

ETHIOPIA

Some Aspects of furnace shape and decorations among the Oromo Iron smelters of West Wollega, Ethiopia

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Introduction

The furnace (Gumbii in afaan Oromo) is one of the significant technological variables in iron smelting technology. It has long been observed that traditional African iron smelters used a variety of furnaces (Kense 1985; Sutton 1985). Some hold that it was probably to reduce the variety of iron ore they found in their localities (Cline 1937; Sutton 1985). But others were tempted to consider the possibility of local experimentation in iron smelting and therefore of an independent origin. Researchers also discussed the presence or absence of a superstructure, and further classified types into shaft or dome and bowl furnaces. The different mechanisms employed to charge them were also described: natural or forced draughts as well as the mechanism of separating the impurities from the bloom, slag tapping or non-slag tapping (Haaland 2004; Kense 1985; Sutton 1985).

Ethiopian iron working: A background

A history of iron production in Ethiopia is still incomplete (Haaland 2004; Phillipson 1993; Todd 1985). But from various sources, it is clear that iron had a significant contribution to the life of past Ethiopian communities. Some early reports on iron working in Ethiopia, particularly among the Oromo, were made by Cline (1937), Wainwright (1942), Huntingford (1955), Haberland (1959), Herbert Lewis (1965) and Judith Todd (1975). None of these scholars, however, carried out any comprehensive work on the distribution of the iron technologies throughout the

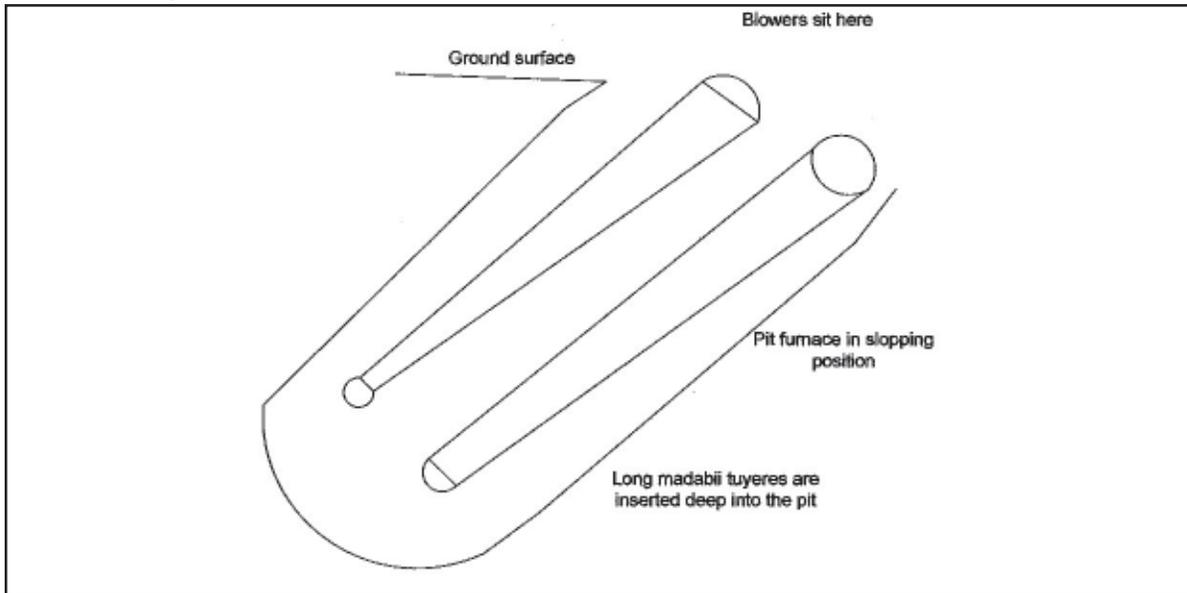
country. This is particularly true for iron workers in Oromo society. Although Cline, Huntingford, Lewis and Alessandro Triulzi in the 1970s, discussed the place of iron workers in Oromo society, there was no intensive study of the nature of the technology as well as its socio-cultural aspects. These scholars (Cline, Huntingford and Lewis) showed that in different parts of the Oromo land, smelters employed different mechanisms to reduce the ore—namely natural (Cline) or forced draught (Huntingford and Lewis). The former did his research in Shoa in central Ethiopia and the latter in and around Jimma in southwestern Ethiopia.

On the other hand, except for some comments on the presence of iron production in some parts of Wollega by Triulzi (1973, 1975), Ahmad (1980, 1999) and Waqweyya (1988), no one specified locations or observed activities. However, the information provided has helped the present researcher to carry out an ethnoarchaeological investigation of the iron smelting in Wollega. The first place where I commissioned descendants of iron smelters was in 2005 in Eastern Wollega (Temesgen 2006). This yielded important data including the identification of the community of iron smelters, their social status, sites exploited by smelters in the past and the nature of technology employed. It was found out that smelters used an underground furnace of over one meter deep constructed in a sloping position (Figure 1).

In addition to this evidence, a preliminary survey has shown that in West Wollega (over 200 km away) of Aira–Gulliso District, there once existed group of iron workers (smelters in particular) who played a significant role in the iron trade that went as far as Fazogili in the Sudan (e.g. Triulzi 1973 and 1975). These smelters were similar to those of the East.

This earlier mention and a preliminary survey of the region during my field work in Eastern Wollega from late 2004 to late 2005 inspired me to write a project proposal for a thematic research project which was funded by the joint SIDA/SAREC-OVPGSR (Addis Ababa University). My field work, mainly concentrated on the documentation of indigenous knowledge of iron smelters, came up with hitherto unknown evidence on iron working in Northeast Africa. In the following discussion, I concentrate on the description of components of iron smelting used by Jarso Abayani (and Malkee) iron smelters of West Wollega

Figure 1. Cross-section of an underground furnace used by Malkee smelters in East Wollega. Note that, despite the distance between them, smelters in West Wollega are closely related to those of their counterparts in the east (Temesgen 2006).



in the past, but which in this case was observed during the smelting process that I commissioned. Former iron smelters, their sons, and forgers had access to the skill of iron smelting by, for example, working on the bellows during smelting or forging the blooms. Others became apprentices of iron smelters and worked on their own smelting huts. These people were approached and finally volunteered to demonstrate.

The following were activities accomplished during a two field sessions between November 10 and December 26, 2007. During that November, the major activities that took place were mainly the construction of two traditional / vernacular Oromo smelting huts in two areas (architecturally significant in that it reminds us of the old Oromo house architecture only remembered by the elderly). I chose two areas because I could see that there has existed some kind of misunderstanding between old smelters about a kilometer apart. The major reason for this misunderstanding was who could take the lead. It also included who should benefit most financially, but the other reason was that due to the existence of lineage difference between the leaders of the two groups (not the members), no one wanted to be less important than the other. I looked at this as an opportunity to be able to find activities attributed to iron smelting

in others associated with the technology as usually it could be forgotten as we have had to depend on the memory of only the master smelters.

In this short presentation, I would like to concentrate on some of the non-technical features of iron smelting as demonstrated in the materials used for smelting and the acts performed by the smelters during construction of the furnace to the time of smelting. For this I will draw on Haaland and Haaland (2007:374). In this it is very clear to observe that what they referred to as symbolism could be inferred from the acts and the material objects involved in traditional iron production.

Furnace attributes and metaphors

Iron smelting among the Oromo of Wollega has been a purely a man’s specialty. Women in iron production areas do not seem to have had any significant roles except for providing the workers with food and drink. Both women and men who are not ‘clean’ are not permitted to come close to iron smelting areas. Iron smelting has been taking place close to river (stream) banks and this can be observed from many of the old smelting sites I have surveyed and recorded. When people were preparing materials (such as tuyeres, clay for furnace and the like), they are

Figure 2. The upper part of a furnace superstructure used by West Wollega smelters for the 2007 ethnoarchaeological reconstruction I commissioned. Note the extensions added to the furnace to depict it as parts of human body such as an ear (all photographs by Temesgen Burka, 2007).



expected to abstain from some foods and drinks for fear of pollution. When some tuyeres got broken (which can be scientifically explained differently), one of the old smelters (*Obbo Tafarra Qana'a*) explained to me that it was because the tuyeres were made on market day (it was on Wednesday). He explained that on that day members of the workers were in the market where they ate meat and got alcoholic drinks (for as he said this food would 'rot' the work). On the other hand, the furnace features and the metaphors attributed to them are informative of the relationship between iron production and biological reproduction (Temesgen 2006). Unlike what I have documented in Eastern Wollega (2006) where most of the memory was lost, here a great deal of the discussions on iron production involved production, procreation symbols (Figures 2 and 3) and the memory was very vivid. Iron smelting was been carried out here up to the late 1960s and many participants are still alive, aged between 55 and 90 years old.

Figures 2 and 3 were taken from one of the two furnaces constructed for the reconstruction activity. Figure 2 constitutes the upper part of the furnace; here there are significant features as magnified from the interior under Figure 3. As indicated by the arrow on the left on the right side of Figure 2, the extension to the furnace is shaped so as to look like an ear and is called *gurra* in afaan Oromo, which in English means 'ear'. It is immediately next to the upper opening, which though it actually does not look like one is called, *afaan* the 'mouth'. The front edge of the 'mouth' is referred to as *hidhii* 'lip'. In this front side, one can observe inside the opening of the 'mouth' what looks like the *glottis* and *epiglottis* (Figure 3), which they referred to as '*qonqoo*' and '*hubaqoonqoo*', which is similar in meaning to the former and the latter respectively.

Below the lips as one looks down it looks as if the furnace is shaped to depict a pregnant woman with full breasts. Both sides of the chest are

Figure 3. Closeup of the inside of the furnace of Wollega (west) when we observe it from front top through the opening of the ‘mouth’. Although it looks like inside of the mouth, its practical use is that it serves for the insertion of the clay tuyeres from the back. They also sexualize it in their jocks.



extended what look like a breast which is called in Oromo language ‘*harma*’, meaning breast, and the bulged front bottom ‘*garaa*’ meaning belly (Figures 4 and 5). The furnace was nick-named ‘Goobanee’, a name of a woman with indication of the place of that woman in the eyes of the men. The term Goobanee has a root reference to the period when the moon gets full. For instance, ‘Ji’a Goobane’ in Oromo means ‘full moon’, the time when according to the traditional belief system in the society both people and animals get sexually agitated.

On the front side the furnace superstructure has another feature immediately from the ground surface, an aperture left first to allow workers to enter through it in order to plaster its interior. This aperture remains open until the day of smelting as the part is also used for adjusting and observing the correct

placement of the clay tuyeres as well as charging charcoal and setting on fire. There are three kinds of tuyeres employed by iron smelters of Wollega: first the major one made of clay of about 150 cm long proportional to the height of the furnace which is called *madabii*, but nick-named *qonxurro*, which means penis. The second is made of horn and attached to the bellows and the third is made from iron sheet permanently attached to the horn tuyeres and connects the bellows to the clay tuyeres which finally would be sealed to the body of the furnace entering from the top back. This opening is through which charcoal is first filled until it reaches the front tip of the clay tuyeres. Once the masters were satisfied with the placement of the tuyeres and the charcoal from the bottom, the bottom aperture is sealed with broken tuyeres (left aside for this purpose) and

Figure 4. The middle of the furnace on the front side. Note the black symbols depicted immediately above the belly. They represent a woman's breast with beautified nipples. Note also the red color showing the spread of blood between the nipples chest down on the belly of the furnace after a mother goat was slaughtered. This is meant to appease the ancestral spirits and to lead to a successful smelt.



Figure 5. A closer look at the furnace with full breast probably depicting a woman, whom they named Gobanee ready to give birth.



Figure 6. Wollega (west) furnace which is spectacularly built in a house is of over 60 cm diameter at the bottom. This allows them to enter through the bottom aperture in order to plaster its inside. Note a man is seen sitting inside the furnace while the other is providing him with clay plaster. The aperture is not sealed off until the day of the smelt.



plastered with wet clay only to leave a small opening, which they call 'faaliqa' but also with sexual symbol of 'Koshee', to mean a woman's sexual organ. The opening was used to allow an amount of breathing to go out in the form of flame, when bellows are pumped from behind, the process which they symbolize as sexual activity that impregnated the woman to give birth to the child. The aperture is sealed after it was charging with charcoal and later opened up to withdraw the bloom out (Figures 6 to 8).

The procedure of withdrawing the bloom has the characteristic features of a woman named Goobanee giving birth to the child. Once the bottom glowing fire was cleared (Figure 7), the bloom is observed through this bottom aperture formed all along the half burned tuyeres. It is knocked off by the use of a wooden hoe and when it approaches the open-

ing they brought a climber by which they dragged it outside the hut. This according to them, was the procedure similar to separating the child from the mother by tying a thread on the cord cut to it off (Figure 8). During the smelting activity that took place in all about five hours, there were some interesting activities that accompanied the works. The smelters, particularly the blowers were motivated with love songs probably the reason why women were not allowed to come close to smelting areas. The smelting was begun with prayers for the spirit of the ancestral land, the Waaqaa, the Oromo supreme God and the devil of the surrounding as the belief goes that the devil has to do with the creation of the bloom and for this a mother goat was slaughtered and the blood was spread on the furnace front along the chest between the 'nipples' (Figure 4).

Figure 6. View after the bottom aperture is sealed following the charcoal is charged through the opening and the alignment of the tuyeres is checked. It helps them check whether the tuyeres inside are properly functioning since during pumping the flame is coming in the form of a breath. They call this opening koshee meaning vagina.

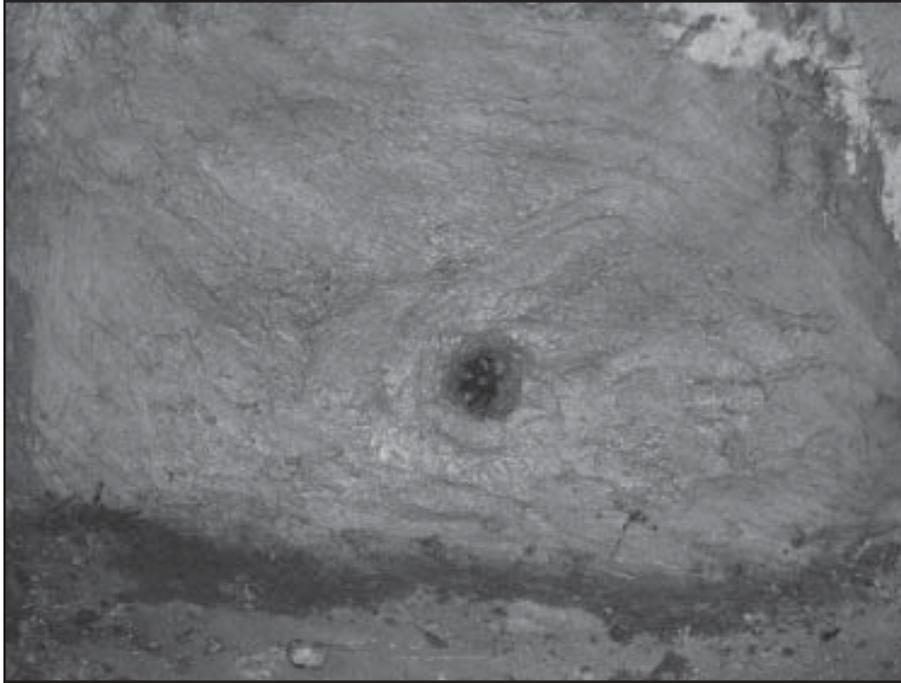


Figure 7. Once the smelting is over, the bottom aperture, the koshee is reopened. They symbolize it as the process of delivering a child. After the half burnt charcoal and slag is cleared, the bloom is knocked off where it was formed along the clay tuyeres and brought to the front.



Figure 8: After the bottom aperture is opened and the way is cleared, a ritual type of withdrawing the bloom is performed. A climber is already prepared by which the bloom is dragged all the way from the inside of the house through the door to the outside garden where some of the slag and other remnants are cleared before it is taken to the forge.



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