initial introduction, as a Mande element, into the Begho area during the early 15th century; (2) Its later development into the Deber painted pottery type of 16th and 17th century Gonja; and (3) The later transmission of the painting technique to the peoples of the Krachi area, resulting in the 18th century Krachi pottery type.²⁰

FOOT NOTES:

1. Davies, O. "Gonja Painted Pottery", Trans. Hist. Soc. of Ghana, Vol. III, 1964.
2. There is a definite concentration within the area of the Volta confluence.
3. Mathewson, D. Archaeology in the Volta Basin - 1963-66, Legon, 1967.
4. Davies (1964) reports finding several sherds in the lower levels at Akroso Beposo and Calvocoressi has recently found one painted sherd at Duffor Adidome, a midden on the lower Volta which he roughly dates by associated pipes to mid-17th century. These sherds probably represent trade down the Volta.

5. Flight, C. and York, R. Archaeology in the Volta Basin - 1963-66, Legon, 1967.
6. Seven stratified charcoal samples have been collected from the Juni mound which hopefully will soon be radio-carbon dated. In addition selected sherds will be sent for thermoluminescent dating.
7. The presence of bilegas at the Kwanyase site is presently their most southern occurrence. Other bilegas are thought to occur at Keya-abutu, Kumpu and north of the Prang-Abease road.
8. Oral tradition recorded by Kumah, J.
9. I-2532 205 \pm 100 1745 A.D.
I-2531 245 \pm 125 1705 A.D.
10. The Quarter is uncertain and is only noted as coming from near Hani.
11. Ozanne, P. Unpublished MS., I.A.S., Legon. This is the same site that Goody (1964) and possibly Wilks (1961) visited.
12. Oral tradition at Namasa and Menji suggest a strong association between the Hwela and Dumbo peoples and both claim autochthonous status. The Hwela at Namasa claim to have lived at this site in the past.
13. Oral tradition from Bolfe, Menji and Bima indicate that the site was a twin-city composed of muslim (Hwela-Ligby) Quarter, and a pagan (Dumbo) Quarter, constituting a large community which had trade relations with Begho. Joint note with Bravmann, forthcoming.
14. The date of the old Bima site is uncertain, but the oral tradition and refuse mounds suggest a possible late 15th and 16th century date.
15. Wilks, I. "The Northern Factor in Ashanti History" (1961).
16. Goody, J. "The Mande and the Akan Hinterland". The Historian in Tropical Africa. Ed. Vansina, Mauny and Thomas (1964).

17. York believes that Period IV, which immediately follows a destruction layer represents initial Gonja contact.
18. Goody, J. (1964); Wilks, I. (1961) (1966).
19. This assumes that they arrived in the area as armed cavalry and met Dyula-Hwela and Dumbo peoples who were already familiar with the painting technique.
20. My sincere thanks to my assistant, K. Benneh, who has greatly contributed to this work.

Resumé

La Poterie Peinte du Bassin de la Volta

par

Duncan Mathewson

La poterie peinte trouvée a la surface de la terre en Gonja centrale, au nord du Ghana, est connue depuis longtemps. Des fouilles récentes nous ont donné des renseignements nouveaux, qui indiquent une série de trois étages:

- 1) L'introduction primaire, comme élément Mande, dans le cercle de Begho pendant la première partie du XVe siècle.
- 2) Plus tard la poterie peinte évolua vers le 'type Deber' du XVIe et XVIIe siècles en Gonja.
- 3) Plus tard encore la technique de la poterie peinte était transmise aux gens du cercle de Krachi, événement qui donna lieu aux types de poterie de Krachi du XVIIIe siècle.

EXCAVATION AT ASEJIRE

by

Kunle Oyenuga and Paul Ozanne

We are working on a stone age site twenty miles away, which conference members may like to visit. It was discovered last December by Professor Thurstan Shaw when examining the exposures made for the Asejire Dam in company with Dr. Folster. Both have helped us greatly throughout our study of it.

'Middle Stone Age' artefacts lie in a precise geomorphological context: on a clean major erosion floor, covered, apparently, by a complete sequence of the subsequent history of soil formation. The sequence fits perfectly with the longer one of the area (within half a mile), which the intensive work of the bull-dozer and Dr. Folster has made exceptionally clear and detailed. Dating this sequence, roughly, by the few scraps of information we have of the climatic history of West Africa, we are forced to surmise that the 'Middle Stone Age' material dates from either long before, or long after, 10,000 B.C., and the later date is overwhelmingly probable. The fourth-millennium B.C. radiocarbon dates for 'Middle Stone Age' material from Zenebi and, by implication, from Takoradi should not be completely dismissed, as they tend to be. A second important inference arises from the fact that we have two very distinct industries, separated in position but stratigraphically associated, the one a fine industry, nearly of microlithic type, and the other a rougher one, of true 'Middle Stone Age' appearance: we infer that it is unsatisfactory to assume that these two types of industry must be of different date, even when they are isolate. 'Man begins to specialise': 'MSA' assemblages may give perfect images of this.

In this area, gneiss has weathered into blue clay, and in places this is cut by pegmatite veins, resistant to erosion, and standing like walls. At a spot where pegmatite veins are prolific, an irregular hollow has been scoured from the rotted-gneiss blue clay between them; this probably happened at about the same time as a hill-soil in the area containing Sangoan material was eroded. Later, a sandy hill-wash accumulated on the slopes, and extended into the hollow. During a wet period, this hill-wash was cemented; also, the river, at a higher level than today, cut into the pegmatite cliff beside the hollow and deposited a gravel, consisting mainly of sand and rubble at its base, changing upwards into well-rolled small pebbles.

A dry period followed, and the exposed cliffs and bordering slopes were eroded, adjusting to the new river level; the cemented hill-wash was cut into, and nearly all of it was removed from the hollow. On the floor of this rejuvenated hollow, whilst it was still clean, medium- and large-sized tools were made, mostly roughly, from quartz of mediocre quality derived from the pegmatite, from quartz veins and from very ancient river-pebbles found in the cemented hill-wash; and in one part much finer tools were made from small pebbles (some of which are perfectly glassy) taken from the river gravel formed in the preceding stage. The latter industry includes a crude crescent; the former, a very well-made axe-like tool.

As the climate returned to more like that of the present, the hollow was filled with a loose hill-wash. A disturbance is marked by a stone-line within this; this line is found, patchily, in the hill-wash covering the slopes beside the river. In the hollow, it is very marked, and contains, in addition to artefacts which may have been derived from deposits of the industries mentioned in the previous paragraph, a few sherds; and a ground gneiss celt found 20 cm. below the stone-line may have sunk down from it. A few centimetres above this stone-line another one occurs, very patchy, and containing a lot of pottery. On the whole, it seems that the disturbance causing this stone-line was not climatic, but human clearance of the area.

This apparent climatic sequence for later periods, really wet - rather dry - oscillating about the present type, is reflected and not contradicted in other parts of south-western Nigeria, and may be regarded as significant. Although it is dangerous to speculate 'right' dates for this sequence, it is no more so than to regard such dates as that from Zenebi as 'unsatisfactory'. It is possible that the very wet phase during which the Asejire pebble gravel was deposited was the one in which most West African caves and rock-shelters were cut - these all seem to be of Recent date, geologically. In coastal areas, where water is removed hydrographically, the water levels would have fallen immediately the wet air currents responsible for the wet phase weakened, and the caves would become suitable for occupation. The radiocarbon dates from near the floor of the Iwo Eleru shelter hint that the beginning of the weakening of the wet air currents was somewhere around 10,000 or 7,500 B.C. In an evaporating basin like that of Lake Chad, however, where water can only be removed meteorologically, water levels would continue to rise, though at decreasing rate, until the wet air currents became weaker than

the ones carrying moisture away; Dr. Hugot suggests 7000-5000 for the maximum extension of Lake Chad, and the ancient Middle Niger evaporation basin is believed to have survived into the fourth millenium B.C. Thus, for the onset of a positively dry period, in which the Asejire hollow could have been rejuvenated and the 'Middle Stone Age' artefacts made, we are led towards a date for the 'MSA' like that indicated by the Zenebi and Takoradi carbon samples.

Resumé

Les Fouilles d'Asejire

par

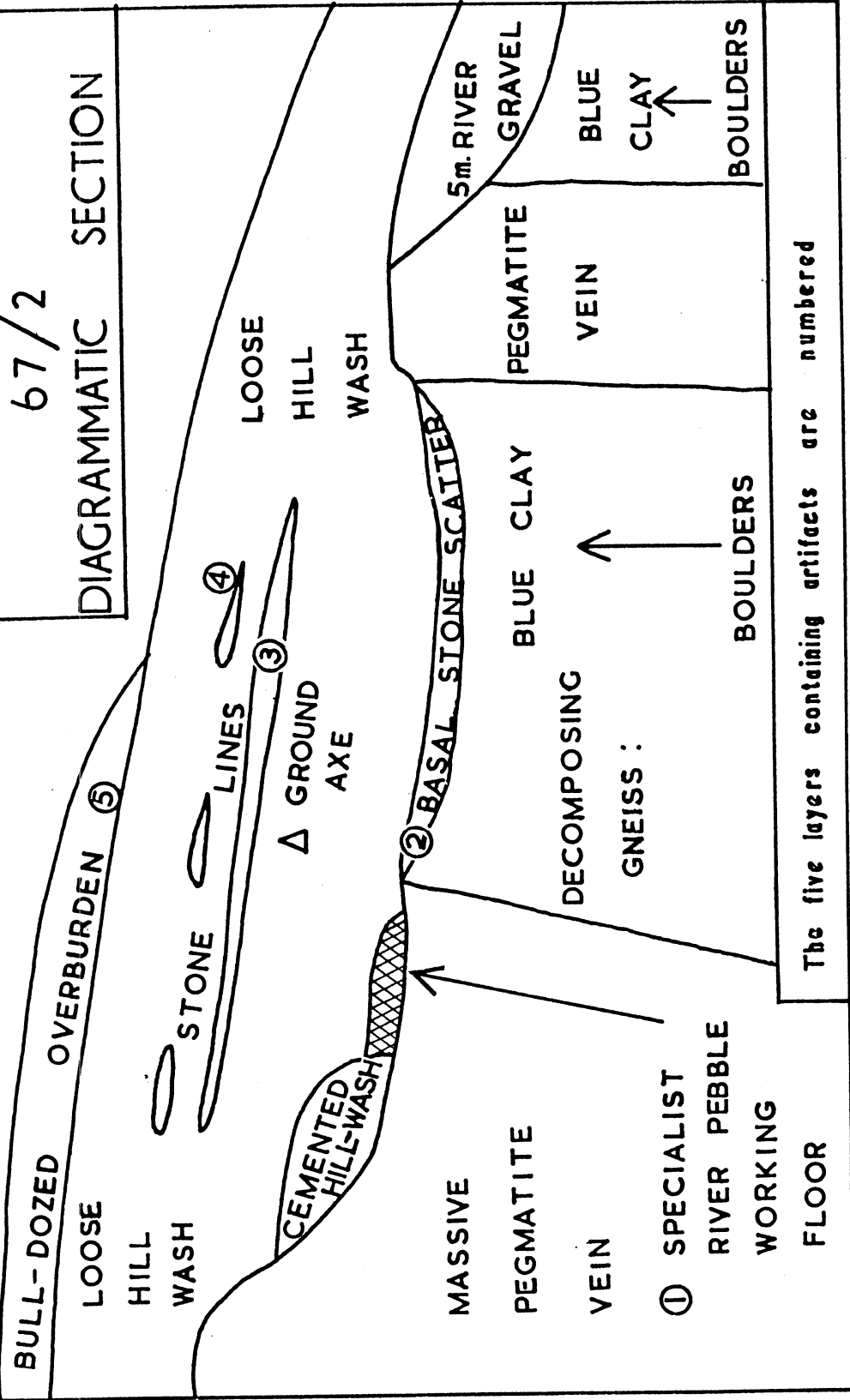
Kunle Oyenuga et Paul Ozanne

Nous travaillons dans un gisement de l'Age de Pierre découvert par M. le Professeur Thurstan Shaw dans la carrière du Barrage d'Asejire. Au fond il y a de gneiss décomposé, coupé par des filons de pegmatite, et au-dessus une série compliquée de couches qui contiennent quelques assemblages d'outils variés. Il semble que ces couches indiquent une suite climatique de temps très humide, assez aride, et une oscillation autour du climat actuel. On propose une date assez tard pour les outils de 'Middle Stone Age' qui ont été découverts; cette date conviendrait à ceux de Zenebi et de Takoradi.

ASEJIRE EXCAVATION

67/2

DIAGRAMMATIC SECTION



The five layers containing artifacts are numbered

STRATIGRAPHY OF SLOPE DEPOSITS AT ASEJIRE

by

H. Folster

A cross-section of the soil cover on the E bank of the Oshun River can be found in the attached graph (lower slope section II). Its stratification results from a sequence of erosional/depositional events separated by comparatively stable periods of soil formation, which show the imprint of wet conditions. Similar stratigraphic sections have been encountered W of Asejire in the trench for the pipeline to Ibadan.

There are two major erosion floors (X and Y) telescoping onto a former river bed containing a thin floor cover of pebbles and angular quartz gravel (2 Sangoan-like artefacts). Where the rock floor consists of metabasic rock, it is weathered to a bluish clay, while pegmatites tend to form elevations. This also applies to the lower erosion floor (X) on the slope which is covered by a quartz stone line. The erosion process ended with a complete covering of the erosion floor by a thick hillwash deposit.

During the consecutive stable period, wetter conditions directed a flow of lateral seepage water from the deeper layers of weathering rock and pisolitic gravel deposits upslope (I) into this hillwash deposit carrying with it large amounts of iron which precipitated here to form mottles and concretions, and finally produced an advanced degree of cementation (cemented hillwash). Where the underlying stone line extends into a thicker gravel layer, this may be cemented too (see I).

This soil formation period was interrupted by an erosion (erosion floor Y) that cuts across the cemented hillwash. The undisturbed rest of it thins out towards the river. The erosional character of this irregular surface is clearly demonstrated by the abrupt demarcation between the cemented hillwash below and the loose hillwash above, by a residual stone line of disrupted concretions (upper part of II), individual boulders and stones of comparatively fresh appearance and MSA implements on the erosion floor. In other places, a gravel deposit derived from disrupted cemented hillwash is found overlying the pebble-gravel spread in the former river bed. Again, this erosion period ended with the deposition of a hillwash cover. This cover only shows weak mottling in its lower parts, and an intermittent stone line, about 2 - 3 feet

below surface. The latter is so common in the extended region (Ife to Ibadan), that it assumes stratigraphic - though not necessarily climatic - significance.

Several hundred meters upslope (section I), the erosion floor X cuts across another deposit, a pisolitic gravel, quite strongly cemented, which results from an earlier phase of erosion-deposition and a consecutive soil formation (cementation). The full sequence, thus, is:

- B1 - erosion - main landforming process, gravel deposits on slopes (older soils are frequently found N of the watershed, S of it, however, only under exceptional circumstances).
- B2 - soil formation-cementation of B1-gravel in section I.
- A1 - erosion - slight lowering of land surface with erosion floor X cutting across cemented B1-gravel, deposition of stone line and/or loose gravel. Final covering with hillwash.
- A2 a - soil formation -cementation of A1-gravel and -hillwash.
- A2 b - erosion - (close to river) with erosion floor Y cutting across cemented hillwash.
- A2 c - deposition of hillwash.
- A2 d - stone line (doubtful climatic significance).
- A2 e - deposition of hillwash.
- A2 f - soil formation (weak mottling and bleaching of surface horizon in hillwash A2 e).

Sangoan-like artefacts are found in A1 and possibly in B1, also beyond the immediate area of Asejire, while MSA artefacts belong to the A2 b-phase. It is tempting and probably justified to correlate A2 a in a general way with the wet period established in Niger, which is supposed to have changed after 8000 B.P. Any attempt towards closer correlation, however, seems doubtful because of the uncertainty of long range comparison of climatic changes, and the exact placement of a) erosion and b) covering with hillwash within the climatic change: wetter - drier - wetter. A correlation of the former stages of the river bed with sea terraces is not possible.

Resumé

La Stratigraphie du Côte d'Asejire

par

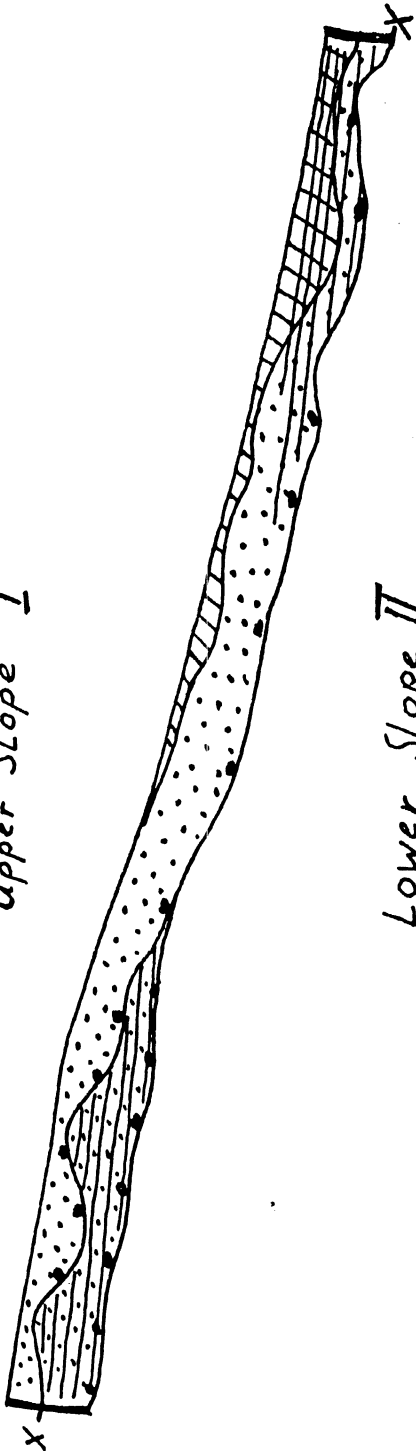
H. Folster

La série est comme suite:

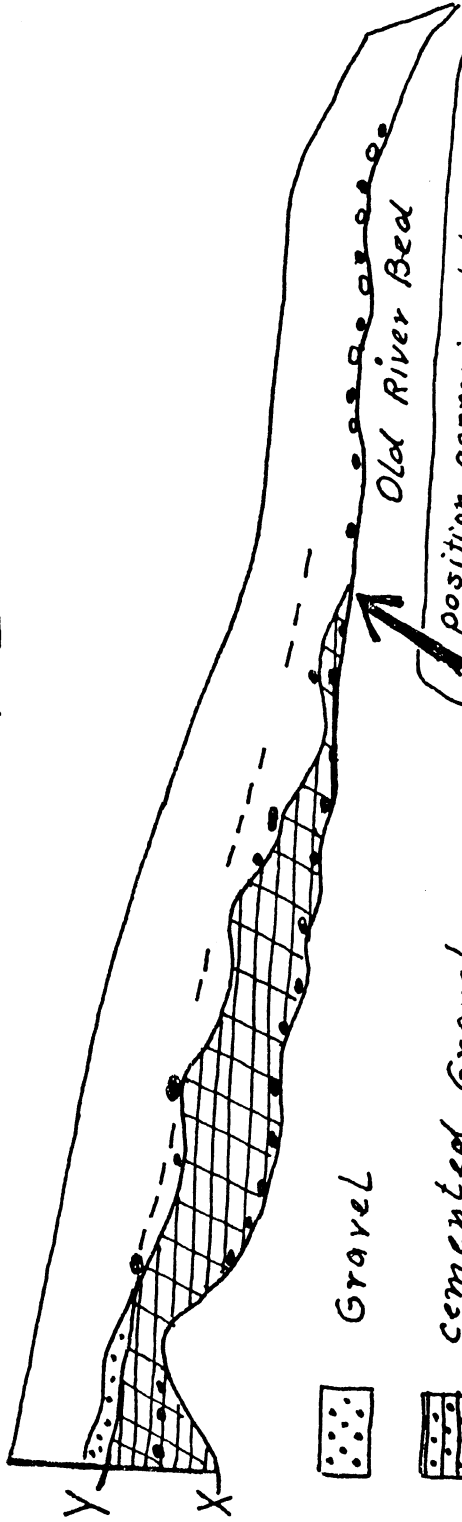
- B 1 - érosion
- B 2 - formation de sol
- A 1 - érosion; couverture de colluvions
- A 2a - formation de sol; cimentation des graviers de A 1 et de colluvions
- A 2b - érosion à travers colluvions cimentés
- A 2c - colluvions
- A 2d - ligne de pierres
- A 2e - colluvions
- A 2f - formation de sol

Des outils du type Sangoen sont trouvés dans A 1, et peut-être dans B 1; des outils du type de 'M.S.A.' appartiennent au phase A 2b, associé peut-être avec la période humide terminant après 6000 av.J.-C. comme on a établi en Niger.

Upper Slope I



Lower Slope II



Gravel

cemented Gravel

Hill wash

cemented Hill wash

Old River Bed

position approximately corresponding to excavation site on W-bank

Younger Hill wash with Stone Line

Stone Line ooo River pebbles