

EARTHENWARE IN ASIA AND AFRICA

Edited by John Picton
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PERCIVAL DAVID FOUNDATION OF CHINESE ART

School of Oriental and African Studies



ART

THE PERCIVAL DAVID FOUNDATION COLLOQUIES

In addition to the gift of his incomparable collection of Chinese porcelain, and of his large library of Chinese books concerned with art, Sir Percival David provided monies which have constituted an Academic Fund destined to advance the objects of his Foundation. His purpose was to ensure the continuing study of the Chinese Decorative Arts, beginning with the ceramics in which his chief interest lay and including other branches of the arts which share in related decorative traditions. The major arts of painting and sculpture, so well served by the collections and studies of other institutions, have not been made topics of the Colloquies. By their specialised attention to decorative forms and motifs these have secured what has become a widely recognized place in the art-historical literature. It was thought valuable to organize regular meetings of scholars engaged in the field of Asian art and archaeology, for debate on a predetermined subject, and for the prompt publication of their contributions in modest form. China has been central in the themes which have been treated, but discussion has ranged over the whole of Asia in keeping with the Benefactor's wish that the study should embrace the culture of China and the adjacent regions. The participants invited to the Colloquies have been limited as to numbers, in order that wide and coherent discussion should take place. The texts of the papers have been printed in editions of some hundreds, obtainable from the School of Oriental and African Studies as well as by special order from booksellers. Colloquy No. 10 is exceptional within the series by virtue of its superior format and illustration. In 1979, in association with the Foundation, the School of Oriental and African Studies published through the Oxford University Press a volume entitled *Early South East Asia: Essays in Archaeology, History and Historical Geography*, edited by R. Smith and W. Watson. The titles which precede the present report are as follows:

- Colloquy Number 1 - *Pottery and metalwork in T'ang China: their chronology and external relations*
- Colloquy Number 2 - *Mahayanist art after A.D. 900*
- Colloquy Number 3 - *The westward influence of the Chinese arts from the 14th to the 18th century*
- Colloquy Number 4 - *The Art of Iran and Anatolia from the 11th to the 13th century*

- Colloquy Number 5 - *Chinese painting and the decorative style*
- Colloquy Number 6 - *Artistic Personality and Decorative Style in Japanese art*
- Colloquy Number 7 - *Arts of the Eurasian Steppelands*
- Colloquy Number 8 - *Decorative techniques and styles in Asian ceramics*
- Colloquy Number 9 - *Landscape Style in Asia*
- Colloquy Number 10 - *Between China and Iran. Paintings from Four Istanbul Albums.*
(Published in North American by the Islamic Art Foundation).
- Colloquy Number 11 - *Lacquerwork in Asia and Beyond*

Early South East Asia: Essays in Archaeology, History and Historical Geography, edited by R. Smith and W. Watson.
Also published for the School of Oriental & African Studies by the Oxford University Press.

PREFACE

The subject of the Colloquy reported in this volume was one of topical interest to scholars in both East and West: traditional methods of pottery surviving outside the sphere, of the type for which China has a long tradition of sophisticated organization, of ceramics produced commercially at high technical levels. It was relevant to consideration of traditional 'village potteries' in Asia to present them alongside similar manufacture recorded in Africa, in all cases work of the contemporary world. Such an approach to the subject opens many topics relevant to contemporary Asian and African society as it is subjected to industrialisation and other social reorganization, but it was the intention of this Colloquy to dwell on technical aspects of the craft and on immediate social contexts which may be judged to throw light on the earlier history of earthenware in East Asia. Mr. John Picton, whose studies combine anthropology and contemporary pre-industrial art, is excellently qualified to investigate the problems set by our theme. I have enjoyed his indispensable help in arranging the meetings of this last Colloquy which I have been concerned to organize, and my great thanks go to him for his acceptance of the exacting task of editor. Mrs. Pauline White has admirably performed her customary rôle in preparing the photo-ready text, and Mr. G.F.C. Ratcliffe busied himself extraordinarily with the photographs.

William Watson
Bloomsbury 1984

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EDITOR'S PREFACE

The choice of title for the twelfth colloquy of the Percival David Foundation was intended to direct attention away from the more 'arty' matters that might normally be expected to dominate any discussion of oriental ceramics. It also, for once, broadened the scope geographically speaking. Indeed, there were no less than six papers dealing with various aspects of West African pottery, as well as one each with the Sudan and Namibia and two from Berber North Africa. For the Africanist, of course, 'earthenware' is all there is of pottery (with the exceptions only of certain North African traditions of urban Arab origin, and industries of colonial and post-colonial introduction). For the orientalist, on the other hand, 'earthenware' served to exclude stoneware and porcelain; and there is one paper each dealing with specific relevant aspects of the pottery of Turkey, India, Sri Lanka, Malaysia, Cambodia, the Philippines and the island of Botel Tobago situated between Taiwan and the Philippines.

Some of these papers were almost entirely concerned with techniques of manufacture. Others treated the subject in a broader manner, and in so doing a diverse range of themes was explored: economic history, ritual, metaphor, the temporal and other constraints upon the manufacturing process, the rank and esteem (relatively speaking) of potters, their training, and so forth.

All this has resulted in a publication which neither is, nor is intended as in any way a systematic presentation of the subject: that would require several volumes based upon detailed research, the greater part of which is yet to be done. Nevertheless a useful survey has been achieved from which a number of points emerge, a few of which are summarised here by way of introduction.

One that will be immediately obvious to many readers is the apparent universality of the paddle and anvil technique, or some version of it, sometimes in the absence of the potter's wheel and sometimes as one stage in a process also incorporating the wheel. The great variety of techniques described, in addition to the paddle and anvil, for the manufacture of pottery in Africa will also be noted. Whether this represents some kind of real contrast between African and Oriental technology, or whether it is merely co-incidental remains unclear.

Several contributors emphasise the efficiency of these techniques within their local contexts of manufacture and use,

and the relative inefficiency of the potter's wheel, if it were to be introduced (though several non-wheel traditions do make use of the simple turntable or tournette). Mourer, in particular, goes to considerable lengths to enable our understanding of the entire technological context. This is an important consideration, and one in which pottery also exhibits *par excellence* one of the significant general characteristics of pre-industrial technology: the lack of expenditure (whether relatively or absolutely) on raw materials and tools; and it provides a counter, if such were still needed, to the once common European assumption that somehow these 'primitive' methods can be 'improved'. After all, these various techniques are themselves the products of long development, each according to its own particular circumstances.

It must not be assumed, however, that 'traditional' crafts people are inveterate blinkered conservatives, as Kirk demonstrates. Moreover, in asserting the relative efficiency of the techniques described here we must beware of the alternative danger: that of inventing some kind of 'noble savage' as technological genius. (I am not, of course, imputing such notions to any of the present contributors). Several instances are provided of techniques going wrong. The Dowayo, described by Barley, for example, appear as particular inefficient potters, and this is not because their technology could not be improved nor because they are unaware of the possibilities for improvement! Rather, this inefficiency 'fits' the general pattern of Dowayo culture. Aside from the obvious point that any technology, is part of a given cultural system, and may be constrained by other parts of that culture (which applies equally, of course, to the potential for greater efficiency of the potter's wheel), it will thus be noted that the efficiency, generally speaking, of the techniques described here does not give rise necessarily to technical perfection. Moreover, the abstraction of "technology" from its cultural *millieu* is in some sense the creation of an unreal thing. There is nothing wrong with an interest in techniques of manufacture for their own sake (any more than there is in social relations; though neither is the whole story!) but the very fact that we can and do divide technology from the rest of its culture is possible only because of a social environment that enables us to stand as outsiders. Most of the people described in these papers, however, in contrast to the contributors (with the obvious exception of Ibigbami, at least), came across pottery as one part of that medium of social relations some of us call 'culture'.

McLeod's paper is another kind of example of the way one

part of a culture impinges upon another. Why is the Akan potter unable to make pots on certain days? This may be a simple question, but there is no simple answer to it: a description of the temporal system is required. The basic point is that an Akan view of pottery, whether as maker or consumer, is inevitably moulded by its presence as part of a cultural system that includes ideas and practices in regard to time; but having understood that proposition it can, of course, as well be reversed: one of the ways in which the Akan view of time is worked through has to do with pottery. Similar paired propositions could be drawn from the papers by Barley, Ibigbami, Miller and Bynon, among others. Artifacts are no mere by-products.

What is the future of the industries described here? There is, of course, no simple answer; but several contributors mention difficulties regarding the supply of wood for firing and the adverse effect this may eventually have. In Nigeria I have also observed difficulties in securing an adequate supply of firewood; but as far as pottery is concerned this is experienced in regard not to the firing of pots but to their use. With the increasing cost of firewood in rapidly growing towns, the easy availability of enamel and aluminium wares, and of kerosene and kerosene stoves (together with the cash needed to purchase such things), it is not difficult to understand the increasingly marginal role played by pottery in the material culture of urban Nigeria; and to predict its eventual but virtual disappearance there, and its survival only in the more rural areas. Having said this, it must be added that it is only one particular set of circumstances from which it would be unwise to assume anything of wider application.

Finally, I should like to conclude by expressing my thanks to Professor Watson for inviting me to assist the Percival David Foundation in the organization of its twelfth colloquy and in editing the papers for publication; and to Marion Granville for her administration of the colloquy, Pauline White for re-typing the edited papers and preparing them for publication and Glenn Ratcliffe for preparing the plates. I must also thank Ian Glover, Schuyler Jones and Keith Nicklin for advice in the preparatory stages regarding potential contributors; and, indeed, everyone who presented papers, and contributed in any way to the discussion and to the success of the colloquy.

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TRADITION OR TRANSFORMATION?:

THE SINHALESE POTTERS OF RATMALAGAHAWEWA

I.

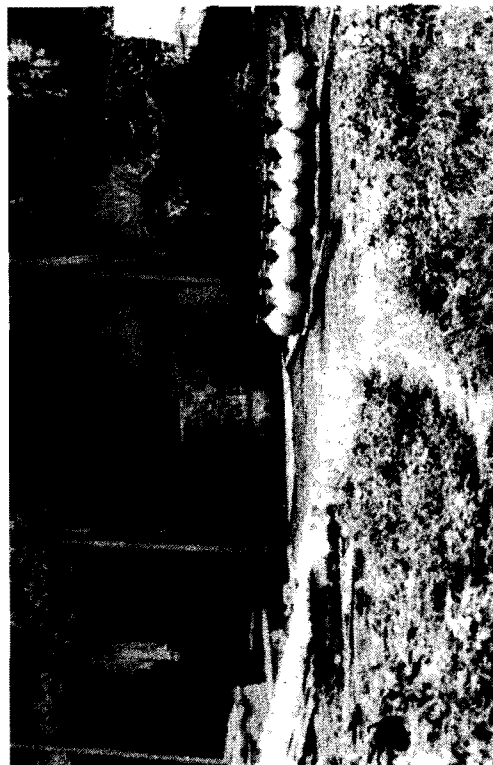
In his widely read book *Traditional cultures: and the impact of technological change* (2nd edn. 1973), George Foster referred to his studies in the Mexican village of Tzintzuntzan. He wrote that:

".....potters, who constitute more than half of all workers, are measurably more conservative than farmers, fishermen, day labourers, and merchants. They are the least literate, the least travelled, the least political and the least well housed of the five groups. The explanation for this behaviour is, I believe, rooted in the productive process. In order to secure his narrow economic margin of security, the potter must have the highest possible number of pots from each kiln firing. Producing successful batches of pottery, kiln load after kiln load, requires meticulous attention to detail and to tried and proven procedures, for at a hundred points in the productive process, error or carelessness can lead to disaster. The potter who rigorously follows the techniques that have worked in the past, and who resists the temptation to deviate from usual methods, will be the most successful. This cautiousness which spells security in potting, seems to me to reinforce the essential conservatism of the villagers, making potters as a class the most reluctant of all people to try new ways... There is a good deal of evidence to suggest that the conservatism of Tzintzuntzan potters reflects a basic conservatism in the psychological make up of potters in other parts of the world. As a rule of thumb guide to community development work, the implications are clear: Avoid pottery making villages as initial targets" (Foster, 1973: 150).

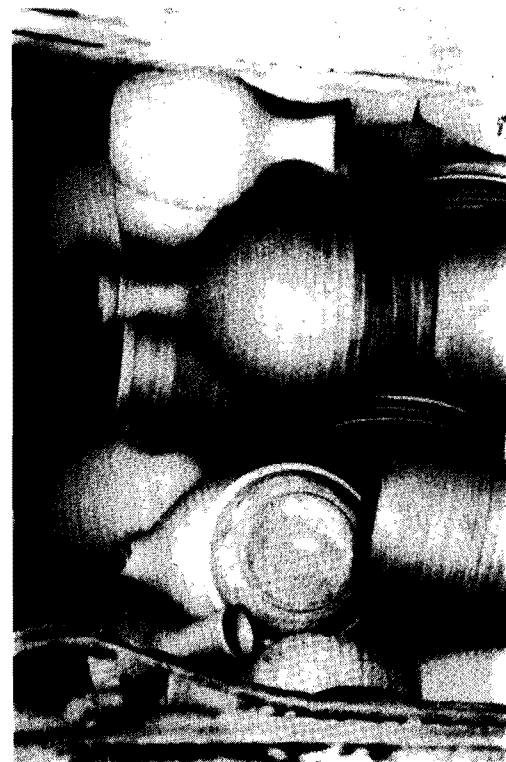
When I arrived in the small village of Ratmalagahawewa¹, in Sri Lanka's North Western Province, I was introduced to a community of Sinhalese Potters² who seemed to match Foster's model to perfection: they are indeed among the least literate, the least travelled, the least political, and the least well housed of the people in their area. (That they have also been, until recently, among the least wealthy has much to do with this). Using traditional methods, most households continue to make the simple functional type of pottery found in every



b



a



c

POTTERS OF EL-FASHER: ONE TECHNIQUE PRACTISED BY TWO ETHNIC GROUPS

This article is based on two groups of female potters in the Sudan. Zaghāwa and Berti, both of whom produce hand-made vessels and supply the El-Fasher market: although both groups of potters use virtually the same techniques, each has a quite different status in the eyes of its ethnic group. The paper is divided into two parts, the first examining the technology and comparing the wares and tools used; the second investigating the status of the potters in their own and neighbouring ethnic groups.

The potters of El-Fasher were studied in the 1930s by the late A.J. Arkell (*Sudan Notes and Records* vol. 21, 1939, pp. 79-88), who set out the techniques used by the Tama, Fur and Berti. But he made no mention of the Zaghāwa, who today supply 90 per cent of the market; a possible reason for this omission will be discussed below.

The town of El-Fasher

El-Fasher, lying 300 miles west of Khartoum, can be reached by air or by lorry during the dry season. It is also on the bus route between El-Genena, on the Chad border, and Omdurman, and another bus runs to the railway at Nyala.

The town was founded in 1792 by Abdul Rahman Rashid as the capital of the Kyra sultanate: Koubeh, terminus of the Forty Days' Road (Dar el-Arbain, the pilgrim route to Egypt), lies 30 miles to the north-west. El-Fasher continued to be the capital of the whole of Darfur province until 1974, when Southern Darfur, with Nyala as its capital, was split off from the parent province in a local government reorganisation. After six years as capital of Northern Darfur, El-Fasher again became the seat of regional government for all of Darfur in 1980. The Kyra sultanate had brought many peoples with it, all its elite joining forces, and land was distributed to military and religious leaders. Today the population of the town is about 180,000 consisting of virtually all the ethnic groups of Darfur: the indigenous Fur, Berti, Masalit, Tama, Tunjur and Zaghāwa; the camel nomads Risekat; the cattle nomads and holy men, Fulāni; and the Jaalin merchants from the Nile Valley. There is also a considerable immigrant population of Hausa from West Africa.

Situated on an area of sand dunes between the Jebel Marra and Jebel Si ranges of mountains, the town is built around the

"lake" of El-Fasher, which is seasonally drained by the Wadi Kū and its tributary, Wadi Halūf. Drinking water is obtained from three sources: the underground wells of Haja el-Godoh and Bir el-Bagar, the seasonal water of the lake, and dam water from Golo and Sag en-Nam.

The main occupations of the town are those of farmer, trader and Government employee. Agriculture is carried out on the goz or sandy areas, where bulrush millet (*dokhn*) is grown during the rainy season, and on irrigated lands such as at Sag en-Nam, which is better suited to vegetables. The muddy banks left by the drained river are also cultivated with spring onion and white radish. The principal market crop in El-Fasher is snuff (*tymbac*), although dried vegetables such as okra, tomatoes and red pepper also form important trading items, together with ogen and water melons. El-Fasher also provides a large market for citrus fruits, which come in by lorry from the Jebel Marra each Thursday and Friday. The traders belong to a variety of ethnic groups, both settled and nomadic. Large-scale merchants trade with Mellit, the terminus for goods from Libya, or with Omdurman. Smaller traders supply nearby Tawīla, Kutum or Kebkebiya, selling items such as tea, sugar, soap, plastic shoes and cloth. There are also nomads selling milk, leather and oil in exchange for sugar, tea and grain: the camel nomads come to El-Fasher twice a year, on their way south in February and March, and returning in August; the cattle nomads arrive during the rainy season, driven from the south by the rains, and stay in El-Fasher during August and September.

The town has five markets: Souk el-Kebir, Um Defasu, Moweshi, Awlad er-Rif and Tumbāsi. The latter two are small scale, selling only groceries and fruit from open-air stalls. Souk el-Kebir contains the major fruit and meat market, with electrical, cloth and shoe shops, and in it are found also the traditional perfumes, such as sandalwood and musk. Moweshi is the terminus for all vehicles arriving or leaving from El-Fasher. Um Defasu is the location of handicrafts, angereb makers, leather workers, as well as dried foods wholesale merchants. It is the only market in which pottery is sold.

Pottery manufacture in Darfur

During a recent field trip, a survey was made of pottery traditions in Northern Darfur, with particular attention paid to the Kebkebiya rural district. It was noted that most towns and larger villages are served by Zaghāwa migrant potters. These female potters work from two to six months at a given centre during the dry season, returning to their permanent

home in north-western Darfur around June to prepare their fields for millet cultivation. The women build their temporary camps on the outskirts of villages, usually on or near the river bed, and construct circular roofless straw houses. It is more usual for the Zaghāwa men not to live with their spouses during the pottery season. The potters are regarded by the settled population with a certain amount of suspicion, but whether because their trade is considered dirty or because they are outsiders to an endogamous group is not known. If the host people are themselves Zaghāwa, then the potters are all the more likely to be treated as a pariah group.

Other ethnic groups, such as the Fur and the Berti, also have women potters, working on small-scale production in their own households. Among these groups there is no stigma attached to being a potter.

Five villages were visited in Northern Darfur province this year within a 20-mile radius of Kebkebiya. All had a number of Fur household potters, while three of them had additional Zaghāwa camps; those without camps bought their large vessels from Zaghāwa at nearby villages sometimes over an hour's walk away. If a village has a large population it will be served annually by the Zaghāwa potters, but smaller centres may be visited only every two or three years. Kebkebiya itself has a large camp of fifteen potters' households each year.

The potters of El-Fasher

The Zaghāwa and the Berti both produce pottery seasonally, working only in the months after the harvest (*darrat*) and before the rains (*kharīf*) begin: that is, from January to June. In late May and June they clear their fields prior to planting the staple bulrush millet.

The Zaghāwa, which form the majority of the potters, may be divided into two groups: those who have settled permanently in El-Fasher over the last 12 years, and those who migrate from outer villages, living and working in El-Fasher only during the dry season. The permanent Zaghāwa, numbering at least 23 households, came originally from Tina and Omboro in north-western Darfur and settled in El-Fasher because of the severe draught in the Dar Zaghāwa in 1969-70. Only four women had migrated from Um Delu, to the west of Kebkebiya, and all of them are closely related to those residing permanently in El-Fasher. All belong to the Koubeh branch of Zaghāwa, and are Hadahid, the blacksmith class, despised by other Zaghāwa who will neither eat, drink nor

intermarry with them because it is said they were originally slaves. The Zaghāwa potters live with their blacksmith husbands in a district on the extreme southern edge of the town, their compounds consisting of one or more straw huts (*gutiya*) in a square enclosure of thorns. The women work in an area to the east of their compounds, each having built her own square straw shelter (*rakuba*) in which to pot. Originally their work area was near the airport, but they have been gradually moved on by officialdom until today only a few women continue to use this site.

The Berti potters number six women (three mothers and their older unmarried daughters) who came from Sayeh village to the north of El-Fasher, renowned to this day for the strength and "redness" of its pottery, just as it was during Arkell's visit 40 years ago (SNR 1939, page 85). The women belong to the Dakertū branch, and their menfolk are not blacksmiths. After the harvest the women have no work, and travel to El-Fasher because there they can obtain higher prices for their pottery. During their stay they live with relatives in mud houses on the eastern side of the Awlad er-Rif district, working on the nearby banks of the river *wadi*, where they have built a single wide straw shelter (*hosh*) beneath the shade of a thorn tree.

SYSTEM OF WORK

Each Zaghāwa woman works as an independent economic unit, fetching the clay, manufacturing, firing and selling the ware herself. There are no specialists, each woman making a full range of vessels, although a younger daughter may help by making small vessels and the two will fire together until the girl is in her mid-teens, when she will fetch her own clay and become a full-fledged potter, firing separately. Clay is collected freely, dug out with an adze-like tool, *bowten*, by the basket-load from the brick kiln area a kilometre away from the potting camp, and is left to soak for several hours in a large half-buried water jar (*zir*). Three or four trips are required to fill a *zir*, which is enough clay to manufacture six *zir*, and several smaller vessels, before more clay is required. After soaking, the clay is wedged with two baskets of millet husk (*bowtab*). A series of bases are made over a three-day period and allowed to dry before the necks and rims are added. Before firing the vessel is preheated and coated with a red slip. The women may work on a seven-day cycle: collecting, soaking and wedging the clay on day one; pounding large bases on days two and three; making smaller vessels and adding necks and rims on days three and four; applying red slip and burnishing on day five; firing on day six; and resting on day seven. El-Fasher

market is open daily, so there is no obligation for the potters to fire on a particular day, as is the case in the smaller towns and villages, where there is a weekly market. In these areas Zaghāwa potters will invariably fire on the morning of the market. In one week a woman may make and fire nine *zir*, four *gumbang*, nine *dahalob* and five *borma* (see plates). These would have a market price of about 35 Sudanese pounds, the cash being spent on tea, sugar and clothing. During the rainy season, many women have no cash income at all, and must rely on their savings from the previous months' pottery sales.

The Berti women work to a regular six-day cycle, also working independently and each producing a full vessel range. They do not, however, make vessels such as the large water jars or storage vessels, and have a slightly different system from the Zaghāwa in which they will make, and complete, only one vessel type per day, for example, ten ablution vessels (*ibrik*) or ten beer jars (*dulang*).

Method of manufacture

A shallow hollow is made in the sand to act as a mould for the vessel, and over it is laid a square of matting (*ferash* or *shemla*). A ball of clay is placed in the hollow, and its edge is repeatedly beaten with a hammer stone (*duggāga*) while the clay ball is rotated constantly. The potter works seated on the ground and continues this process of striking, rotating and adding a powdered dung separator until a spherical vessel is formed with walls of a uniform thickness of about one centimetre: this is the belly of the pot. When making a water jar, the Zaghāwa work on two bases at a time, starting one, then leaving it to harden and returning to it later. Then they leave the part-formed vessels a day or two in the sun before coiling the rim, whereas the Berti, restricted to smaller vessels, begin and complete a set of ten or so pots each day, keeping the bases covered with cloth in the shade. Arkell (SNR 1939, page 80) reported that the bowl of the pot was attained "only a few minutes after it was merely a ball of clay". This may be so with small vessels, but a *zir* base of about 50cm diameter takes up to 90 minutes to beat out.

The half-finished pot is then taken up, its edge is damped, and coils are added to form the neck and rim. The Zaghāwa form a coil by holding a lump of clay vertically and squeezing it downwards, while the Berti roll small coils on a plank of wood. The added coils are scraped down with a spatula (*mughrafa*), and the rim is formed with the aid of a damp rag. With the exception of water ablution jars, all vessels are provided with some form of vestigial handle or lug. Prior to firing the ware is given a red slip applied

with a rag, and then burnished. Before taking water jars to market, the Zaghāwa coat their vessel bases with fresh cow dung; the Berti vessels receive a linear decoration of graphite, applied with the finger.

Decoration and distinctive markings

Both Zaghāwa and Berti potters use a red slip on their vessels, called respectively *oso* and *jamūruh*, before firing. The former obtain the red soil from a group of low hills 3km south of El-Fasher along the Nyala road; the latter bringing their supply from Sayeh together with amounts of *kanjel*, the graphite which is applied as linear decoration to the vessel after firing. In each case the red slip comes from a soil found together with angular quartz. As Arkell (page 82) described: "The mixture is dissolved in a bowl of water, the soil forming a slip and the quartz sinking to the bottom". The Zaghāwa mix their red slip with a very micaceous earth (*oso abiad*) from Jebel Awal or Jebel Nomo which is quarried only once a year: towards the end of the potting season their supply may run low. The potters say that the red slip is added to improve appearance, but it also serves to reduce porosity. The red slip is applied with a rag, and burnished with leather or a stone, then polished with a soft cloth.

The Zaghāwa have three distinct ways of putting their "signature" on vessels: one involves a variation in handle form, making the handle large or small, rounded or pointed, with or without an applied knob, or varying the number from nought to three (some examples are illustrated in the plates). Most handles would be described as vestigial, or as mere lugs.

A second method makes use of the fact that most *zir* have a raised row of impressed finger marks just below the junction of neck and shoulder, which may be slightly varied according to the individual potter. Potters' marks in the form of rows of dots, incised triangles and crosses, and even rim nicks are a common form of identifying an individual potter's manufacture.

The Berti women use no incised or impressed marks, although they do vary handle shapes and the finger-applied graphite decoration. These differences are particularly notable when two women are firing the same range of ware together. It is understood that in Sayeh the women work independently in their own compounds; if they also sell from there, then they would not need distinguishing marks. But such markings become necessary when various individuals' wares are sold together from the market place.

Firing

A shallow hollowed circular pit (up to 3½ metres in diameter) is used by both groups for firing, adjusted to size depending on the number of vessels to be fired (up to 35). Animal dung is the principal fuel.

Each Zaghāwa woman fires in her own pit, which is lined with a layer either of goat or crushed cow dung and straw. Large *zir* are centrally placed, on their sides mouth to base to give them red, oxidised interiors, whereas vessels such as *borma* or *jerr*, which require a black reduced interior, are placed mouth downwards. Tin sheeting is used to cover large spaces between the *zir*, and the area, limited by large boulders, is covered in clods of cow dung. Firing invariably takes place during the day, lasting for approximately two hours, the dung being allowed to burn in a line from the single upwind starting point. Before being taken to market the pots are tapped with a knuckle to test for soundness. A high wind may cause cracking and flaking, or if a vessel is not thoroughly dried it may be heard to "pop" as soon as it is touched by the flames.

In contrast, the Berti women fire in pairs every two days; a mother and daughter firing together, each using the same pit alternately. Since they manufacture for four days each cycle, they may produce more than 80 vessels to be fired together. Their pots are always fired red, having a black mark only where they rested on the base of the pit, which is lined with goat dung. Vessels are always stacked on their sides and are completely covered with a layer of flattened tin. This in turn receives a layer of cow dung, and the pit is encircled with a wall of closely-packed stones. Highly combustible material such as straw is spread over the whole, and the pit is lit at once from various points around the circumference. Firing usually takes place at dusk, with the kiln unloaded the following morning. If there is a strong wind, the Berti delay the firing.

A pyrometer (kindly loaned by Dr. Nigel Seeley, head of the Department of Archaeological Conservation and Materials Science, Institute of Archaeology) was taken on the trip to the Sudan, although few temperature readings were made in El-Fasher. A set of readings was taken from the Zaghāwa firings at Kebkebiya, but these may be liable to distortion, since the wind there is extremely variable, causing sharp variation in temperature. Firings ranged between 650 and 890 degrees Centigrade, and an example is illustrated in the plates from a calm day. The temperature reached 765 degrees after 50 minutes, stayed above 550 degrees for 45 minutes, and the first pot was removed from the firing pit after two hours at

325 degrees. This contrasts sharply with a firing on a windy day (shown as a dotted line in the plates), on which the maximum temperature of 780 degrees was reached after only ten minutes; the temperature had dropped below 200 degrees after 50 minutes.

The two Berti firings registered took 35 minutes each to reach top temperatures, and stayed above 550 degrees for 45 and 70 minutes, with top readings of 615 and 787 degrees respectively. In both cases the firing pits were left to cool overnight.

Technology

Samples of clay from both groups of potters in El Fasher were tested. Brickettes were made of each, with and without the various fillers, and these were fired in an electric furnace (at the Institute of Archaeology, London) to a range of six temperatures, between 450° and 900°C.

The brickettes were soaked in water for several days: those fired to 450° and 500°C disintegrated, but from 550°C upwards the samples were ceramic. During firing to 900°C the clay developed cracks. These and further tests are discussed fully in my forthcoming paper 'Ceramic Pyrometry: a record of dung firing in Darfur'.

Thin sections (made of samples fired to 750°C) were analysed by A. Vince, Museum of London, and these confirm that both Berti and Zaghawa use clay from the same source. Those with an organic filler had a dark core with carbon aureoles around the filler, whereas without an organic filler the core fired an even red. The natural inclusions consisted of: sparse rounded quartz (up to 0.6 mm), larger quartz grains (1.5 mm), polycrystalline fragments of biotite, plagioclase feldspar, chloride, epidote fragments, tourmaline and a little iron ore. The varied size of these inclusions means that this clay can be used on its own without the admixture of another clay as occurs in other areas.

The most important difference between Zaghawa and Berti pottery is in the fabric. Although both use the same clay from El Fasher, the thickness of the ware is quite different, e.g. a bowl: Zaghawa 8 mm thick, Berti 5 mm. The Zaghawa remarkably use large quantities of millet husk and donkey dung (*bar homar*) as filler for different parts of the same vessel, whereas the Berti use cow dung (*bar bagara*) only, wedging small amounts into the clay prior to use.

The Zaghāwa use millet husk only for the "belly" of the

vessel, since it gives the clay damp strength while being beaten out: such a clay has a very low plasticity. The women say that a husk (*bowtab*) filler enables the fire to "eat" the vessel more thoroughly, and it also makes for a more porous vessel. Crushed donkey dung is used only to temper clay for the neck and rim of the vessel, giving a more plastic clay and firing harder. It is said by the women that this clay cannot be used to beat out the belly of the vessel.

The Berti use powdered cow dung as both filler and separator, the combination giving a very compact fired body. Of the consistency and appearance of flour, it allows the clay maximum plasticity, although it has no damp strength and cannot be used to form large vessels. The maximum diameter of a Berti vessel is 28 cm, while that of a Zaghāwa is 50 cm.

The difference in body fabric caused by the choice of filler means that the Berti are unable to produce large vessels, such as the water and flour storage jars (*zir* and *gumbang* respectively), nor the *dahalob*, a large semi-spherical bowl used variously for soaking millet, treating leather, making perfume (*dilka*) or storing clay. When the Berti require these wares they buy them from the Zaghāwa.

The vessels made by each group are illustrated. These include *jerr*, used for carrying on the head water from the well; the *gulla*, for keeping a small quantity of drinking water cold (also called *thelāga*, refrigerator). Beer is sold for consumption in a *dulang*, or an *umtumaiy*, a half measure. The latter, with a spheroid base of up to 15cm and trumpet neck, is known by various names depending on its use: *colol*, for storing powdered foods such as tomatoes or okra during the rainy season; *sakhāna*, for heating water used for bathing the body; and *tajūn*, when used to keep the flour and water mixture for making *kisra*, unleavened bread.

Vessels connected with food include: *borma*, the cooking pot for *asīda* (porridge); and *khammāra*, a vessel which may be larger than a *tajūn* but serves the same purpose, for storing the *kisra* mixture. Terminology often follows use rather than shape, for as well as the *colol* mentioned above for storing dried foods, a bowl used in cooking meat and vegetable stew is also referred to as a *colol*; and the same form is sometimes also called *sakhāna* (see previous paragraph) when used for heating milk.

Pottery used in ritual washing before prayer includes the ablution jar, *ibrīk*; *wadaiy*, a dish in which to catch the water, provided with a central raised portion for resting the

heel while washing the feet (among the Zaghāwa of El-Fasher the *wadaiy* is occasionally provided with a soap dish on the interior wall); the *khasal*, a small pot for catching water from hand-washing before a meal; and although the *sakhāna* has already been mentioned in connection with bathing, another wide dish, the *tangel*, is also used as a wash basin, either in washing the body or for laundry.

On festive occasions such as weddings and circumcisions a drum (*dalūka*) is used. This is made in sets of three, one large and two small, and it is believed that only the Zaghāwa make drums. The *mukhbar* is an incense burner, using different substances for various purposes: to purify, to defend against the evil eye, to attract a husband. Certain vessels may be commissioned, such as the *mulghah*, an ovoid pot used in leather tanning; the *dawaiy*, an ink pot used by the Quranic doctor; and the *mangat*, a small stove for heating.

Tools

i. Mat (*ferash*, *shemla*)

The Zaghāwa and Berti both use a woven fibre mat made specifically for the purpose of forming pots, as a working base over the shallow hollow scooped in the sand. It is rectangular, measuring approximately 55 by 70cm, and is either made by the potter herself or bought on commission. It may be made of one of two types of tough bark fibre, *kurkur* or *loht*, and may last for up to six years before it wears through. As well as this mat, the Berti also use scraps of woven goat hair, manufactured in a factory in Mellit, for home use. The texture is much softer than that of the bark fibre mat.

ii. Fibre mat (*birish*)

This is a mat woven in a herringbone pattern from fronds of the *dom* palm and is used by both groups as a surface for wedging clay. It was never noted used as a base for beating out the vessels, although both Arkell (SNR 1939, page 80) and Haaland (NDSA 1975, page 50) record its use for this purpose. Sherds (as yet undated) have been found bearing the pattern of the *birish* on their exterior surfaces (see Ibrahim Musa, unpublished Ph.D thesis, University of Cambridge).

iii. Sieve (*ghorbal*)

Used for sieving the crushed animal dung prior to its use as a filler and separator. The Zaghāwa make a sieve of fine twig-ends, lashed together with leather thonging, while

the Berti buy from the market a rectangular sieve with a wire mesh to serve the same purpose.

iv. Hammer stone (*mongār*)

The Zaghāwa and Berti both use rounded flattened stones for beating out their pottery, the largest for water jars and smaller ones for bowls. These stones are shaped by the individual potter for her own use, by "knapping" one rock with a more compact rock "axe". These stones are also used for crushing dry clay and donkey dung, although the Berti were also seen to use for this purpose a wooden mortar and pestle (*funduk* and *amūt*) which is usually reserved for food preparation.

Arkell (page 80) and Haaland (page 50) both report the use of a dried clay anvil, shaped rather like a cottage loaf, to beat out the vessel. This was not seen among either group in El-Fasher, although a dry clay anvil with a similar shape is used by the Kinin potters in Kutum to crush donkey dung.

(Note: rounded stones are used in the domestic situation as mortar and pestle equipment. A very flat rounded stone, of maximum height about 3 cm, is used with a *morhāka* to crush millet into flour, and a ball slightly flattened at each side, is used to make powdered tomato or okra in a heavy *morhāka*).

v. Scraper (*mughrafa*)

This tool is used for scraping down and smoothing the coiled section of the vessel. Each Zaghāwa potter possesses a number of rectangular segments of worked gourd, which are cut out with a knife to suit the individual, and the edge worn smooth on a stone.

The Berti women have a slightly more elaborate set of tools for this purpose: *mughrafa* may be made from either gourds or from worked sherds, each having curved as well as straight edges. The *shibkah*, a sherd taken from a wide-bodied pot, is used for paddling the vessel walls inwards; and the *delaïy* is a circular sherd of about 6cm with a central hole, which is rubbed over the clay surface to compact it.

vi. Burnishing tools

a. Leather (*habil arab*)

This is a 30cm length of plaited leather thonging having the same function as the Berti *shibkah* and *delaïy*, that is, to compact and seal the body. It is used only by the Zaghāwa, who knot it and rub it over the vessel wall prior to and during the

application of the red slip.

b. Stone (*malāsah*)

Small smooth stones of very compact rock are used in sealing and burnishing the vessel walls before firing. The stones used by the Zaghāwa always have a rounded profile, while those of the Berti may also be triangular or rhombic.

The Status of Potters

It is clear from this report that both Zaghāwa and Berti produce very similar ranges of pottery, using very similar techniques. But in spite of this it became obvious during the field trip that the social standing of the two groups differ widely. Randi Haaland states (1975, page 60): "Pot making as a cultural tradition is maintained with a specialized and stigmatised group of potter blacksmiths, a group whose members perform their crafts within communities inhabited by different ethnic groups".

The statement would be correct if it referred exclusively to Zaghāwa potters. However, one should rather say that pottery making is frequently a stigmatised occupation, but among some ethnic groups it is more so than among others. In the survey of villages around Kebkebiya mentioned above, it was found that all had Fur potters and three were additionally served by migrant Zaghāwa. Among the Fur there is no disgrace attached to being a potter, although the Zaghāwa in these villages, being outsiders, are automatically regarded with some suspicion. Similarly, among the Berti, there is no stigma attached. In El-Fasher the Berti potters live and work in Awlad er-Rif, a well built-up area, their firings taking place approximately 100 metres from the nearest house.

In contrast, among the Zaghāwa the blacksmith class, *Hadahīd*, is completely despised by non-blacksmiths. As stated above, Zaghāwa will not eat, drink, marry, or live near, the *Hadahīd*, who, although they speak the same language, are regarded as slaves: the term *hadahīd*, directly translated "blacksmith" from the Arabic, is itself derogatory when used by the Zaghāwa. But in fact the men of the blacksmith class do not work in metals alone: they also undertake virtually any kind of craft, whether in wood, leather or cotton; and can be called on to provide a wide range of services, from animal slaughter to playing of drums. Even if a *Hadahīd* is well educated, is a wealthy merchant and has a fine house and a beautiful (non-Zaghāwa) wife, he is always considered *Hadahīd* by other Zaghāwa. In the Dar Zaghāwa itself, at Tina and Omboro, *Hadahīd* live in separate districts, on the western

edge of town, so that smoke from their fires does not blow over others' houses. According to Tubiana (1977, p. 93), there is a problem regarding the blacksmiths' children attending the same school as non-*Hadahīd* Zaghāwa.

Twelve years ago, when the Zaghāwa potters first settled permanently in El-Fasher after the fatally dry spell in the Dar Zaghāwa, they lived and worked near Moweshi souk. Since then the government has moved them on four times, each time refusing them licences to settle and work, citing complaints about the smoke from their fires disturbing other householders. Today they live at the extreme southern edge of El-Fasher, in the area used by the abattoirs as a rubbish dump.

Since there is so much shame and dishonour attached to belonging to the *Hadahīd*, it is perhaps not at all surprising that they so readily assume the identity of their hosts. Haaland says (p.58) that the potters of Jidad and Sarar claimed to be Baggara Arabs; Arkell reported (p. 79) the El-Fasher potters as being mainly Tama. Two years ago I met potters at Kutum who called themselves Kinin; in Kebkebiya there was a family in which one girl said she was Zaghāwa, and her sister said she was Tama. One wonders if in fact all were *Hadahīd* - and all concealing their true identities under the titles of different groups to overcome the stigma of their despised background.

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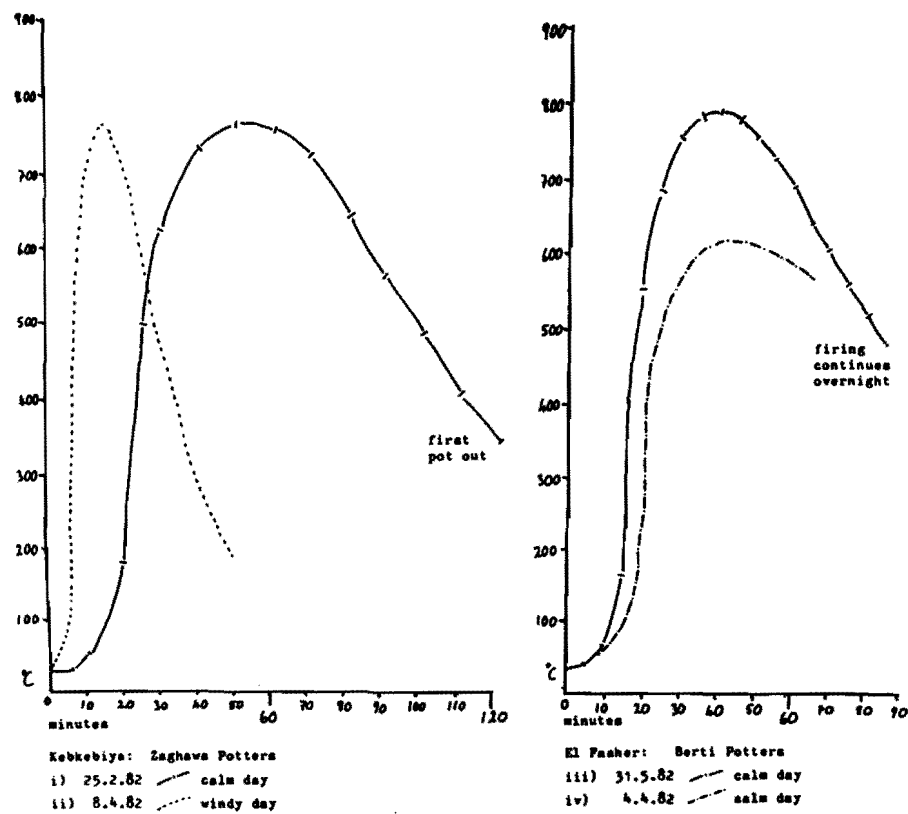
PLATES

1. Zaghawa and Berti pottery: comparison of form and decoration.
- 2a. El Fasher, Zaghawa potter sieving crushed donkey dung which serves as a filler for the clay used to coil the neck of the surrounding water jar bases.
- 2b. El Fasher, Zaghawa potter smoothing the vessel wall with a gourd spatular. These water jars have a capacity of around 20 gallons.
- 3a. Kebkebiya, west of El Fasher, Zaghawa potter igniting the bonfire with a handful of straw.
- 3b. Firing temperatures: four examples.
- 4a. El Fasher, Berti potter completing the neck of a beer jar. Note the vessels either side of her covered with cloth to inhibit fast drying.
- 4b. El Fasher, tools of the Berti potter.
Top row: bowl containing red earth for slip,
two rounded hammer-stones, fibre mat.
Below bowl: 3 quartz burnishing pebbles.
Below hammer-stones: 3 ceramic and 3 gourd scrappers.
- 4c. El Fasher; Berti potter stacking vessels in the firing pit at dusk.



a

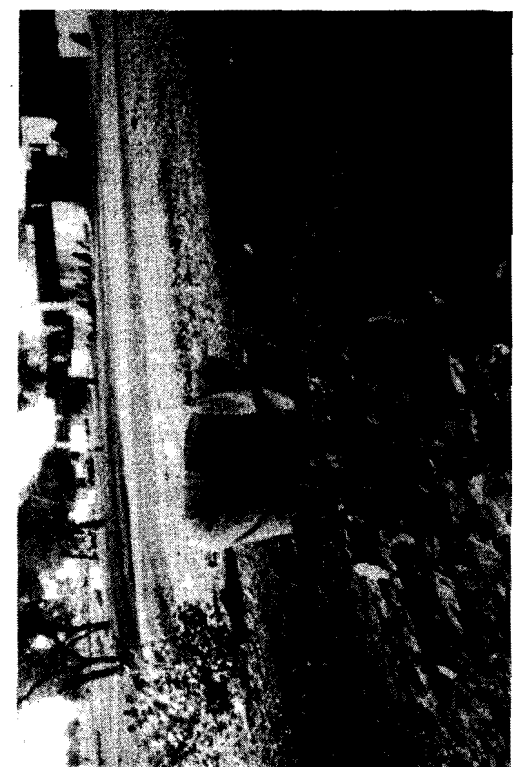
Fig. 3 TEMPERATURE READINGS, FOUR EXAMPLES



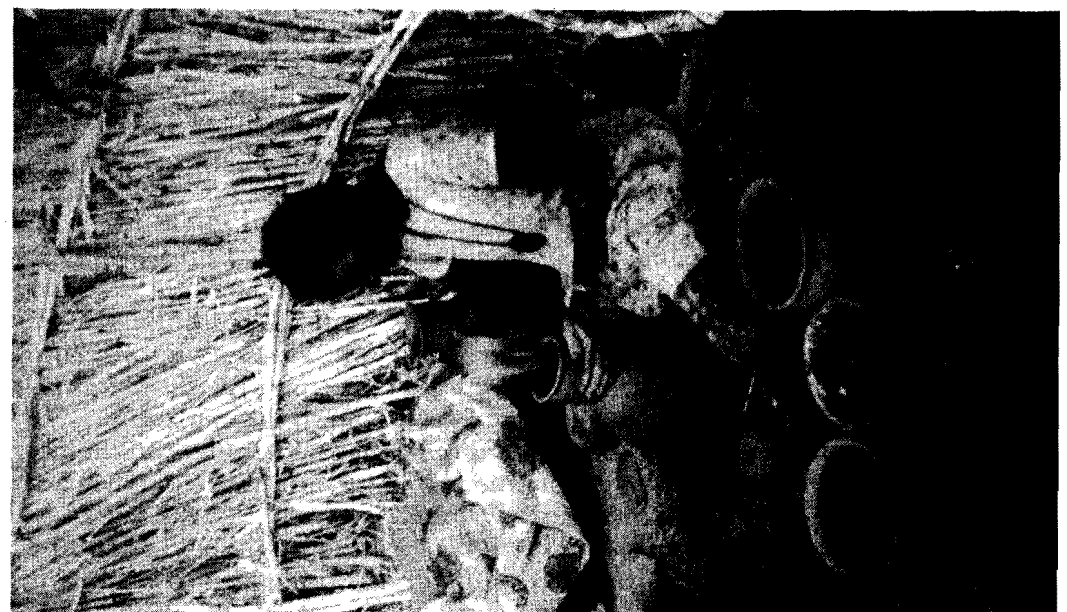
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b



c



d