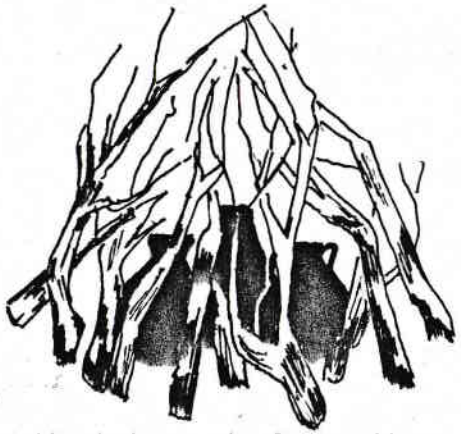
The Roman tunnel kiln is made out of clay just like the Hassaris kiln. The firing chamber or dome can be as large as one metre in diameter and over one metre high. The pedestal in the middle of the chamber supports a perforated floor. The tunnel leads into the base of the dome. The pots to be fired are placed, mouth downwards, on the perforated floor. It is possible to load a kiln like this with a hundred pots. Firing is just like the Hasseris kiln. First a small fire is lit at the mouth of the tunnel. Gradually over seven hours the fire is steadily increased. At the end the flames from the fire completely fill the chamber and the pots glow red and even white hot. It was in Roman kilns like this that pottery was first mass-produced.

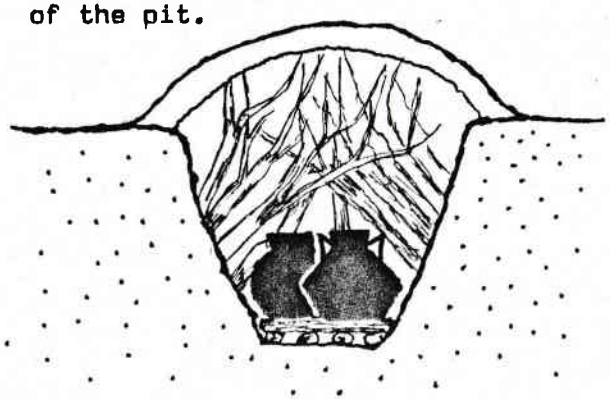
In order to turn a clay vessel into a ceramic pot it has to be fired at a temperature over 800^{0}centigrade. The nature of the clay is then permanently changed and although a pot is fragile and can be easily broken it is at the same time quite strong and can be used for cooking, storing liquids and for normal table use.

After the pot has been made it must be thoroughly air dried. Only then can it be fired. There are a number of different ways of firing clay pots.

Pottery Kilns



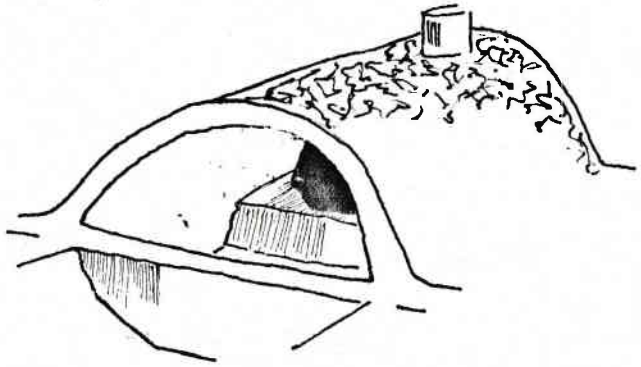
The first is a simple bonfire. Unfortunately it is almost impossible to control such a fire and because the heating inside a bonfire is so fast and irregular often the pots are broken in the uneven heat. A better system is known as a pit clamp firing. A shallow pit about 50 cms deep is dug into the ground and a small fire of sticks and twigs is built. Once the fire has burned down to glowing embers several layers of fresh cut sticks are layed on the embers. Then the pots are put, mouth downwards, on these sticks which have already started to burn at the base of the pit.



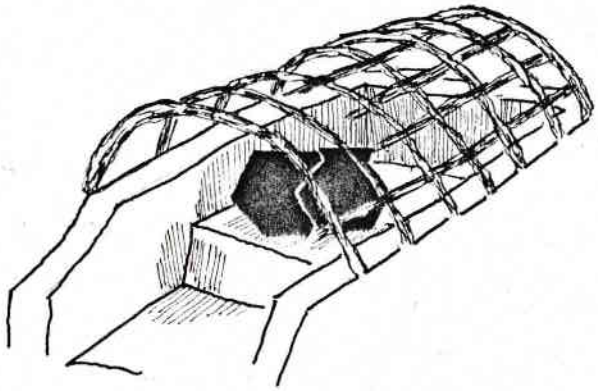
PIT CLAMP

Quickly a heap of sticks and wood is placed over the pots and finally a layer of turves or wet straw covered with earth is put over the sticks, sealing the fire in. The firing takes as long as 36 hours but the fire is slow and the pots usually are fired properly.

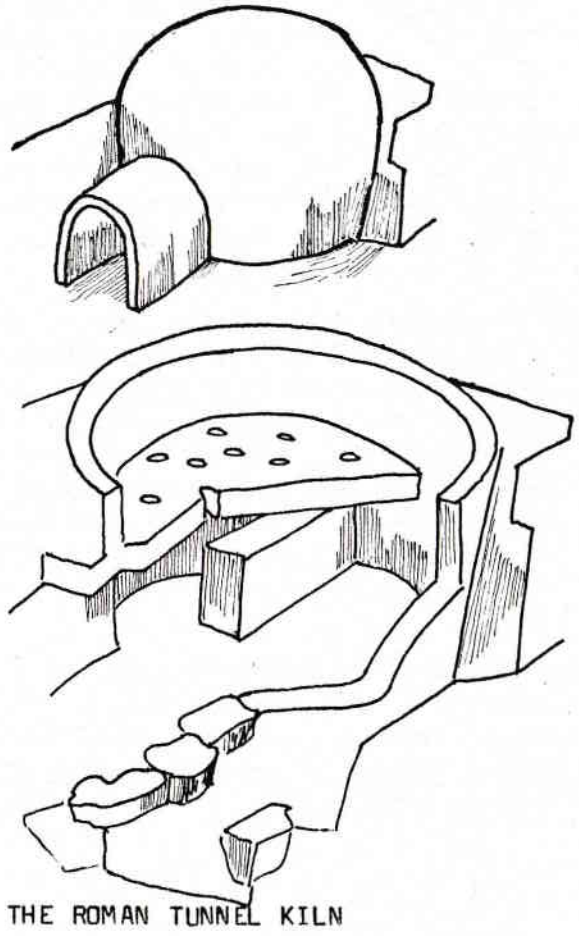
The kilns are themselves built of clay. The Hasseris kiln from the Danish Iron Age is very simple and efficient. First a wickerwork frame is built over a prepared trench, covered with straw and plastered with a thick layer of clay. A chimney is cut into the roof at the back of the kiln. Once the clay has dried out,



THE HASSERIS KILN



the whole kiln is fired into a huge pottery structure. Using this kiln to fire pots is quite easy. The pots are placed on the shelf in the fire box. It is very important to build the fire up very slowly. The rule is to raise the temperature by 100°C per hour. After seven hours the fire is built right up so that flames lick all around the pots and even pour out of the chimney. An hour at this temperature will fire the pots properly. Sometimes the kiln is covered with a layer of earth to protect it.



THE ROMAN TUNNEL KILN