

■ CAMEROON

Preliminary results of fieldwork done by the "Ceramic and Society Project" in Cameroon, December 1995-March 1996.

Olivier P. Gosselain, Alexandre Livingstone Smith*, H el ene Wallaert*, Guy Williams Ewe** & Marc Vander Linden**

** Universit  Libre de Bruxelles
Mailing address: Section de Pr histoire
Africa Museum
B-3080 Tervuren, Belgium*

*** Universit  de Yaound  I
Facult  des Arts et Lettres
BP 6544
Yaound , Cameroon*

Background

The "Ceramic and Society Project" started in 1994 at the University of Brussels, under the supervision of Prof. P. de Maret. Dedicated to ceramic materials and backed up by collaborations with Belgian and foreign institutions, its primary aims are twofold: (1) to examine the meaning of style at each level of artifact production and consumption (be it from a technical, morphological or ornamental point of view), and (2) to develop new analytical methods for the reconstruction of technical procedures from archaeological pottery (see Gosselain and Livingstone Smith 1995). This research program will be carried out until the end of 1999.

Much emphasis has been put on manufacturing techniques and use of the product, so we have chosen to combine ethnographic enquiries, experiments and laboratory analyses. The advantage of such an approach is quite obvious in order to reconstruct cha nes op ratoires. Analyzing vessels and samples collected in the field allows us to test both the accuracy and the relevance of different laboratory methods and to establish a collection of technology-dependant characteristics which will provide guidelines for future research. The use of an archaeometrical approach is also relevant for investigating the origin and meaning of diversity in contexts of production and consumption. As

previously shown for South Cameroonian potters, measurements and experiments made in the field help to understand the reasons underlying technical choices and can be used to assess the cultural ("stylistic") meaning of artisans' behaviour at different levels of the manufacturing process (Gosselain 1993, 1995). It was possible to demonstrate the critical role of non-functional concerns in clay selection and processing by comparing the granulometry and plasticity of raw and processed materials used by potters (Gosselain 1994). Similarly, thermometric data recorded in different firing contexts showed how variations in fuel, firing structure and position of vessels had a limited impact on temperatures reached or the heating rate (Gosselain 1992, 1995). Technical diversity can best be explained in cultural rather than functional terms.

Laboratory examination of ethnographic data needs, of course, to be supported by field enquiries. We considered the main directions of previous research programs devoted to pottery - or material culture in general - (David and MacEachern 1988, David and Sterner 1989, Gallay and Huyssecom 1989, Longacre 1974, Nicholson and Patterson 1985). Then we tried to incorporate issues related to the anthropology and paleohistory of technology (Lechtman 1977, Lemmonier 1992, Pfaffenberger 1992, Vansina 1990). This led to the creation of an investigation form to be used for each artisan observed (Gosselain et al. 1995). This checklist deals with usual issues, such as the social position of potters, context of production and distribution, symbolic prescriptions attached to the activity or function and methods of use of vessels, but also with more neglected ones such as the technical and social contexts of learning, criteria used for selecting raw materials, relationships with other activities, questions of diffusion and borrowing of knowledge, and technical vocabulary. Used in a systematic way across large areas, it allows for a better understanding of pottery production as what Mauss called a *fait social total*.

Convinced that the best way to answer the general aims of the project was to compare data collected in different contexts, we worked with several institutions and freelance researchers, and funded fieldwork in different parts of the world. Since August 1995, extensive surveys have been made among a series of people from French Guyana, coastal Senegal, central and northern Togo,

southeastern and northern Nigeria, Zimbabwe, South Africa and India (Muslim and Indian potters of Rajasthan). The main data was collected during the winter of 1995-1996 in northern Cameroon by a team comprising members of the Ceramic and Society Project as well as students from the University of Brussels and the University of Yaoundé I.

Fieldwork

We wanted to work in an area where pottery was still massively produced and consumed, and where cultural diversity was sufficiently pronounced so that its impact on the behaviour of potters could be studied. We also wanted to fill the gap between areas previously surveyed in the far north of the country (Barreteau and Delneuf 1990, David 1992, David et al. 1988, Delneuf 1991, MacEachern 1992, 1995, Sterner 1989, Sterner and David 1991) and south of the Adamawa Massif (Gosselain 1993, 1995). As a result, we centered our research around the Alantika and Poli Mountains, in the Faro Department, Northern Province (see Figure 1).

The region is peopled by small farming groups belonging to the Adamawa-Ubangian language Family, ranging from one to twenty thousand individuals. Most of them live in the plains along the main roads and tracks where they are being progressively "Islamized" by Fulani rulers (Christianization, a less conspicuous phenomenon, seems to be restricted to certain areas). Others inhabit scattered villages and hamlets in the mountain (up to 1,000 meters high) and are considered as "pagans" or "animists" by Muslim and Christian people. Although difficult to reach and presently experiencing depopulation, one should not consider this second area as completely remote as it constitutes one of the main "gateways" to Nigeria and is seasonally visited by European tourists looking for adventurous mountain excursions.

Following a systematic survey tour of about 450 km, we started work in 67 villages, among some 200 potters belonging to 13 linguistic groups: Samba, Verre, Koma-Gimne (or Koma-Kompana), Koma-Gimbe (or Koma-Kaddam), Koma-Ndera, Dowayo, Longmo (or Voko), Kolena (or Kolbila), Dupa, Pape, Duru, Fulani and Hausa (the last two groups do not belong to the Adamawa-Ubangian language family, the first is part of the West Atlantic Family, the second of the Chadic Family). With a

few exceptions, artisans tend to cluster in certain villages, many of which were visited during fieldwork. This pattern of distribution seems to be best accounted for by the social position occupied by the potter. As a provider of containers used in certain rituals but also as an occasional midwife/healer and spouse of the blacksmith (or "female smith", since she bears the same name as her husband), she belongs to an endogamous sub-group whose members are very few, who inhabit certain villages only, and who are sought after and feared by the bulk of the population (or "pure agriculturalists", as they consider themselves).

In the field, the usual attributes were measured (i.e. distance to raw materials, plasticity of clays, firing temperatures, effects of postfiring treatment, conditions of use of the vessels and resulting stress). These were combined with enquiries concerning (1) social and psychomotoric modalities of learning, (2) modes of diffusing and acquiring the products; surveys were made on regional markets and in some 150 compounds (see Vander Linden, this issue), (3) relationships between morphology, morphometry and use of the vessels (several hundred pots were indexed on card for future comparison). Along with photographing potters at work and recording interviews and vocabulary on tape, we filmed the complete manufacturing process among a series of artisans selected in each group.

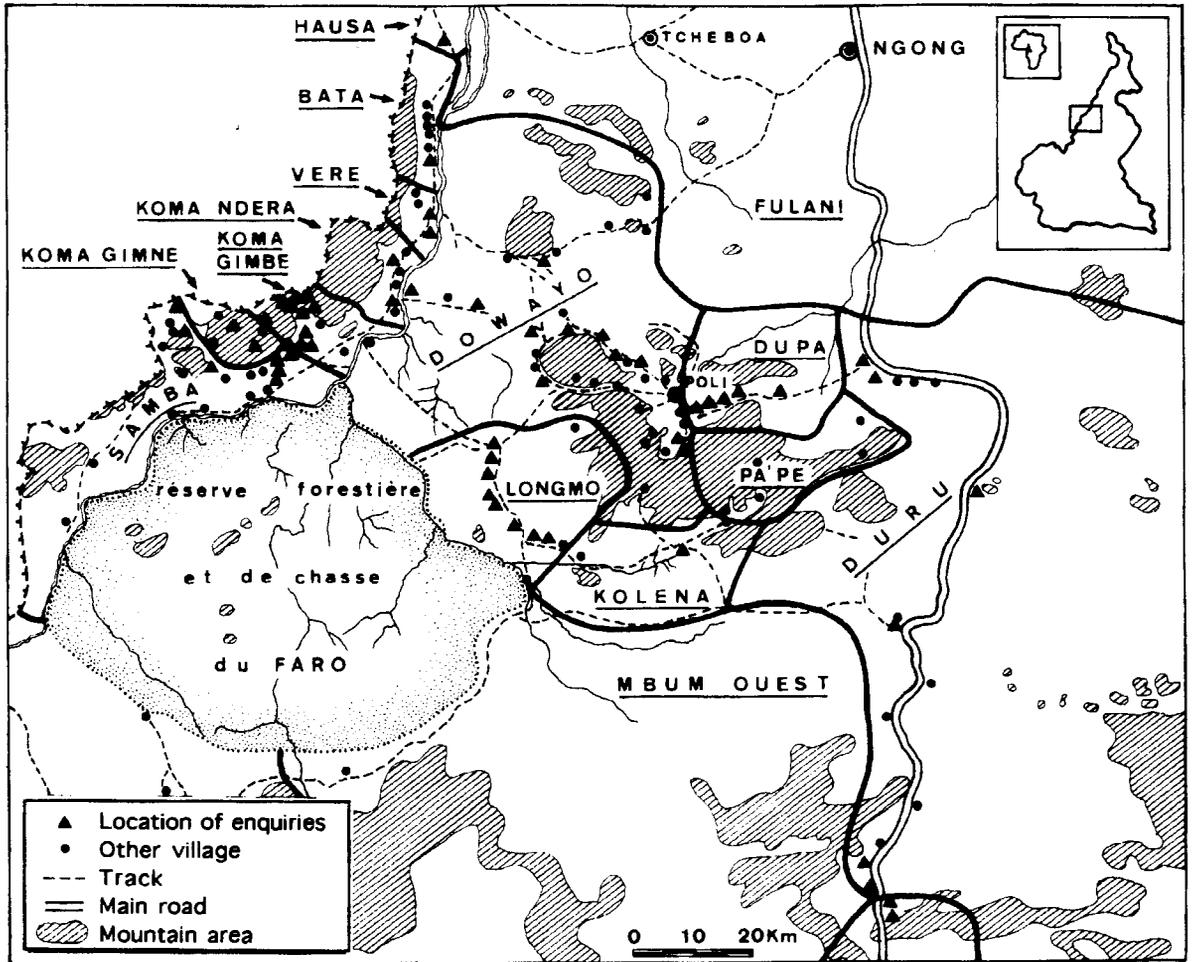
Preliminary Results

Much analysis is still needed before any conclusions can be drawn from the field observations. But the most significant results already available relate to techniques used at the different levels of the manufacturing process and their relationships with cultural identity.

Clay extraction and preparation

As in Southern Cameroon or in other parts of the African continent (Gosselain 1994, 1995), clay is generally collected in the vicinity of the potter's compound (less than 1 km away), in locations already frequented for other purposes (fields, hunting tracks, fishing emplacements, living area). It is always extracted near the ground surface in a dry state. As a consequence, it must be soaked in water for 12 to 24 hours before being epurated (by

Figure 1: Research area.



hand-picking pebbles or roots) and prepared. Several techniques are observed at this level, the distribution of which seems to have more in common with individuals or village communities than linguistic distribution (mixing powdered and humid parts of the same clay, mixing different clays, adjoining sand, grog and/or ass dung). Analyses will reveal whether those treatments aim, as stated by potters, at correcting the clay granulometric composition to avoid breakage during firing and subsequent use of the products or, as we suspect, constitute simple but effective ways to control plasticity and workability before fashioning the vessels. In the latter case, the choice of the incorporated materials could be of some cultural significance, since it is functionally equivalent.

Fashioning

The technical homogeneity characterizing this stage of the manufacturing process is striking if one refers to the situation observed some hundred kilometers further south (Gosselain 1995, Gosselain and Livingstone Smith 1995). Except for Hausa potters who build their vessels by molding the body (or the lower half) on a convex mold and by coiling the remaining part, all artisans we worked with used a combination of drawing of a lump and internal crushing of thick coils. Several variations in shaping and early hollowing of the lump were observed, but none was showed a pattern of technical diversity matching language distribution (Gosselain 1995).

Decoration

At first glance, tools and motifs are rather monotonous throughout the study area. As a general rule, vessels bear a single band of rouletted impressions (made with a twisted cord or, less frequently, a carved wooden roulette, an accordion plaited strip or a carved spike of *Blepharis ciliaris*), which is subsequently bordered and midsected by parallel grooves. This combination is repeated in a quasi-systematic way by potters, regardless of their residential site or linguistic affiliation. But some beer and water containers display more complex decorations, mixing the whole range of ornamental techniques known by potters: rouletted impressions, grooving, appliqué (bands, pellets, spikes, double-bells, human or animal figures, daggers), ochre application and post firing paintings. These types of ornaments are the more likely to be given a symbolic meaning (especially when vessels are to be used in rituals). It is also at this level that some individual or regional particularities are observed.

Firing

Only three kinds of firing structures are in use (bonfire, surrounded bonfire and depression), and the differences between them are so subtle as to be practically meaningless. Except for the Hausa who fire their vessels with cow dung only, potters usually lay the pots on a bed of twigs and bark and cover them with a large amount of dry grass. Before starting the fire, the stack is then moistened with water, in order to slow the temperature increase at the beginning of the process. Vessels are retrieved some 20 to 60 minutes later. Thermometric data collected in the field show that heating rate range between 20 and 45°/min., maximum temperatures between 700 and 850°C and time of exposure to temperatures exceeding 500° C between 25 and 50 minutes. Those values are typical of bonfires and related structures (Gosselain 1992, 1995, Gosselain and Livingstone Smith 1995).

Post firing treatments

Vessels coming red hot from the fire are usually sprinkled with a series of organic mixtures. These are prepared with the fruit or bark of *Bridelia ferruginea*, *Diospyros mespiliformis*, *Parkia*

biglobosa, *Parkia biglobosa* and *Acacia nilotica*, which are superficially crushed and soaked in fresh water for less than an hour. A series of variations are observed in the way potters apply the maceration, some of them merely splashing droplets on the vessel surface, others taking great care to obtain an even coating, still others sprinkling the mixture on the body and then using it for painting motives on shoulder and neck. Explanations also vary as regards the function of these treatments: simple embellishment and/or techniques aiming at cooling, strengthening or waterproofing the vessels. As far as the imperviousness and heating-effectiveness of the products are concerned, none of the experiments made in the field allowed us to demonstrate the advantage of applying an organic coating.

Research Directions

In accordance with our general aim, data collected in Cameroon and in other parts of the world need to be processed and compared. Using standard analytical methods (optical microscopy, SEM and ICPS), clay and pottery samples are currently examined in the Oxford Research Laboratory, with the intention of characterizing the varying techniques used at the level of clay processing and firing. The archaeometrical part of the program includes (1) characterization and reconstruction of fashioning techniques (with the help of medical imaging technologies); (2) identification of both the chemical constituents of organic coatings and their residues in pottery, using Planar and High Performance Liquid Chromatography (see preliminary results in Dialo et al. 1995); (3) evaluation of the accuracy of Remanent Magnetism Analysis for assessing the function of vessels, in collaboration with The Japan Institute of Paleological Studies, Kyoto (see Nishida 1995 for a presentation of the method).

Another main concern is to characterize the components and structure of vessel ornamentations and to examine their relationships with other social productions involving design and spatial organization (Arnold 1983, Gosselain and van Berg 1992, Livingstone Smith 1990). Such an approach, combined with information related to the social context of production and transferring of knowledge could allow us to explain the amazing stylistic and technical homogeneity observed among Adamawa-Ubangian people. Future fieldwork in the area occupied by this language family is also

needed, as possible relationships have already been observed with other A.-U.-speakers, such as Gbaya and Keperere (see Gosselain 1995). Meanwhile, we are pursuing our examination of published sources dealing with the ethnography of pottery in Africa. Comparing data at a continental scale and relating them to linguistics provides an excellent framework for interpreting our own results. It also helps us to address such crucial issues as the relationships between style and ethnicity or questions of technical diffusion, population movements, historical depth of social relations, etc.

As regards the third direction of the project, the archaeological application of the results, we will begin by examining pottery from representative sites in the Sahara. This region is assumed to be one of the centers of invention and/or diffusion of pottery in Africa and we believe that a knowledge of early production contexts and their evolution could be of considerable help for interpreting archaeological assemblages elsewhere. The potential offered by such an approach was previously tested in a study devoted to the past and present of roulette decoration (Livingstone Smith et al. 1995). We will also analyze the evergrowing ceramic collections from West-Central Africa which are assumed to be related to the western stream of the Bantu expansion. This will constitute an excellent opportunity to assess whether technical distribution can be used as an index of population and/or linguistic movement. Other applications should follow as our research progresses and new collaborations are established.

Acknowledgements

The "Ceramic and Society Project" is funded by the grant "Action de Recherche Concertée" provided by the Direction générale de l'Enseignement supérieur et de la Recherche scientifique, Ministère de l'Education et de la Recherche, Communauté Française de Belgique. Research in Cameroon was carried out under authorization from the Ministère de la Recherche scientifique et technique (MINREST) in collaboration with the University of Yaoundé I. We thank Prof. Raymond Assombang, Michèle Delneuf, Sadou Liman Adamou, Mustapha Daouda, Sébéle Jean-Pascal, Marie Wabbes, Michel Verschuren, Kila Werugo, Kitiam Oumarou, Olivier and Gaby Scherpereel, Daouda Bapétel,

Claudine, Alain Froment, Ibrahim Ali, Khasa Célestin, the Rikong family, Christel Pagès, Stéphanie Engelsen, the Valère-Gilles family and Nathalie Nyst for all the help they provided in Cameroon. Most special thanks are due to Tangye Che Celestin for enduring difficult field conditions, and to all the potters and villagers for their welcome and assistance throughout fieldwork.

References

Arnold, D.E.

- 1983 Design structure and community organization in Quinua, Peru. In D. Washburn, editor, *Structure and Cognition in Art*. Cambridge: Cambridge University Press, pp. 56-73.

Barreteau, D. and M. Delneuf

- 1990 La céramique traditionnelle Giziga et Mofu (Nord-Cameroun): étude comparée des techniques, des formes et du vocabulaire. In *Relations interethniques et culture matérielle dans le bassin du Lac Tchad*. Paris: Editions de l'ORSTOM, p. 121-49.

David, N.

- 1992 *Vessels of the Spirits: Pots and People in North Cameroon* (video). Calgary: Department of Communication Media, University of Calgary.

David, N. and S. MacEachern

- 1988 The Mandara Archaeological Project: Preliminary results of the 1984 season. In D. Barreteau and H. Toumeux, editors, *Le milieu et les hommes: recherches comparatives et historiques dans le bassin du Lac Tchad*. Paris: Editions de l'ORSTOM, pp. 51-80.

David, N. and J. Sterner

- 1989 The Mandara Archaeological Project 1988-1989. *Nyame Akuma* 32: 5-9.

David, N., J. Sterner and K. Gavua

1988 Why pots are decorated. *Current Anthropology* 29(3): 365-389.

Delneuf, M.

1991 Un champ particulier de l'expérimentation en céramique: les ateliers de poterie traditionnelle du Nord-Cameroun. In *25 ans d'études technologiques en préhistoire*. Juan-les-Pins: Editions APDCA, pp. 65-82.

Dialo, B., M. Vanhaelen and O.P Gosselain

1995 Plant constituents involved in coating practices among traditional African potters. *Experientia* 51: 95-97.

Gallay, A. and E. Huysecom

1989 *Ethnoarchéologie africaine: un programme d'étude de la céramique récente du Delta intérieur du Niger (Mali, Afrique de l'Ouest)*. Genève: Document du Département d'Anthropologie et d'Ecologie de l'Université de Genève No. 14.

Gosselain, O.P.

1992 Bonfire of the Enquiries. Pottery Firing Temperature in Archaeology: What for? *Journal of Archaeological Science* 19(2): 243-259.

1993 From clay to pottery, with style: 1990-1992 fieldwork in Cameroon. *Nyame Akuma* 39: 2-7.

1994 Skimming through potter's agenda: an ethnoarchaeological study of clay selection strategies in Cameroon. In S.T. Childs, editor, *Society, Culture and Technology in Africa*. Philadelphia: MASCA Research Papers in Science and archaeology 11 (Supplement), pp. 99-107.

1995 *Identités techniques. Le travail de la poterie au Cameroun méridional*. Ph.D. dissertation. University of Brussels.

Gosselain, O.P. and P.L. van Berg

1992 Style, individualité et taxonomie chez les potières Baïa du Cameroun. *Bulletin du Centre Genevois d'Anthropologie* 3: 99-114.

Gosselain, O.P. and A. Livingstone Smith

1995 The Ceramic and Society Project: An ethnographic and experimental approach to technological choices. In A. Lindhal and O. Stilborg, editors, *The Aim of Laboratory Analyses of Ceramics in Archaeology*. Stockholm: KVHAA Konferenser 34:147-60.

Gosselain, O.P., H. Wallaert, A. Livingstone Smith, and P. de Maret

1995 *Questionnaire d'enquête sur la production de poterie en contexte traditionnel / Investigation Form on Traditional Pottery Making*. Brussels: Documents du Projet Céramiques et Sociétés No. 2.

Lechtman, H.

1977 Style in technology. Some early thoughts. In H. Lechtman and R.S. Merrill, editors, *Material Culture. Style, Organization, and Dynamics of Technology*. St Paul: West Publishing Company, pp. 3-20.

Lemonnier, P.

1992 *Elements for an Anthropology of Technology*. Ann Arbor: Museum of Anthropology, University of Michigan.

Livingstone Smith, A.

1990 *Une approche de la céramique gerzeenne: le "Decorated Ware" à figures humaine*. Mémoire de licence. University of Brussels.

Livingstone Smith, A., O.P. Gosselain and P. de Maret

- 1995 Rolling across Africa: the past and present of roulette decorated pottery. Paper presented at the Archaeology in Africa Day Meeting, 21 October 1995, The British Museum, London.

Longacre, W.A.

- 1974 Kalinga pottery making: The evolution of a research design. In M.J. Leaf, editor, *Frontiers of Anthropology: An Introduction to Anthropological Thinking*. New York: Van Nostrand, pp. 51-67.

Nicholson, P.T. and H.L. Patterson

- 1985 The Ballas Pottery Project. *Anthropology Today* 1(2): 6-8.

Nishida, Y.

- 1995 Assessment of pottery function using Remanent Magnetism Analysis. In A. Lindhal and O. Stilborg, editors, *The Aim of Laboratory Analyses of Ceramics in Archaeology*. Stockholm: KVHAA Konferenser 34, pp. 43-8.

Pfaffenberger, B.

- 1992 Social anthropology of technology. *Annual Reviews of Anthropology* 21: 491-516.

Sternier, J.

- 1989 Who is signalling whom? Ceramic style, ethnicity and taphonomy among the Sirak Bulahay. *Antiquity* 63: 451-9.

Sternier, J. and N. David

- 1991 Gender and caste in the Mandara Highlands: northeastern Nigeria and northern Cameroon. *Ethnology* 30(4): 355-69.

Vansina, J.

- 1990 *Paths in the Rainforests. Toward an History of Political Tradition in Equatorial Africa*. Madison: University of Wisconsin Press.