

AFRICAN IRON SMELTING.

The Africans are members of the VANJANJA Tribe from the Charter District near Salisbury in Southern Rhodesia.

They appear to have been practising their craft for at least 200/300 years, probably longer and the earliest records indicate late 16th Century.

The smelting principles and type of furnace have been found in some South European countries, particularly Middle East.

Ore is mined at Mount Wedza and this is where such high content ore occurs freely. There is also a deposit near Zaka but it is of lower quality.

The deposit at Wedza is too small to work commercially but will be sufficient for native purposes for many years

METHOD: The furnace is made in the shape of the torso of a woman because the production of iron & steel was a family group ~~was~~ occupation and the smelting was a women's job. Subsequently when men took over this work, to propitiate the women, the furnaces were made in the form of a woman.

A further explanation of the furnace being in this form is that there was a fertility cult influence. The women looked upon smelting as the gestation of a human child. Thus the furnace was made in the shape of a woman, the bellows and connecting pipe were ~~was~~ looked upon as a male. The dropping of the charcoal and iron chips into the furnace neck represented the female seed. Obviously considerable labour was necessary to produce the pig iron. The crude pig iron from the belly of the furnace represented the birth of the child. A further point is that the orifice of the furnace is arched like the organ of a woman.

The bellows used for blowing the furnace are made from a complete goat skin. A wooden pipe is inserted into one rear leg, this connects the bellow to a clay pipe in the bottom rear of the furnace. The remaining openings of the skin are sealed except the neck which is bound and fitted with a handle. The operator works one set of bellows with each hand. The skin is raised by lifting the handle, the orifice being open, drawing in air. The hand then seals the orifice and a downward motion compresses the skin and forces the air into the furnace. These bellows are also used for re-heating the pig iron.

The furnace is first half filled with charcoal and is blown by the bellows until the charcoal is almost white hot. Small pieces of iron ore are then dropped in through the top of the furnace. Bits of a white substance - probably lime, but Africans will not divulge the secret - are also added. The molten iron seeps down through the charcoal and collects in a puddle at the bottom of the furnace.

The time taken to produce the crude pig iron is about three hours. After all smoke has stopped the Africans smell the top of the furnace and dip their fingers into the top from time to time.

The semi-molten mass of pig iron and clinker is then raked out. The pig which resembles a large biscuit in shape is now put into a hole in the ground some 12" in diameter and 10" deep. It is covered with charcoal and is reheated for about 3/4 hour to near white heat and is then removed and fashioned into an ingot on a stone anvil, using a round stone for fashioning.

Most of the work is carried out to the music of three MBIRA or native pianos which consist of half of a dried gourd with discs cut from the outer shell of a tortoise round the ~~inside~~ outside. The keys etc., inside the gourd are of metal. There are 20 keys each of which is expertly manipulated and each of the three instruments produces a different tone.

The music is played by men who have become too old for smelting but who keep a very critical eye on those engaged on the various operations. The men sing as well as play and the music reaches a crescendo when the iron is ready to come out of the furnace and at other important stages of the work such as the fashioning of the ingot. Should the ingot show any signs of cracks it is considered a great tragedy and a great cry goes up. Tempering is carried out by heating to a dull red and then immersing in water to which has been added an unknown preparation of their own concoction. This operation is carried out several times.

The only steel made by Europeans acceptable to the tribe for working is old motor car springs.

Most of their production goes into spears, knives, axe heads and battle axes.

For forging the steel into knives etc., a charcoal hearth is used, it is blown by the goatskin bellows via a wooden pipe inserted in a clay pipe which passes through a clay wall some 2'6" long and 9" high which protects the feet of the man operating the bellows from the heat.

The bark of a tree is used for tongs to handle the hot steel, a piece about 18" long and 2" wide is bent in half.



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3rd May 1961.