

Discovery of an Iron Age site in Lake Ossa, Cameroonian littoral Province

*Un premier site de l'Âge du fer reconnu dans la région du Lac
Ossa, littoral camerounais*

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ABSTRACT

Relics of human activities anterior to the seventeenth century are documented for the first time in the Lake Ossa catchment basin (Cameroon Littoral Province). The remains from two sites are composed mainly of potsherds in association with iron slags, stone implements and charcoals. The charcoal samples yield ages ranging from 1290 to 1647 calendar yr. A.D. © Académie des sciences / Elsevier, Paris

Keywords: Western Africa, Cameroon, Lake Ossa basin, Late Iron Age, Potsherds

RÉSUMÉ

Dans le bassin versant du lac Ossa, situé dans la zone littorale du Cameroun, nous avons mis au jour deux sites d'occupation humaine : des fragments de poteries et des scories de réduction du fer sont associés à des charbons de bois datés entre 1290 et 1647 ans corrigés en A.D. © Académie des sciences / Elsevier, Paris

Mots clés : Afrique de l'Ouest, Cameroun, Lac Ossa, Âge récent du fer, poteries

Version abrégée (voir p. 387)

1. Introduction

Archaeological data exclusively relevant to the littoral Cameroonian area is scarce and only very little information has been published (Kadomura et al. 1986, Omi et al. 1984). For the whole southern and western Cameroonian forested area, previous results demonstrate that people began to settle in southern Cameroon at the end of the Sangoan period, around 42 000 BP, according to the Sangoan and Lumpembian stone industry found in this area (Omi and Kato, 1982). After that, human settlement can be regrouped into three major phases. Because the evolution of the different occupations are not coeval but rather discontinuous, their temporal limits are still unprecise.

– The Late Stone Age is documented in the western grass-

fields by three rock shelters (Shum Laka, Abéké and Mbi crater), whose microlithic industry remains are dated between 9000 and 5500 BP (Asombang, 1988; de Maret, 1992), while in the surroundings of Yaoundé the artifacts from Obobogo site yield one age of 6020 BP.

– Generally the first indices of sedentariness characterize the Neolithic (presence of polished implements associated with potsherds, millstones and/or *Elæis guinensis* or *Cannarium schweinfurthii* nuts). The evolution between Late Stone Age, Neolithic and Iron Age is related to Bantu migration in a N-S trend (David, 1980; Phillipson, 1984; Vansina, 1984; Warnier, 1984). In Cameroon, the Neolithic stage (de Maret, 1985, 1992) is documented between 7000 and 6000 BP at Shum Laka and Abéké, and between 3700 and 2600 BP at Obobogo. In the nearby

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northern surroundings of Yaoundé the beginning of the Neolithic is placed during the fourth millennium; we can ascertain that the real human impact of the environment might be effective even at very local scale from this time on, due to some activities as hunting and cultivating.

– In Central Atlantic Africa, the first evidences of iron smelting stretch from north to south, ages being younger going to the south. In Cameroon the ages obtained up to now correspond to the northern and southern sector of Yaoundé at Obobogo, Ndindan, Mfomakap and Okolo; they span the range 2500–2100 BP (Élouga, 1985; Es-somba, 1985; Mbida 1992).

This bibliographical review shows that, concerning the whole human settlement in south Cameroon and more precisely relatively to the Iron Age, nothing is said about the Atlantic littoral area. The results presented here are the first ones dealing with this time period and geographical area.

2. Study area location

The Lake Ossa catchment basin (245 km²) lying at about 40 km east of the Atlantic coast of the Guinean Gulf, extends from 3°45.7' to 3°53' latitude N and from 9°9' to 10°4.2' longitude E (figure 1). It is a littoral lowland located in a hilly landscape area with a flat top, characterized by a 'half-orange' shape culminating at an average altitude of 80 m, with rather strong slopes, where lacustrine depressions are enclosed (Wirmann, 1992).

Two Bakoko speaking people, the Yakalak and the Ndonga, are today the inhabitants of the area. They settled in this area during the late eighteenth century. Linguistically affiliated to the Equatorial Bantu language group, they belong to the Bantu branch, and are part of the Bénoué-Congo family, from Niger-Congo-Kordofan phylum (Greenberg, 1980; Guthrie, 1967, 1970).

Two archeological sites have been discovered at an altitude of about 70–80 m. The first one is in the upper part of the largest island of Lake Ossa, and the second one is at the top of the stretch of earth separating the lakes Ossa and Mévia. For both sites the soils belong to yellow sandy or

sandy-argillaceous ferrallitic type, issued from sedimentary rocks. On the island the vegetation corresponds to the Atlantic Littoral facies of the lowland evergreen moist forest known as Biafrean District Forest (Letouzey 1968, 1985). For the second site the anthropogenic disturbance is strongly marked: the area is now occupied by the administrative and residential center from the SAFA CAM plantation, by oil palms and an airfield.

3. Results

Test excavations of respectively 9 and 11 m² have been prospected. Pottery and stone artifacts occur in the two sites, but their distribution is not identical. Nevertheless, in both areas archaeological remains are composed mainly of potsherds (table I). X-ray diffraction and infra-red spectrometry (FTIR) analysis of some potsherds from both sites do not reveal the presence of a peculiar component in the paste. The quartz is the main component in association with traces of orthoclase, and amorphous silica. Traces of organic matter are not detected.

Table I. Number of remains from both sites.

Répartition du mobilier en fonction des sites.

Site	Potsherds	Slags	Fauna	Lithic	Charcoals
<i>Big Island</i>					
surface (B area)	5		2		
excavation (A area)	8			1	abundant
<i>Safa Cam</i>					
surface	55	28			
excavation	219		4	16	abundant
Total (%)	84.9	8.3	1.8	5	

3.1. The island site

All the artifacts were encountered between the surface and a 40 cm deep level, beyond which the soil is sterile. The lithic implement corresponds to a well preserved and

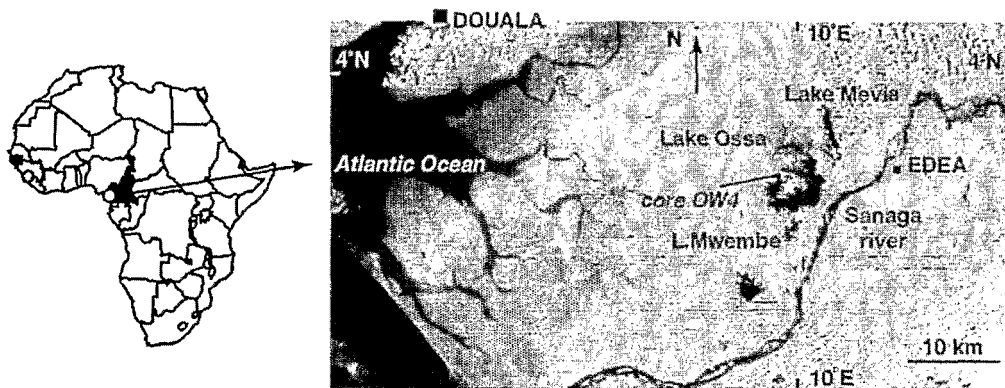


Figure 1. Lake Ossa catchment basin and location of the prospected areas (white stars).

Localisation du site d'étude et des secteurs de fouilles (étoiles blanches).

unstained micascist triangular piece; despite the fact that there is no micascist outcrop in the catchment basin, evidence of tool shaping is absent. The faunal remains consist of two gastropod shells which might be recent according to their very fresh aspect. It does not seem that the potsherds were decorated, except for two of them for which incised line traces are recognizable. The paste of all these fragments is unrefined and contains millimetrical grains of quartz, but one cannot assert that they correspond to intentional adjunctions such as tempering. The extreme fragmentation of sherds collected in this place is a hindrance to presenting pot reconstitution and classification on the base of ethnic criteria. In the same way, as the pottery industry has declined in the area, it is untimely to propose an ethnic classification of the pots. More excavations are necessary for such a purpose. The charcoals provide ages ranging from 1280 to 1666 cal. yr AD (table II). Sixty fragments were collected between 25 and 35 cm below the soil surface (square 8, site A); all correspond to the Liana *Salacia cf pyriformis* (anthracologic determination by Déchamps, Tervuren); they yield an age of 280 ± 60 BP (1520–1666 cal. yr AD). On inquiry, nowadays the inhabitants do not use this Liana as fire material. As the ethnobotanical study dealing with wood species and their use for specific domestic utilization in Cameroon (Essomba 1991) does not mention this Liana, a ritual purpose is probable.

3.2. The SAFA CAM site

The archaeological artifacts were collected in the infilling of a pit (≈ 2 m in diameter and 80 cm deep). They were associated at the surface with iron slags. The absence of food debris implies that ordinary domestic activities were not carried out in this place. Assuming that the soil condi-

tions were favorable to the conservation of such remains, this place perhaps was used as a temporary camp or as a secluded place for religious rituals. Charcoals collected from 40–60 cm and 60–80 cm below the soil surface produced dates of 510 ± 50 BP and 420 ± 50 BP respectively (1405–1441 and 1438–1611 cal. yr AD, table II). These ages are consistent with those obtained for the island site and show that both occupations were contemporary.

The lithics consist of one sub-rectangular quartz piece (6 × 3 cm), associated with the remains of partly carbonized ferrallitic crust, which probably corresponds to pieces of a cooking or iron reduction place. Two of them present one smooth face, but it is difficult to identify the tool shaping if they are domestic implements. The tertiary fragments are cylindrical, their diameters varying between 4 and 15 cm. Because they are smoky, one can assume that they were used as hearth supports like similar fragments which are still used today by the Tikar and Baveuk people from central Cameroon (department of Mbam and Kim). At present there is no evidence to indicate whether the iron slags recovered at this place were manufactured locally, or they were instead obtained from elsewhere. What is clear, however, is that knowledge of iron working had reached the inhabitants.

The characteristics of the potsherds recovered in this site can be summarized as follows (figures 2 and 3):

- over the 274 fragments, 61 (22.3 %) are decorated with single or multiple motifs;
- the recognizable shapes are represented by 4 base fragments, 27 rims and 2 sherds with a perforation, which correspond probably to the attachment of prehension ties (the border of the perforation is very sharp and clean, without traces of additive paste).

Table II. Radiocarbon sequence for charcoal fragments from the Lake Ossa basin excavations. The calibrated ages are obtained using the dendrochronologic correction factors of Stuiver and Pearson (1993) from $\delta^{13}\text{C}$ normalized ages.

Âges radiocarbone des charbons de bois de chacun des sites fouillés. Les âges calendaires sont obtenus après dendro-correction des âges normalisés $\delta^{13}\text{C}$ d'après Stuiver et Pearson (1993).

Site	Level (cm)	Laboratory number	$\delta^{13}\text{C}$ normalized age yr. BP	Calibrated age cal. yr AD	Calibrated age range (1 cal. yr AD)
<i>Island</i>					
square A8	25–35	OBDY 1107	280 ± 60	1647	1520–1569 1627–1666
square A5	0–15	OBDY 1443	700 ± 50	1290	1280–1303 1372–1382
	15–30	OBDY 1444	580 ± 40	1334, 1338, 1402	1326–1353 1360–1367 1388–1413
	30–40	OBDY 1446	440 ± 60	1443	1428–1490
<i>Safa Cam</i>					
square A3	40–60	OBDY 1487	510 ± 50	1426	1405–1441
square A2	60–80	OBDY 1488	420 ± 50	1454	1438–1488 1609–1611

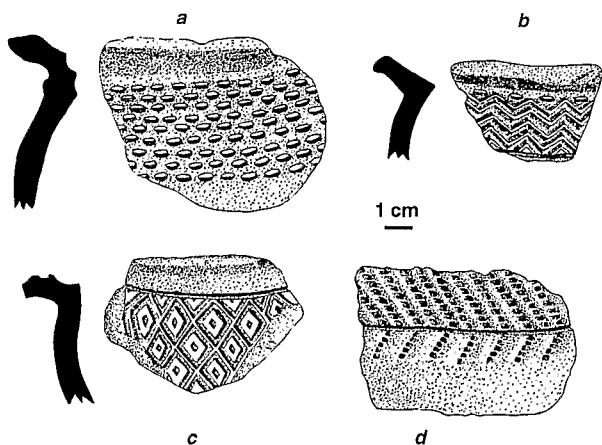


Figure 2. Examples of pottery decoration. a: Rice grain motif with inner lines, b: herring with rice grain motif, c: 'pineapple skin' motif, d: fish-bone design.

Poteries décorées a) motif en grain de riz et à lignes internes, b) chevrons et motif en grain de riz, c) motif en « peau d'ananas », d) relief en forme d'arêtes.

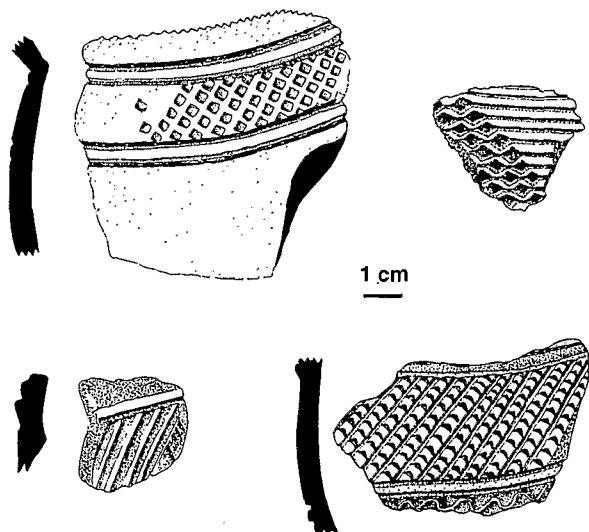


Figure 3. Examples of potsherds decorated with multiple motifs.

Poteries décorées de motifs variés combinés.

The bases present a flattened or hemispherical shape, their thicknesses varying from 11 to 27 mm. The majority of the necks are angular. The rims are either in an external or internal position in reference to the symmetrical axis of the vessel. Four of them are characterized by an external and lateral thickening, this pattern being similar to the morphologic tradition from the pottery recovered near Yaoundé and the surroundings (Atangana, 1988 ; Mbida 1992). The other ones are flattened. For two fragments, lines on the internal wall are observed, and this is the first mention of such a peculiar morphologic feature for Cameroonian ceramics (figure 3). Three lip types are represented: flattened, rounded and lightly-grooved. This typology is convergent with pottery excavated in the regions of

Obobogo, Okolo, Mfomakap and Elig Kono in central Cameroon (Atangana, 1988; Claes, 1985; Élouga 1991).

All potsherds share similar technology and fabric for surface treatments. Internal and external surfaces are polished but only a few fragments present a pinkish gray engobe (5YR 6/2–5YR 7/2). At this date, this is the second occurrence of slip coating on pottery discovered in south Cameroon, the other one corresponding to a remain recovered by Froment at Campo (Ocean Province) in 1993 (unpublished data). Therefore this pattern seems specific to the littoral area.

The two techniques used for decoration are stamping, the most frequent, and incision. It is on the shoulder that the decorative motifs are the most abundant. The variety of designs includes single or multiple lines, punctuations, rice grain relief, relief with hollow and squaring, wavy lines, diamond-shaped, herringbone pattern (figures 2 and 3). Previous studies (Élouga, 1985; Essomba, 1985; Mbida, 1992) made on excavated material from different Cameroonian sites (table III) show the same variety of designs. According to the percent of occurrences of each motif, the most common is the line design, encountered in Mfomakap, Avoh and Elig Kono archaeological sites. A comparison between Lake Ossa and these other Cameroonian areas indicates that diamond-shape reliefs are known as 'pineapple skin' in the Vouté cultural area (Élouga, 1993), the wavy lines are present in the Mfomakap ceramic remains, while the rice grain relief is only recognized for the present day pottery from the Bamessing Province (north-western Cameroon).

4. Discussion

Both sites at Lake Ossa are coeval. The ceramic industry seems to identify a specific earthenware tradition in this area, but it is only with more results that this hypothesis will be confirmed. This specificity is characterized by the rice grain and 'pineapple skin' decorative designs and by the occurrence of inner lines and engobe for a few potsherds; first mention of such a morphological feature for Cameroonian pottery. Furthermore similarities appear in styles between Ossa potsherds and those from pits sites dated from the first millennium BC. This suggests a long-term maintenance of pottery tradition.

At this date little can be said about how the inhabitants lived in the Ossa catchment basin, but the completion of sedimentological and palynological studies on core OW4 (figure 1) taken in lake Ossa allows much more to be said on the anthropization of the area. Pollen spectra (Reynaud-Farrera et al., 1996) show that the Biafrean rain forest has persisted in the area, but with perturbations, during the last 5 or 6 millennia recorded by the core. Between 3250 and 1000 cal. yr BC, a general change is marked by the lowering of arboreal pollen and the increase of several pioneer taxa and Gramineae. This phenomenon is attributed to drier conditions, which are also documented by a strong decreasing of sedimentation rates in the lake from 2750 cal. yr BC concomitant with the

Table III. Occurrences expressed in % for the main designs of pottery from archaeological sites in central Cameroon.*Répartition des motifs décoratifs de poteries (en %) pour différents sites du Cameroun central et celui du lac Ossa.*

	Rice grain	Diamond shaped	Wavy line	Squared	Indented	Dotted	Multi lined	Single lined	Fish-bone	Herring pattern
<i>Sites</i>										
Ossa	14.3	4.8	4.8	30.2	1.6	1.6	30.2	4.8	1.6	6.3
Nditam			5.5		1.8			44.4	7.4	9.2
Avoh					3	1.1		13.5	3.4	0.8
Elig Kono				12.6	6.5			59	11.4	
Mfomakap			7.7		1.6			69.5	14.5	
Nguila		10							20	

lowest lake level recorded from 2200 until 700 cal. yr BC. After that, the lake level rose until reaching its present state from ca 1500 cal. yr AD (Wirrmann et al., 1997).

Maximum dryness conditions prevailed between 2250 and 650 cal. yr BC and it is only after 1000 AD that the rain forest took its present state. Since the human colonization of a forested area is favored when the arboreal vegetation is declining, it is logical to suppose that the occupation of the Lake Ossa basin occurred preferably during the time interval 2250–650 cal. yr BC. As our results show that it is during the stage of rain forest reinstallation (after 1000 cal. yr AD) that people have been present, it is suggested that the impact of the dryness established between 2250 and 650 cal. yr BC, affected strongly the environment till 1000 cal. yr AD, inducing unfavorable conditions for human settlement in the region before this date.

Following radiocarbon chronology and archaeological evidences, the Lake Ossa area belongs to the Iron Age and must be integrated in the larger context of southern Cameroon. About forty dates obtained by previous studies for southern forested Cameroon from the littoral region inland to Yaoundé, between 2°15'–4° latitude N and 9°45'–11°40' longitude E (Élouga, 1993; Essomba, 1991; Kado-mura et al., 1986; de Maret, 1985, 1992) underline that all the ages are in concordance and that the occupation of this whole area has been developed especially during the

time intervals 1350 BC–50 AD and 950–1750 AD. This review strongly suggests a gap of occupation during the first millennium AD. Considering the number of dates, it is unlikely that this lack of information might be due only to the scarcity of the prospections. This observation leads us to suppose that between the Late Neolithic and the Late Iron Age, unfavourable environmental conditions hindered regular settlement, as is observed in the Lake Ossa watershed basin.

5. Conclusions

The human settlement in the Lake Ossa basin, documented by our results, might be considered as the last phase of peopling of the place before the arrival of Ndonga and Yakalak, immigrants from the Kwakwa region at the end of eighteenth century. Detailed, integrated case studies of ethnology and archaeology of the watershed basin are needed for a better understanding of both modern and ancient human settlements in this area and to propose regional correlations.

The probability for the existence of a specific earthenware tradition in the Ossa catchment area must be underlined. A comparison with the other traditions defined in the whole Atlantic area from Central Africa would provide more information relative to the way the Neolithic communities settled in the region.

VERSION ABRÉGÉE

Introduction

À l'exception de rares études ponctuelles (Kadomura et al., 1986; Omi et al., 1984), la région littorale atlantique est restée ignorée par les recherches archéologiques développées au Cameroun. Pour l'ensemble du massif forestier camerounais, les travaux antérieurs montrent que les premiers indices d'occupation humaine sont datés de 42 000 BP (Omi and Kato, 1982). Les phases d'occupation correspondant à l'Âge récent

de la pierre, au Néolithique et à l'Âge du fer sont documentées par quelques sites (Asombang, 1988; de Maret, 1985, 1992; David, 1980; Élouga, 1985; Essomba, 1985; Mbida, 1992; Phillipson, 1984; Vansina, 1984; Warnier, 1984).

La zone d'étude (lat. 3°50' N, long. 10° E), localisée dans le Golfe de Guinée (figure 1), correspond au bassin versant des lacs Ossa, Mévia et Mwembé (Wirrmann, 1992). Le premier site fouillé est situé au sommet de la grande île du lac Ossa, le

deuxième sur la bande de terre séparant les lacs Ossa et Mwembé. La végétation, typique du faciès atlantique littoral de la forêt sempervirente de basse altitude (Letouzey, 1968, 1985), est très dégradée sur le deuxième site.

Résultats

Le site de la grande île

Treize tessons ont été récoltés dans la grande île du lac Ossa (tableau I). Ils ne présentent aucun attribut formel permettant d'initier une typologie, et leur degré d'altération ne laisse pas supposer la présence de motifs décoratifs, bien que l'on distingue des traces de cannelures sur deux tessons. La pâte, riche en cristaux de quartz, est grossière. Le quartz ne semble pas être un dégraissant vrai, l'abondance du sable dans la région suggérant l'utilisation d'une argile naturellement riche en quartz. Ce mobilier est associé à des charbons de bois, datés entre 1280 et 1666 ans corrigés en AD (tableau II). Une soixantaine de fragments, récoltés en stratigraphie dans le carré A8 et appartenant tous à l'espèce *Salacia cf pyriformis* (identification R. Dechamps), fournissent un âge de 280 ± 60 BP (1520–1666 ans corrigés en AD). Cette liane n'étant pas utilisée de nos jours comme combustible pour la cuisson (Essomba, 1991), l'on peut se demander si elle n'avait pas un rôle rituel.

Le site de la Safa Cam

Les scories de réduction du fer ramassées en surface mises à part, l'ensemble du mobilier (tableau I) provient d'une fosse. Des charbons de bois collectés entre 40–60 cm et 60–80 cm fournissent respectivement des âges de 510 ± 50 BP et 420 ± 50 BP (1405–1441 et 1438–1611 corrigés en AD, tableau II). Les objets lithiques se composent d'un fragment de quartz sub-rectangulaire (6×3 cm) associé à des vestiges de cuirasse latéritique, carbonisés en partie. Quatre fragments de termitière, de forme cylindrique, recouverts de noir de fumée, ont également été mis au jour.

Les fragments de poteries décorés représentent 22,3 % des tessons, et les formes identifiées correspondent à quatre fragments de base, à 27 fragments de lèvres et à deux tessons perforés. Cette typologie est convergente avec celle de la céramique des régions du centre du Cameroun (Atangana, 1988 ; Claest, 1985 ; Élouga 1991). Deux lèvres présentent des lignes en relief sur leur face interne ; il s'agit de la première occurrence d'une telle morphologie pour la céramique camerounaise. Les faces externe et interne de tous les tessons sont polies, et seuls deux fragments présentent un engobe gris rose (5YR 6/2 à 5YR 7/2). Il s'agit de la deuxième mention à cette date d'un tel traitement de surface, l'autre cas correspondant à un tesson retrouvé dans la région littorale à proximité du village de Campo, à environ 120 km au sud du lac Ossa (Froment, donnée inédite).

Les techniques décoratives utilisées sont celle de l'impression et de l'incision. Les motifs se composent de divers types de lignes, de punctuations, de losanges, de chevrons et de forme d'arêtes (figures 2 et 3). Cette variété est comparable à celle décrite pour d'autres sites du Cameroun méridional et central (tableau III). Le motif le plus fréquent est celui de la ligne, reconnu également à Mfomakap, Avoh et Elig Kono (Élouga,

1992, 1993 ; Essomba, 1992 ; Mbida, 1992). La décoration en losanges est appelée motif en « peau d'ananas » dans la zone culturelle Vouté, les lignes ondulées sont connues dans la céramique de Mfomakap, et le motif en grain de riz n'est présent que dans la céramique actuelle de la région de Bamessing (Cameroun nord-ouest).

Discussion

Les similitudes observées entre les tessons récoltés à Ossa et ceux provenant de différents sites datés du premier millénaire BC (tableau III) soulignent la permanence de la tradition céramique au cours du temps. Cependant, le mobilier céramique d'Ossa, présentant pour quelques vestiges un décor en grain de riz ou en peau d'ananas et des lignes sur leur face interne et un engobe (premières mentions de telles occurrences), pourrait correspondre à une tradition spécifique de la sous-région, hypothèse qui ne pourra être validée ou infirmée que par la poursuite des prospections dans cette zone littorale. Ces résultats préliminaires ne permettent pas de dire comment les habitants vivaient dans le bassin du lac Ossa. Cependant, des informations fournies par l'analyse sédimentologique (Wirrmann et al., 1997) et palynologique (Reynaud-Farrera et al., 1996) de la carotte OW4 (figure 1), prélevée dans le lac Ossa, précisent les conditions d'environnement qui prévalaient alors. Tout au long de la période de 5 600 ans, documentée en continu par cette carotte, les spectres polliniques montrent que la forêt biafréenne a toujours été présente. Toutefois, entre 3250 et 1000 BC, une dégradation du couvert forestier est attestée par la baisse du taux de pollen d'arbre et l'augmentation relative de ceux de Graminées et de certains taxons pionniers. Cette ouverture de la forêt est attribuée à des conditions climatiques plus sèches, dont les effets se sont faits ressentir au niveau du lac : à partir de 2750 BC, les taux de sédimentation décroissent très fortement et, de 2200 à 700 BC, le lac enregistre son plus bas niveau. L'établissement des conditions actuelles hydrologiques et de végétation ne s'est produit, respectivement, qu'après 1500 AD et 1000 AD. La colonisation d'un milieu forestier étant favorisée par son ouverture, il était logique de penser que le bassin versant du lac Ossa ait été occupé dès 2000 BC. Or, ce n'est qu'après 1000 AD que des traces d'occupation sont reconnues. Ce fait traduit davantage l'impact de la sécheresse sur l'environnement qu'un manque d'information lié à l'insuffisance des prospections, le lac et la zone limitrophe ne redevenant un lieu propice de pêche et de chasse que postérieurement à 1000 AD.

Conclusions

Nos résultats montrent que l'occupation humaine du bassin versant du lac Ossa entre 1290 et 1647 ans corrigés en AD correspond vraisemblablement à la dernière phase de colonisation avant l'arrivée des Ndonga et Yakalak (affiliés au groupe Bantu : Greenberg, 1980 ; Guthrie 1967, 1970) à la fin du XVIII^e siècle, cette phase de colonisation étant favorisée par des conditions d'environnement plus favorables qu'au début du Néolithique.

Le fait que la céramique de cette région, par certaines de ses caractéristiques, puisse appartenir à une tradition spécifique

différente de celles des autres régions camerounaises est important à noter. En effet, la comparaison de ces données avec celles obtenues sur d'autres sites de la zone littorale atlantique d'Afrique centrale devrait permettre de replacer

cette tradition dans un contexte global, et de préciser si la migration du nord vers le sud des populations Bantu déjà néolithisées s'est produite dans la sous-région en suivant plutôt les rivages atlantiques que les lignes de crêtes de l'hinterland.

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