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# LEIDEN JOURNAL OF POTTERY STUDIES

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## THE POTTERS OF FUSTAT (CAIRO) IN 2008: A PRELIMINARY REPORT

Abraham van As, Kim Duistermaat, Niels Groot, Loe Jacobs, Judith Schoester,  
Nico Staring and Rania Zin El Deen

### *Abstract*

*In this preliminary report a short summary is presented of the first results of an ethnoarchaeological documentation project by the Netherlands-Flemish Institute in Cairo (NVIC), executed in cooperation with Leiden University and Delft University, concerning potters of the Fustat area in Cairo. Since 2000 their workshops are being demolished and replaced by new government-built workshops. As a consequence, a traditional potters' quarter will disappear in the near future. When the project started, about ten workshops were still active, of the more than 60 once located in the area. Most of the data described in this report, in which attention is paid to techniques of pottery production, the use of space and the production organization, were collected through fieldwork in November 2008.*

### **Introduction**

Nowadays, the potteries of Cairo are located in an area called 'Batn el-Baqara' and 'Fawakhir al-Gedida', situated between the archaeological site of Fustat and the cliffs of the stone quarry to the south (Figure 1). The potteries have a long history. The location of the workshops has changed several times. In the middle ages, the potters were probably active at the edges of Fustat, first built as Egypt's capital by Amr Ibn al-'As in 640 A.D. The pottery workshops, famous for their beautiful glazed pottery, seem to have survived the fire alighted in 1168 in order to keep the city out of the hands of the Crusaders. Later, the potters used to be active in an area near the mosque of Amr Ibn al-'As, north of the present potters' quarter.

In the early 1970s Lucien Golvin, Jacques Thiriot and Mona Zakariya carried out an extensive documentation project of the Fustat potters (Golvin et al. 1982). They documented the techniques of clay preparation, shaping and firing, and provided sketch drawings of all tools, workshop layouts and kilns. In these years, the potters did not produce the once famous glazed pottery anymore. Most of them were then producing 'olla's', water jars that were fired in enormous kilns with two or three floors.

In the years hereafter the Supreme Council of Antiquities fenced off the archaeological site of Fustat, and the potters had to move. Most of them relocated southwards in the present area at Batn el-Baqara. Here, a small NVIC team paid a few visits to

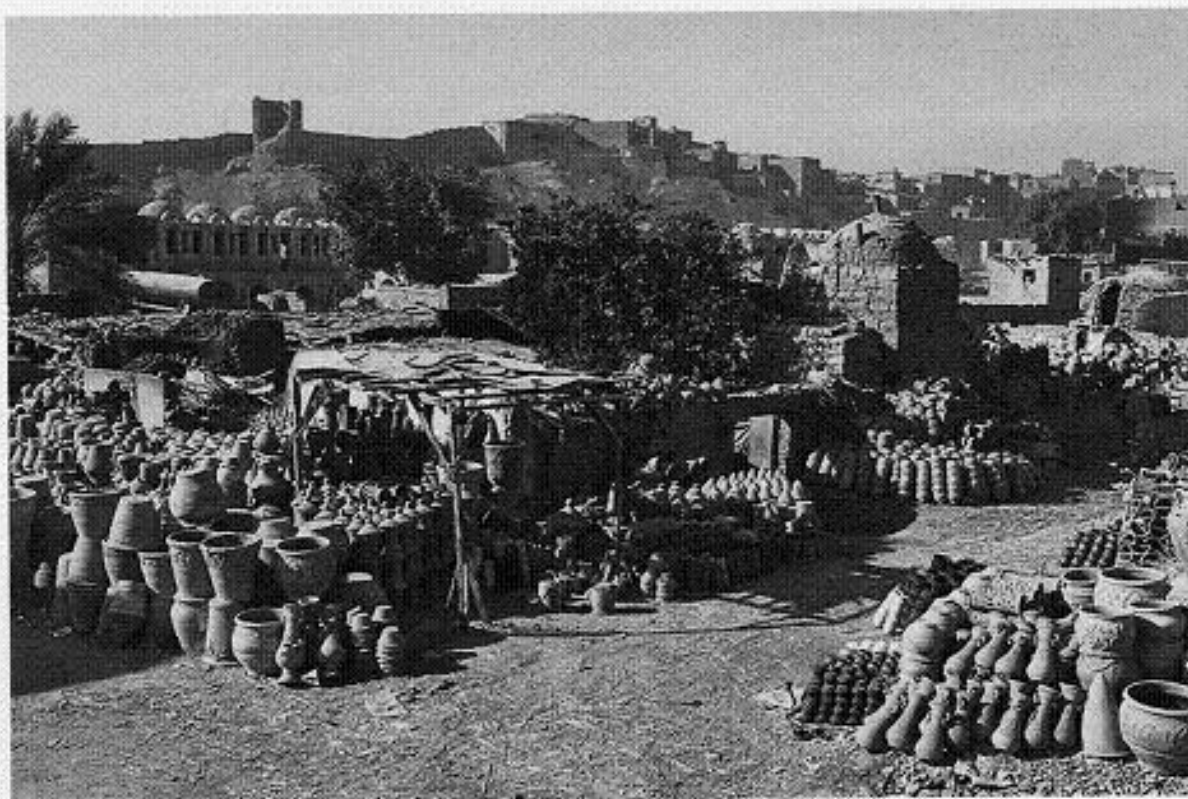


Figure 1. Overview of the pottery workshops in Batn el-Baqara, Fustat, looking towards the south-west.

them for a short documentation in 1998. They noticed that many changes had occurred over the past twenty years, related to the types of pots, the technology and the production organization (van der Kooij and Wendrich 2002). The production of water jars had stopped, and the potters were making a variety of vessels.

Ten years later, in March 2008, Kim Duistermaat and Niels Groot visited the Fustat potters again. When compared with 1998 much had changed (Duistermaat and Groot 2008: 182, 183). It also appeared that it was one of the last occasions to be able to observe the potters in their present setting. Since the thick black smoke of the potters' kilns causes much pollution, in 1999 the Egyptian government decided to close or relocate the workshops. A year later, the first potters were forced to leave the area. In order to avoid the total destruction of the craft and to guarantee the employment of the craftsmen, the potters' community, with the help of a local NGO (CEOSS), proposed a plan to build modern workshops and housing in the same area. By introducing gas-fired kilns it should be possible to reduce the pollution. After the approval of the plan, one started to demolish the old workshops to make space for new buildings. Those potters who will be able to continue their work will return to the new workshops. However, their work and production organization will undoubtedly change because of the planned presence of gas-fired kilns and electric equipment.



In March 2008 almost all old workshops had already been demolished and the new concrete buildings were under construction. About ten workshops of the more than 60 once located in the area were still active. This situation was a stimulus to begin a new NVIC ethnoarchaeological documentation project at the Fustat pottery workshops (Duistermaat and Groot 2008). The project, sponsored by the Embassy of the Kingdom of the Netherlands in Cairo, is carried out in cooperation with Leiden University and Delft University. The aim of the project is to make a comprehensive description of the techniques of pottery production, the use of space and the organization of production of these modern potters using traditional techniques. These are important aspects to document and safeguard for ethnography and archaeology. Most of the fieldwork was carried out in October and November 2008. The architecture was documented by Dina Bakhoum and her assistants, while Matjaž Kačičnik took care of the photographic documentation. The Dutch team spent three weeks in Fustat. Bram van As and Loe Jacobs (Leiden University) studied the pot making techniques. Niels Groot (Delft University) studied the use of space. Three students of archaeology from Leiden assisted them (Judith Schoester, Nico Staring and Rania Zin El Deen<sup>1</sup>). A visual anthropology student from Leiden University, Floor Breeksema, recorded the work of the potters on film. Kim Duistermaat (NVIC) studied the way production is organized, and Peter Sheehan will provide an overview of the archaeological and historical sources for the pottery craft in Fustat.

In this article we present a short summary of the observations concerning the use of space, the manufacturing techniques and the production organization noted in our diary during our visits to five pottery workshops. We understand a workshop to be an economical and organizing unit owned by one person. A workshop exists of several rooms and open working spaces. In the final publication our observations will be presented in more detail and placed in a historical and (ethno)archaeological context.

### **Layout and development of the workshops**

In November 2008 we studied five workshops that had escaped demolition of the potters' quarter. Workshops 1-3 are located in the east of the area (Figure 2). Approximately 125 meters westwards a row of workshops is situated along a street running from north to south. In this complex only workshops 4 (Figure 3) and 5 were studied.

The quarter at Batn el-Baqara grew significantly during the 1970s when most potters relocated to the present area after the forced evacuation from the archaeological site of Fustat. However, it is possible that the quarter existed earlier. According to the potters at least three workshops – workshop 2 (rooms 2 and 3) and workshops 3 and 4 – are forty to fifty years old. Workshop 2 is a brick building consisting of one room (room 3) and an exterior gallery (room 2). Several brick columns carry a flat roof of wooden beams covered with clay. The building was adapted several times, as is shown by bricked up windows and the closed northern entrance. Also, the large tower-like kiln in the north of the building has been out of use already since ten years.

Workshop 3, constructed in the same period, was also adapted several times. The westernmost room (room 2) consists of walls of stone, which are plastered on the inside and which, together with three pillars and several beams, carry a wooden roof covered with clay. In contrast to the buildings mentioned before, workshop 4 is made of concrete, except for the southern rooms that are made of bricks.

Some years after the construction of workshop 2 (rooms 2 and 3) another workshop (workshop 1) was built nearby. Because of the presence of several types of building materials we may conclude that this workshop has often been restored. Workshop 5, constructed shortly after workshop 4, was often adapted too.

After ten to twenty years, room 1 in workshop 2 was constructed between workshop 1 and workshop 2, rooms 3 and 2. It was built with a variety of materials, using roughly dressed stones and brick to construct the walls. The roof was also made from several materials, including beams, wooden poles, iron and plastic. Even younger is room 4 in workshop 2, which was built only ten years ago.

Besides construction activities demolition of buildings has also occurred. For instance, the workshop described by Wendrich and van der Kooij (1999) has been demolished in recent years. Other workshops made way for the building of the new complexes.

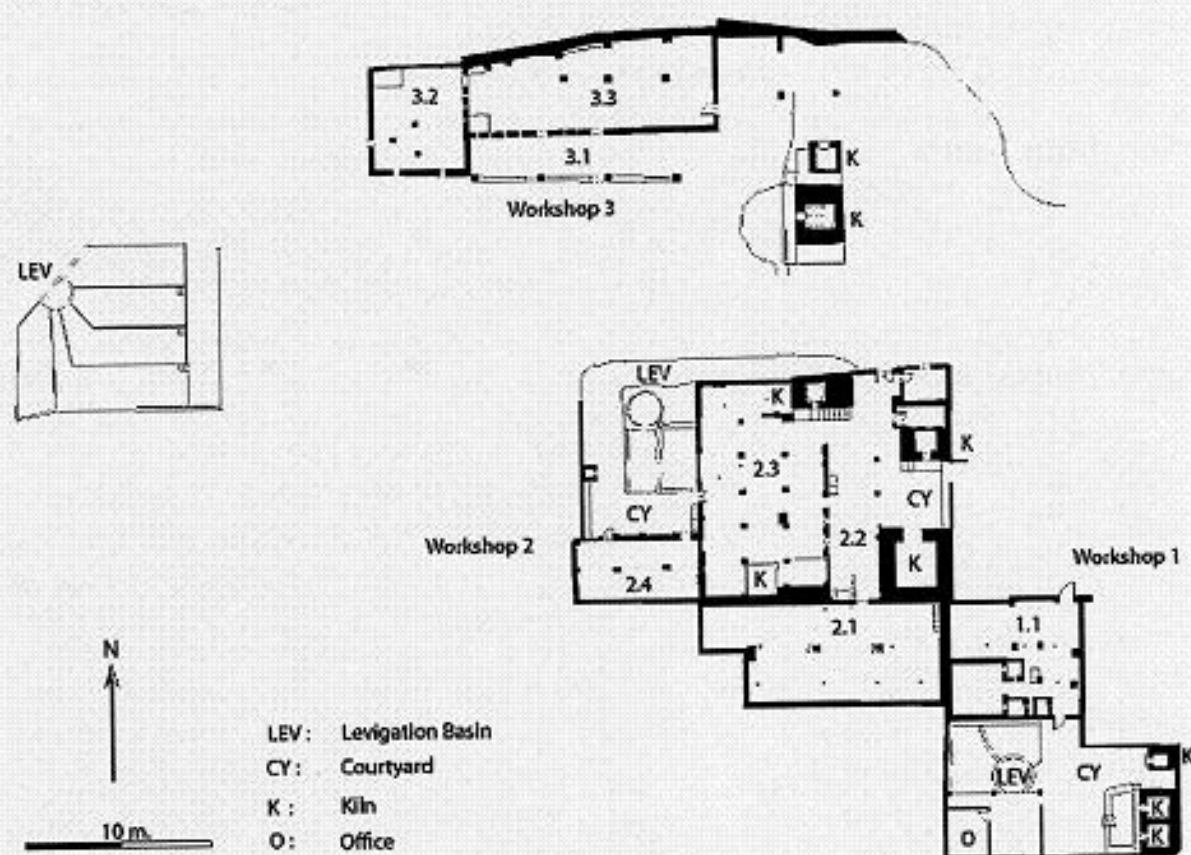


Figure 2. Map of workshops 1–3.

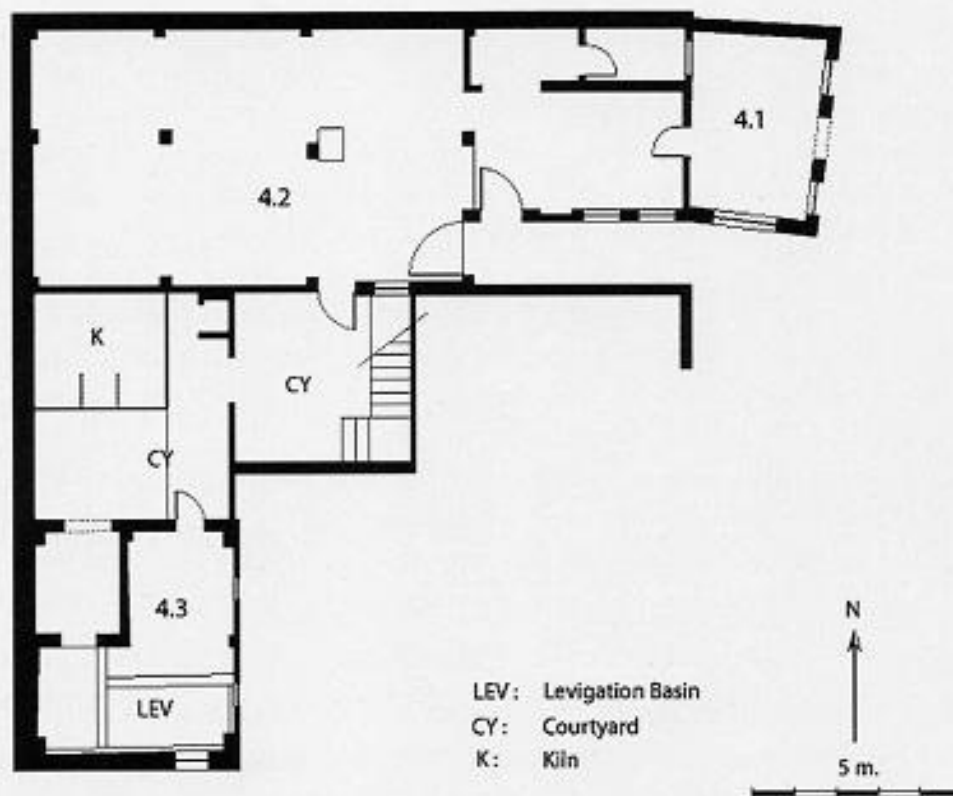


Figure 3. Map of workshop 4.

### Use of space and techniques

One of the first observations in November 2008 was that since the short visit of Kim Duistermaat and Niels Groot in March 2008, the use of space inside the complex had not changed much. As in November, in March the potters use a variety of shaping and decoration techniques for the manufacture of garden pots, garden decorations, lamps and decorative pots for use inside. In order to obtain a more complete idea of the use of space and the production sequence of the various ceramic vessels and objects, we visited the workshops on several days at different times of the day.

The use of space and the various manufacturing techniques will be described below per workshop. Apart from a description of workshops 1–4 (Figures 2 and 3), a brief impression is given of workshop 5 (bordering workshop 4 to the north; not on the plan in Figure 3) which we did not visit extensively.

### Workshop 1

Workshop 1 consists of a roofed northern building (room 1), which provides access to a southern courtyard containing a levigation basin, a series of kilns and a small office underneath the local mosque. In addition, the space to the north of the workshop is used as an extra activity area.



*Use of space*

During our visits to workshop 1, it has become clear that the use of space is relatively fixed. When approaching the workshop from the north one first encounters a large heap of unprocessed, quite dry brownish Nile clay, awaiting levigation. Nearby, as well as inside the roofed workshop, pots are drying. Outside, complete vessels are often placed to dry, while inside the semifinished products are put, like pots which are to be closed upside down (see below). Inside the roofed building the central production area dominates the central room. Here the pots are made on fast wheels and decorated on portable wheels. In an adjacent western room the clay from the levigation basin is mixed with dry clay powder. This room serves together with a part of the large room I as a place where large circular heaps of clay are stored under plastic.

In the courtyard filled with fired and unfired objects are two large petrol/diesel ovens, (Figure 4). They are now mainly used for storage. Only a small simple oven is used for firing objects. In the northwestern corner of the courtyard a large and relatively deep levigation basin is situated, in which clay is soaked. To the south of it there is an office.

*Techniques*

In workshop 1 we got to know the craftsmanship of the 48-year old Karam, who works already in a pottery workshop since he was six years old. He makes pots by throwing them on the fast potter's wheel (Figure 5). The wheel is light, not very stable and does not rotate easily (the wheel has little momentum). Therefore, the potter has to kick the wheel regularly. Karam uses several throwing techniques: throwing from the hump, throwing pots of one single piece of clay and throwing in parts (coils or cylinders).

By throwing from the hump (or throwing from the cone), several small and medium-sized vessels can be made out of one large cone-shaped hump of clay. The clay is worked in a relatively soft condition and shows little coherence (the clay has little 'bones'). With the use of a thread, Karam cuts the small vases from the hump and puts them on a wooden board. As soon as the board is full, the man who kneaded the clay before Karam started to throw the small vases, takes the board out in order to let the vases dry in the sun. Pots made of one single piece of clay are made in two phases. First, Karam throws a pot with a hole in the base. Next, after a drying phase, he puts the pot upside-down on the wheel, throws the still soft clay upwards and closes the base. High objects (a kind of pot stands) are made of cylinder parts. Karam puts a dry cylinder part made earlier again on the wheel. On top, he places a second still soft cylinder, after which he fastens them together by further throwing.

In some cases the pots are decorated. The rims of the small vessels thrown from the hump, for instance, are sometimes decorated with a small wooden roulette wheel. Other pots, which were made by Karam, are decorated by Ahmed. He puts the pots on a kind of turntable, smoothes the outside with a scraper of plastic and provides the rim with a wavy pattern. Next, Ahmed puts the pot upside-down on the wheel, and with a knife he scratches a decorative pattern in the wall. With the use of a wet sponge and a small plastic scraper he finally smoothes the surface of the pot.



Figure 4. Workshop 1: the courtyard filled with fired and unfired objects. In the background from left to right: a small kiln and two petrol/diesel ovens.

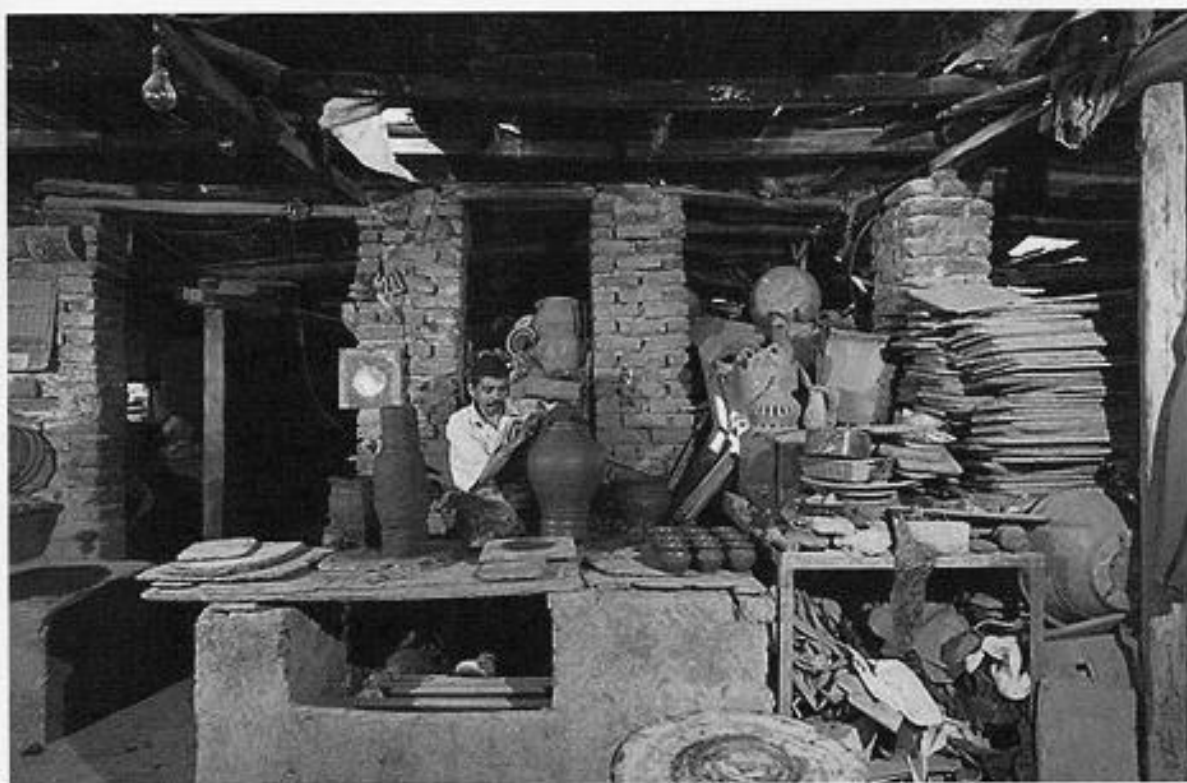


Figure 5. Workshop 1: Karam throwing pots on the fast potter's wheel.



In the courtyard next to the workshop is a clay basin that consists of three parts: a circular water basin, a sedimentation basin and a basin in which one puts the finally well sorted clay. After dry local Nile clay has been thrown into the circular water basin, the basin is continuously filled with water from a tap. Meanwhile, a man steps into the basin. Standing up to ca. 80 cm deep in the water he tramples the clay with his feet and stirs through it with his hands in order to remove the coarsest particles such as small stones. He throws the impurities aside and loosens the clay with a hoe. As soon as most of the coarsest impurities are removed from the clay, he closes the opening between the circular water basin and the adjacent sedimentation basin with clay. Next, he turns the tap off and bails the clay and water with a bucket out of the water basin and throws it through a sieve with a mesh width of three to four mm into the adjacent basin (Figure 6). After a while, as soon as the water level in the circular water basin has fallen completely, he takes the plug out of the opening between the basin and the water basin. Consequently, the water streams back from the sedimentation basin into the water basin. Hereafter the tap is opened and the circular basin is filled with water again. The purification process of the remaining clay starts from the beginning, until all clay is transferred to the sedimentation basin where the purified clay is mixed with powder of red Aswan clay. When the two sorts of clay (local Nile and Aswan clay) are well mixed and have settled down, the clay is transferred to the third adjacent basin. Here the clay stays for some time before it will be moved to the workshop, where the pile of clay waits further preparation. For this purpose, two men begin to trample the clay with their feet after which pieces of clay are taken from the pile. One man tramples these pieces of clay while he mixes the clay with powder of Aswan clay. Next, the clay is brought to a stone table where another man kneads the clay with his hands and mixes it again with powder of Aswan clay. Now the clay is completely prepared and ready to be used by Karam.

During our visits we had the opportunity to observe the entire firing process in the small and simple open updraft kiln. One day, at the end of the morning, Karam and two assistants load the kiln with dried pots of various sizes and shapes. After two hours the kiln is filled. The top of the kiln is closed with a layer of roof tiles covered with a number of sheets of corrugated iron. Karam closes the opening of the pottery chamber with bricks and plaster.

Directly after loading the kiln is alighted. They begin to carefully fire some paper and wood. Next, the fire room is closed with an iron plate. Not much later, new loads of wood are added at irregular intervals until the desired temperature of ca. 900° C is reached. According to one of the men helping Karam to load the kiln, not many people know when the right temperature is reached and one can stop to add fuel. He knows it because of the colour of the flame. In the workshop there are only a few people who are able to fire the kiln. After two to three hours the kiln is at the right temperature. They let the kiln fire during the entire night. The next morning the kiln is still closed, but the firing is completed. The kiln is not unloaded until the vessels are needed or until other vessels have to be fired (Figure 7).





Figure 6. Workshop 1: clay basin in the courtyard. Bailing the clay and water with a bucket out of the water basin and throwing it through a sieve into the adjacent basin.



Figure 7. Workshop 1: unloading the small pottery kiln in the courtyard.

## **Workshop 2**

### *Workshop 2: room 1*

The ground plan of room 1 of workshop 2 of is rectangular, with an extension to the west. Two large columns support a quite flimsy roof of wooden and iron beams. The east-west oriented room can only be entered through a door from room 2. In the north-eastern corner of room 1 is an iron staircase leading to the roof.

### *Use of space*

When entering room 1 of workshop 2 from the north, one is struck by the wide array of activities taking place in this room (Figures 8 and 9). The westernmost part of the room is used for storage of clay brought from the clay basin situated next to rooms 3 and 4 of workshop 2. Here, we find also a smaller heap of fine clay, partly covered with plastic in order to keep the clay moist. Besides a place for storing and preparing clay room 1 includes also two locations where pots are produced. Firstly, two kick wheels are situated against the northern wall west of the door. Secondly, in the eastern part of room 1 we find portable wheels on which mould-made objects are finished and decorated. Room 1 is also used for the first stage of drying. Final drying takes place on the roof of or in room 3.

### *Techniques*

During our visits the wheels are in operation. At the same time a young boy takes clay from the heap to form it into slabs intended for the manufacture of clock-shaped objects in a mould. The finished objects are placed on the shelves against the northeastern wall for drying. The space directly in front of the entire southern wall is used for storage of unfired vessels.

### *Workshop 2: room 2*

Room 2 probably served as a gallery belonging to room 3 leading to a courtyard. After the construction of room 1, however, the gallery became a passage between the two adjacent rooms.

### *Use of space*

Now, no pots are decorated as was the case in March 2008. The space is used as an alley and provides access to the small kiln situated to the east. Across the kiln stands another partially collapsed kiln. In between, a large amount of fuel is dumped.

### *Techniques*

As mentioned hardly any activities take place in room 2. Men and boys walk to and fro through the passage, from the clay basin next to rooms 3 and 4 to the clay pile in room 1, with rubber baskets (*zambils*) loaded with lumps of clay.



Figure 8. Workshop 2: room 1 (seen from the east).

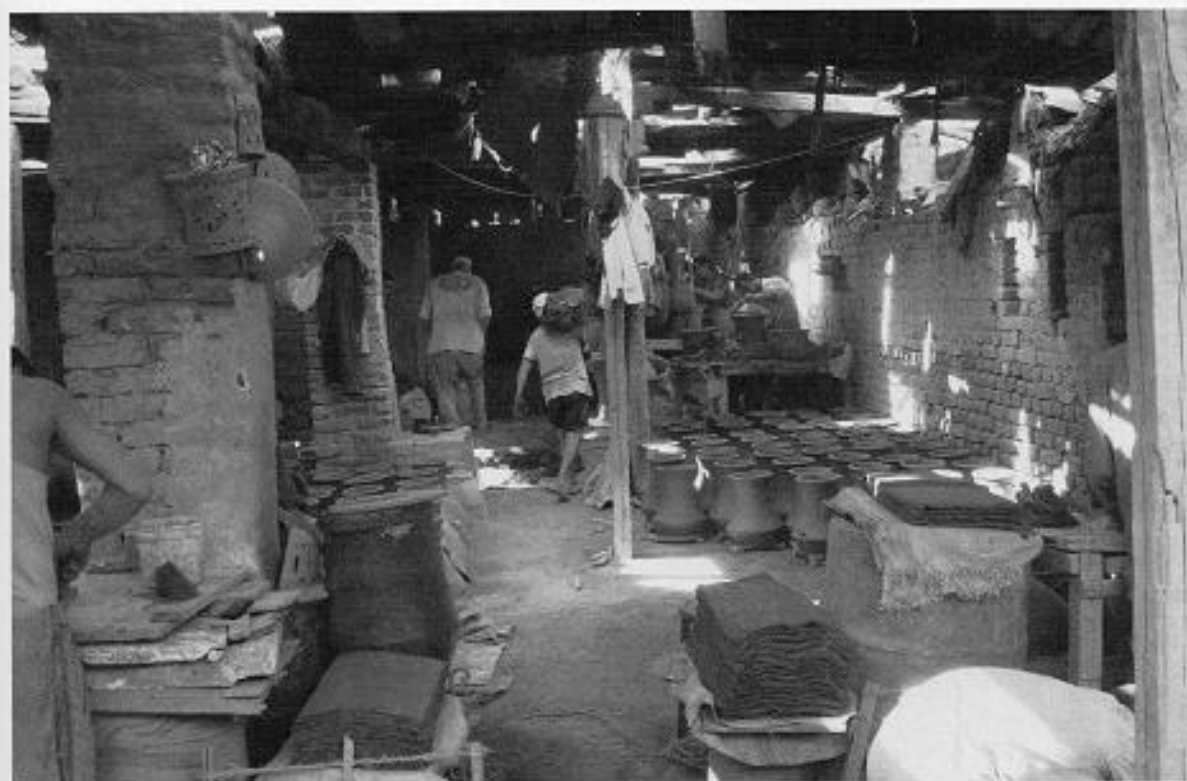


Figure 9. Workshop 2: room 1 (seen from the west).



*Workshop 2: room 3*

This complex roofed room is one of the oldest spaces within the workshop. As mentioned before this brick room was adapted several times throughout its existence, which can be discerned by bricked up windows and the former northern entrance. Also, the large tower-like kiln in the north of the building has gone out of use since ten years. It has been replaced by a smaller kiln in the same room (Figure 10). In order to accommodate for this new kiln, the roof over the kiln has been removed.

*Use of space*

This large pillared room is mainly used as a location for storing many large unfired vessels, awaiting firing or additional decoration. Additional finishing or decoration takes place in the centre of the space, but mainly in the eastern aisle of the workshop. To the south, the new relatively small updraft kiln is partly dug into the ground. The exposed sides of the pit show a superposition of sherds suggesting that prior to the construction of the room earlier pottery producing activities had already taken place. Possibly, the history of the quarter extends even further into time. The three to four years old small kiln has probably replaced the impressive tower-like kiln, which was built together with this workshop. The old kiln, together with a part of the roof, now serves as a storage facility for fired vessels.

*Techniques*

In room 3 many objects that were made in room 4 are drying. Among these, a woman is finishing the dry mould-made objects by scouring them with a steel brush. In the eastern part of the room, around the door into room 2, a number of men are sitting on chairs behind stands of which the circular plateau can be rotated. They are decorating the high leather-hard objects that were brought in by one of the helpers of room 1, where the objects were made. With a knife they cut decorative patterns of small holes into the leather-hard clay. Per object, the cutting of the holes takes ca. ten minutes. In this tempo two persons decorate ca. one hundred objects per day. In other words, they work ca. eight-and-a-half hours a day. This fits with their saying. One of the men, Alaa, began when he was ten years old and works here for eleven years already. Ibrahim taught him the craft. He has been a potter for thirty-five years now, and makes the high vases that are decorated here.

On one of our visits the (new) small kiln is still hot inside, and completely filled with all kinds of mould-made objects. The fuel of the kiln consists of waste wood of small wooden boxes. During the evening and night before, the kiln was fired until 900-1000° C for twelve hours. The next morning the kiln was opened so that the objects could cool down. To fire one kiln load the potters need ca. 2000 kilograms of wood.

In the courtyard between rooms 3 and 4 of workshop 2 is a clay basin that, just like the clay basin in the courtyard of workshop 1, consists of three parts. Both clay from Aswan transported by boat via the Nile and Nile clay from the direct vicinity of Cairo



Figure 10. Workshop 2: room 3. A small updraft kiln constructed of stone and bricks.

are used. The ca. fifty centimetres thick clay layer in the eastern sedimentation basin is sprinkled with clay powder and loosened by hand. One man and two boys bring the lumps of clay from the basin to room 1.

#### *Workshop 2: room 4*

The youngest room of workshop 2 is a ten years old rectangular room measuring ca. 5 x 8 metres. Its walls and two columns are made of brick. The columns carry a roof made of a myriad of materials.

#### *Use of space*

In room 4 various objects are made in moulds: horses, elephants, camels, peacocks, frogs and clock-shaped objects to be used for garden decoration (Figures 11 and 12). The working places are situated between the moulds and drying objects that are spread over the workshop. Drying of the objects takes place especially inside the room against the western and northern walls.

#### *Techniques*

Three men are working here: Ali, Fuad and Mohamed. Their working hours are from 8 a.m. till 5 or 6 p.m. Everybody has his own task in the manufacture of the mould-

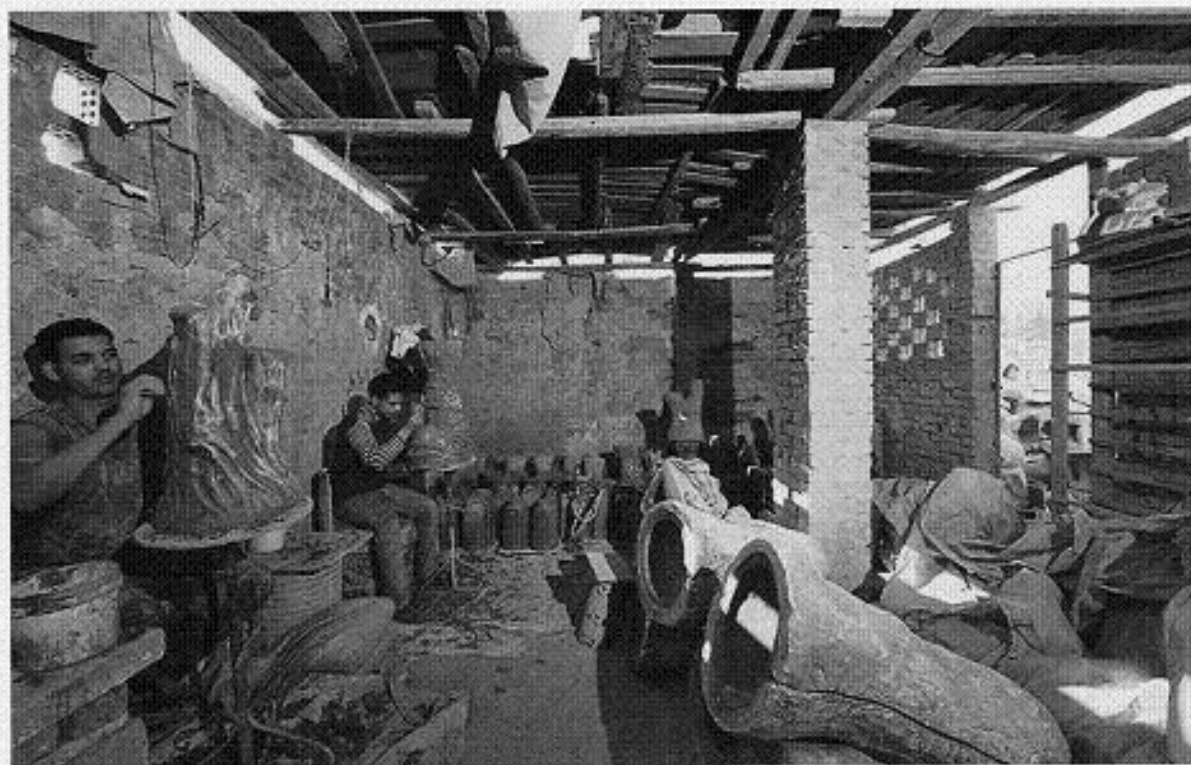


Figure 11. Workshop 2: room 4.

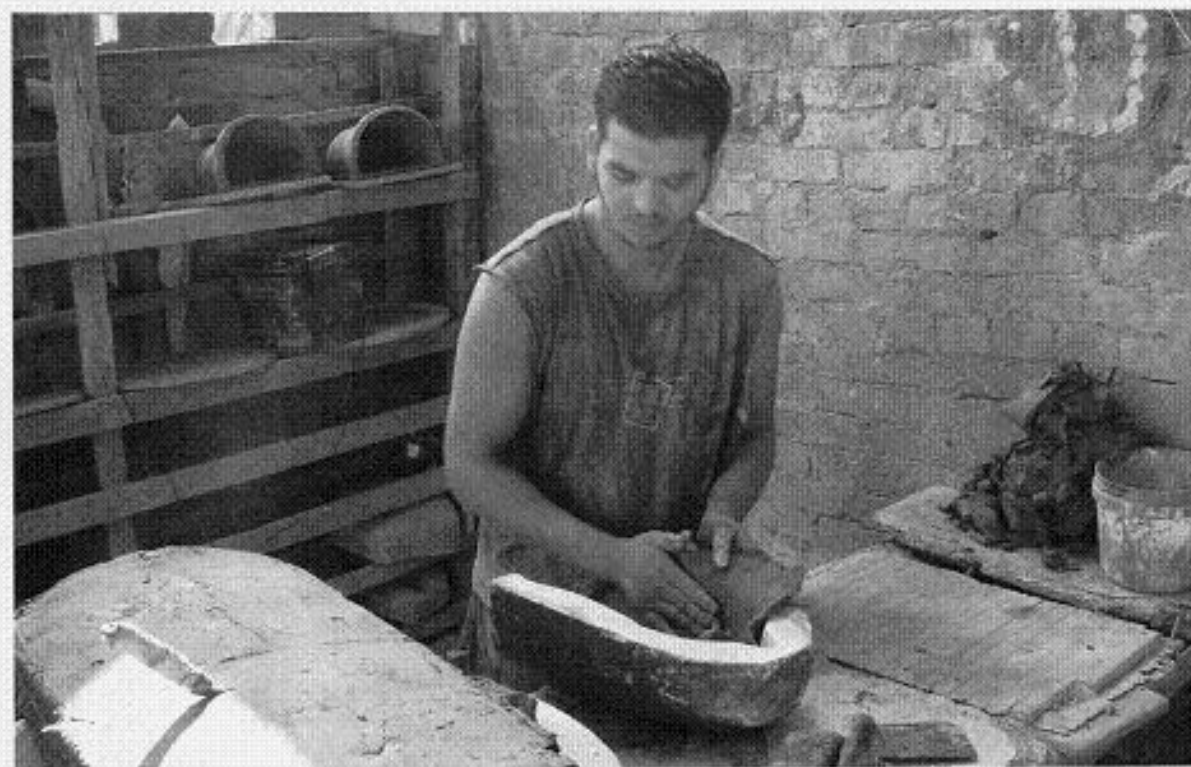


Figure 12. Workshop 2: room 4. Making a mould made object.



made objects: the preparation of the clay slabs, the shaping of the objects in the moulds and the decoration of the objects by scratching and cutting the leather-hard clay. However, it became clear by visiting the workshop on several days and hours that the men in turn carry out the different tasks.

The moulds are made by enveloping a solid clay sculpture with gypsum. They can serve for two years. The larger moulds consist of two or more parts. The slabs of clay are made by placing a large hump of clay on a board with low raised rims and covered with a piece of textile. The clay is pressed with one foot and the superfluous clay above the raised rim is removed with a tool. Finally, the slab of clay is smoothed with a scraper. Before the slabs of clay are put into the moulds, the inside of the mould is sprinkled with dry talc powder. The slab of clay is then pushed into the mould, the surface is wetted with water and some extra clay is added to the rims of the mould. The mould is turned upside-down and then removed. Finally, the superfluous clay of the clay slab is cut away. For the manufacture of horses, elephants, frogs and such-like objects two or more parts of the mould are placed against each other. If the clay does not stay long enough in the moulds in order to harden to some extent, the objects run the risk of collapsing. It is also important that the wall is equally thick everywhere. After a drying phase, the object is put on a turning wheel to be decorated and finished. A pattern of holes is cut into the leather-hard clay. By rubbing the surface with a sponge, the object is finished.

### **Workshop 3**

Workshop 3 is a rectangular 40 years old building constructed of stone and some bricks. It consists of an open gallery (room 1) and two rooms. The square western room (room 2) is plastered on the interior. According to the potters, this serves to keep the clay stored in this room relatively moist. Originally the other room (room 3) seems to have provided access to additional spaces or spaces towards the east. Only some remnants of these buildings were observed now.

#### *Use of space*

During our visits room 2 is used for the storage of wet clay. On a bench a set of warped unfired vessels were dumped, possibly for later reuse of the clay. The eastern room is not used. It contains a wheel, moulds and other implements that seem to have been left behind, just like some fired and unfired pottery. The production activity takes place outside in the gallery, where roof tiles are produced as well as on the terrain in front of the workshop, where the roof tiles are laid out to dry (Figure 13).

#### *Techniques*

Ahmed is engaged with making roof tiles in the gallery of workshop 3. He places a wet piece of cloth in a metal mould with a raised rim. Next, he takes some clay from a pile



Figure 13. The terrain in front of workshop 3, where the roof tiles are laid out to dry.

of prepared clay lying on the ground, throws the soft clay into the mould and fastens it with his feet. In order to avoid the clay sticking to his feet, Ahmed sprinkles the clay with some dry clay powder. Then, he cuts the surplus of the clay away with the use of a metal thread attached to a wooden frame. Then he lifts the slab of clay together with the piece of cloth from the mould and puts it into another metal mould on his working table. This mould is a solid steel plate bent in the form of a roof tile. The piece of cloth prevents the clay from sticking to the metal mould. With three strokes of a rubber tool, Ahmed presses the slab of clay firmly into the mould. Next, he cuts the surplus clay away with the same cutting tool that he used for making the slabs of clay. He marks the inside of the roof tile with a stamp, indicating the name of the workshop. The roof tile is turned upside-down on a board and the piece of cloth is removed. The roof tiles are laid outside in the sun to dry. As soon as they are almost completely dry the roof tiles are provided with a slip layer consisting of a mixture of iron oxide and clay slip. This gives the roof tiles their red colour and lower water permeability. The wet slip layer is smeared on the tiles with a sponge and finished with a plastic rib. The roof tiles are not allowed to be too dry before applying the slip. Otherwise, the clay slip will not fasten very well to the roof tiles. In workshop 3, also other moulded objects are made. However, no pots are thrown on the fast potter's wheel.

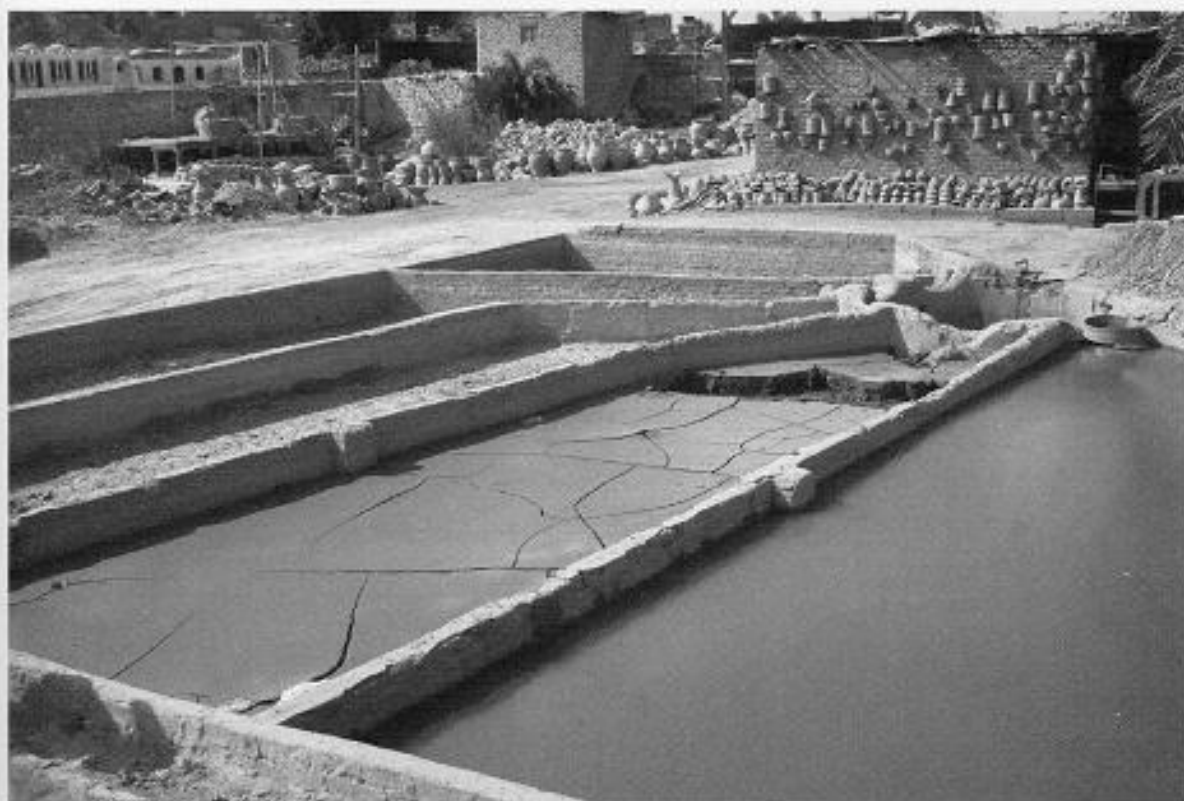


Figure 14. The clay sedimentation basin situated southwest of workshop 3.

East of workshop 3 are two kilns: one kiln with a dome-shaped roof, built against another smaller kiln with a flat roof. Both are updraft kilns constructed of bricks, consolidated with natural stone and plastered with clay. A grid separates the fire chamber from the vessel chamber. These wood-fired kilns last long if they are well kept and regularly repaired. During one of our visits the smaller kiln, which has not yet cooled down, is emptied. A man unloads the roof tiles from the kiln, while a boy takes them in batches of ten to a small truck. Now and then, the man carries roof tiles by the twenty to the truck. He rejects the over-fired roof tiles. The tiles, which will cost 40 piasters each, are loaded on the truck and transported to the distribution location.

Southwest of workshop 3 is a clay sedimentation basin consisting of four east-west oriented basins separated by thin ca. 60 centimetres high brick walls and a smaller north-south oriented water basin (Figure 14). All other basins are connected with the water basin. The water can easily stream into the basins through a small opening. When we visit the clay sedimentation basin, the small basin is filled with half-wet clay. From south to north, the four remaining basins are respectively filled with dry clay, nothing, wet clay, and water. The potters' clay is composed of clay from Aswan and earth from nearby the workshop. After mixing these components in water, the clay is sieved and dried. The settling of the clay takes ca. ten days, in summer only four days. The clay is used for the manufacture of roof tiles and other objects.



#### Workshop 4

This concrete building complex includes several working spaces and was constructed ca. 40 years ago. The roof can be reached by a stairway in the courtyard, in which a kiln is situated.

#### *Use of space*

The space east of the complex close to the entrance is used for the storage of a heap of dry Nile clay. Here also, vessels are placed to dry and fired products are waiting for transport. Upon entering the complex one notices the decorated façade. When one enters the building, one first has to pass a room, used as storage for fired vessels (room 1). It provides access to a large space (room 2) of which the roof is carried by two columns and several pilasters. On the nicely paved floor a range of activities take place, like the storage and processing of clay, the forming of vessels, and drying. In the southern wall of room 2 a door gives access to a small courtyard where a kiln is situated. A stairway leads to the flat roof of the workshop, which serves as a location for the storage of end products. The courtyard also leads to the plastered levigation room (room 3) with its three basins, where the clay is soaked and levigated.

#### *Techniques*

The purified settled clay from room 3 is brought to room 2. Here, the clay is trampled with the feet, while clay powder is added. A metal pin is used to cut off pieces of the clay pile in order to be kneaded on a stone table. In the workshop are also two rather light-weighted potters' wheels. The helpers carry and knead the clay, set the pots aside to dry and load the kiln. Elsewhere in an adjacent room somebody is decorating pots. After smoothing the surface of a leather-hard pot, he makes two parallel lines in the clay with help of a pair of compasses. He cuts a rectangular hole in the neck, and with a knife he scratches patterns between the two parallel lines. Next, he smoothes the surface with a wet sponge and sets the pot outside to dry in the sun. After firing, the pot is painted according to the consumer's demand. Finally, the pot becomes a part of a set of three: a standard, a pot and a kind of lid. The pot is used as a debris container, the lid as an ashtray.

In workshop 4 several throwing techniques are observed (Figure 15). Large pots are made in various stages. The debris container, for instance, is made in three phases. First, Hassan throws a pot with a hole in the base. His assistant, Hamdi, places the pot somewhere else in the workshop to dry. After one day, a cylinder-shaped neck is put on top of this pot. In the third phase, the pots are set upside-down on the wheel and a conical base is formed. Various other types of vessels are also made in phases. For the manufacture of an amphora, for instance, first a pot with a thick-walled lower side is made. Then, after a drying phase, the pot is put upside-down on the wheel. With a knife the potter cuts a hole in the bottom and throws the still soft thick clay into the form of a base. Finally, he makes the wall thinner by scraping. Some of the spherical pots made in the first phase are wrapped with rope against tearing during the drying phase. Like in workshop 1, here in workshop 4 pots are also made in cylinder parts.



Figure 15. Workshop 4: throwing on the fast potter's wheel.

The kiln in the courtyard is wood-fired. However, a burner using vaporized petroleum is also used during the firing process. The oil is kept in a barrel standing on an elevation near the kiln. A firm blower provides the air supply. In the first phase of the firing process the potters use wood. This fuel enables them to better regulate the temperature. This takes ca. three hours. When the fireman stirs the fire the kiln starts to smoke enormously (Figure 16). Above 600°C, when the water has disappeared from the clay (including the crystal water), they start to use the gas burner as well. The kiln reaches a temperature of 900°C to 1000°C. After three hours of firing at this temperature the kiln is allowed to cool down during one night. The total firing process takes ca. eight hours. The kiln can contain ca. 100 big vessels or 130 smaller vessels.



### **Workshop 5**

Workshop 5 with its dilapidated roof includes clay basins, two potters' wheels and two updraft kilns (Figure 17). Somebody is instructed how to knead the clay. The potters are throwing pots while others are preparing clay (Figure 18) and decorating vessels (Figure 19). A vertical stick with a cross-stick attached at a variable height is fastened with a piece of clay to the tables next to the wheels, and used to indicate the intended height of the vessels. Some vessels are made in phases, for instance by means of placing coils or cylinder parts on top of an earlier made lower part of a vessel. For strength and to prevent collapsing during the throwing of large jars in coils, the jars are wrapped with a rope. The decoration of the large high vessels exists of motifs made of rolls of clay that are fastened on the still soft clay. A woman enters the workshop diffusing a kind of incense in order to drive away the bad spirits.

### **Post-firing decoration**

Post-firing decoration takes place outside the workshops. Outside workshop 5, for instance, fired pots are plunged into an oil drum filled with black colouring-matter. After drying in the sun for a while, the outside of the surface of the pots is painted in red. Finally a kind of white varnish is applied with a brush.

### **The organization of production**

Part of the project specifically addresses issues of production organization, in order to provide context to the information on techniques and use of space. In this way, we aim to contribute to the archaeological study of the remains of pottery workshops, involving the reconstruction of production organization based on material remains. The production organization in the Fustat workshops was studied with the help of a questionnaire. The questions guided the interviews held with the owners and staff of the workshops. The respondents were very friendly and open about their craft and talked easily. However, the course of the conversation and the time permitted during the visits not always allowed for answers to all questions. Moreover, not all workshops could be visited, and not all visits were of similar length. The study is therefore only a qualitative and selective description of various aspects of production organization in Fustat. This first outline of the production organization is based on interviews with the staff and owner of workshop 1, carried out in January 2009.

The workshops in Fustat are by no means a simple household affair. They are part of officially registered, taxpaying commercial enterprises. Workshop 1 is owned by Ali Darwish Ali and his brother Ossama. Apart from this workshop, they own a crusher for crushing sherds and clay to powder, a shop in another area of Cairo (Giza) to sell their wares, another pottery workshop where glazed wares are produced, and a roof tile factory. Moreover, they both are partners in workshops owned by others, investing





Figure 16. Workshop 4: the smoking kiln.

their money for profit. Although the Fustat workshop nowadays looks very simple and poor, it is part of a larger business and is aimed at making a profit. Mr. Darwish Ali is also the head of the Fustat Association for Pottery Production, which aims to represent the potters with the Egyptian government.

Ali and Ossama come from a family of potters and inherited the workshop from their father. Ali's own children, however, are not trained as potters. Ossama's children are younger and do hang around the workshop to carry out simple tasks. When Ali and Ossama were young, the family workshop was located in the area of the Mosque of 'Amr. They estimate that of the people working in the Fustat workshops nowadays,

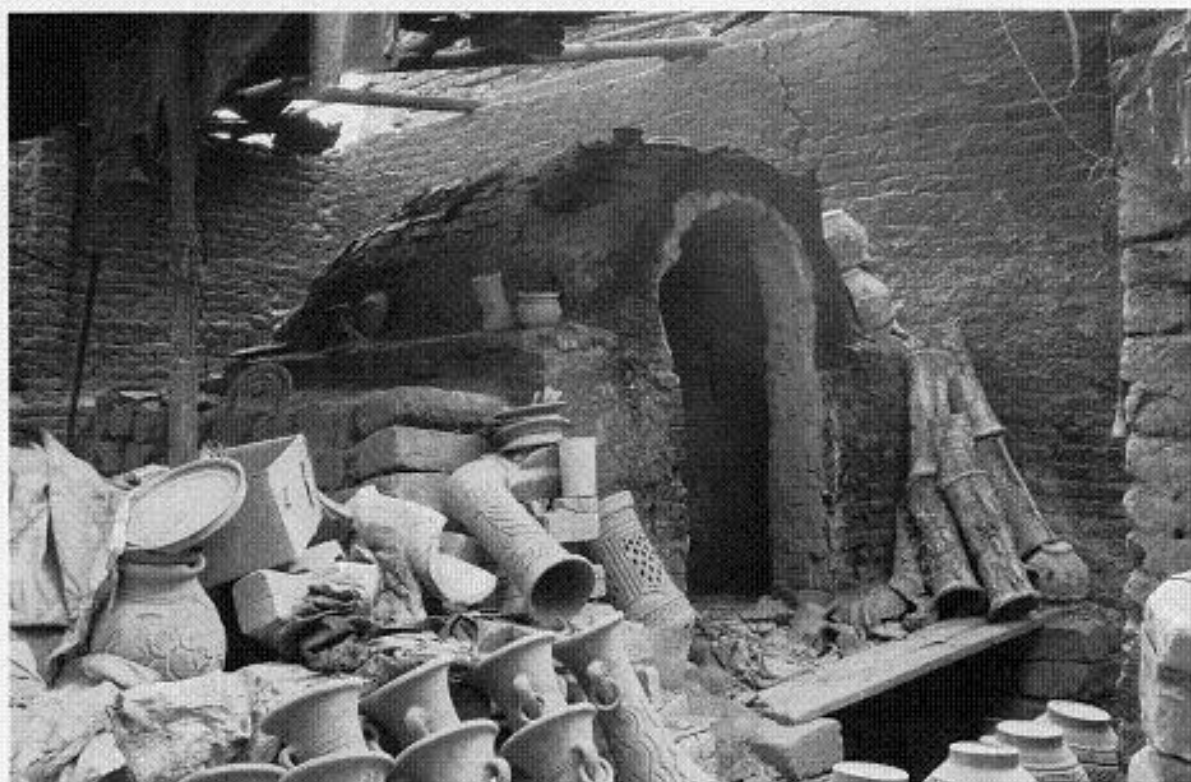


Figure 17. Workshop 5: one of the kilns.

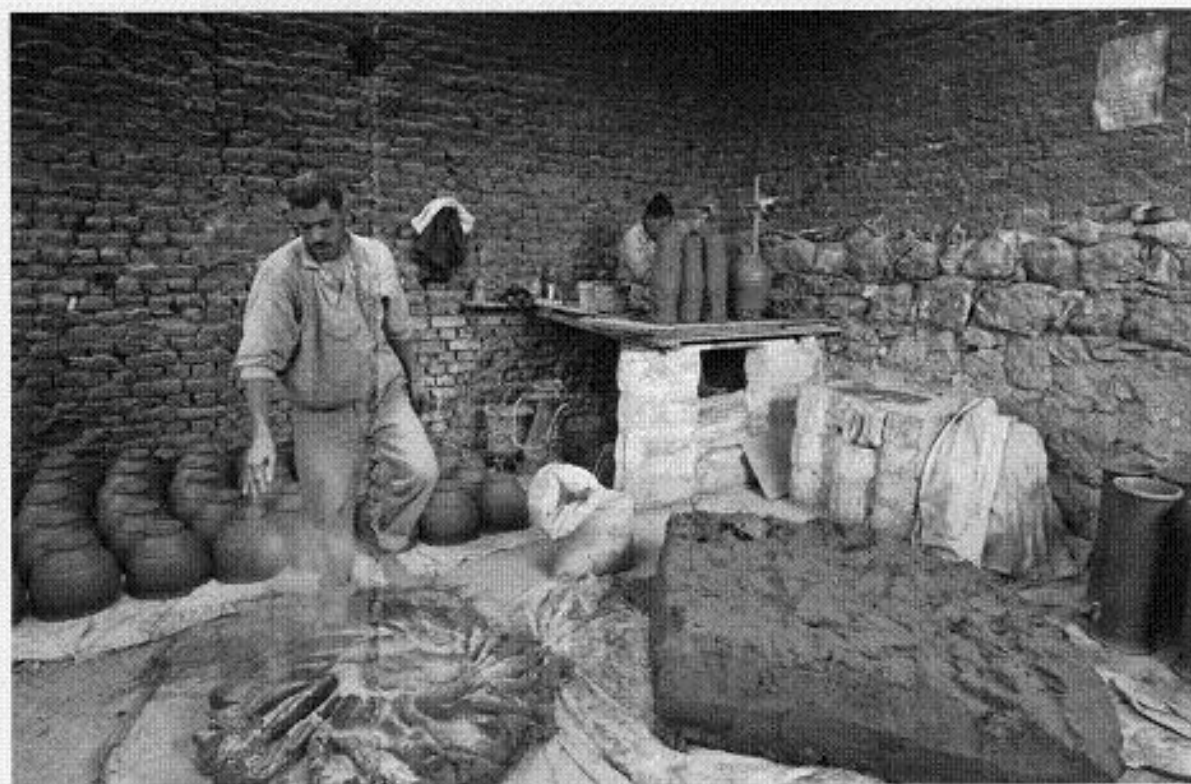


Figure 18. Workshop 5: throwing pots and preparing clay.

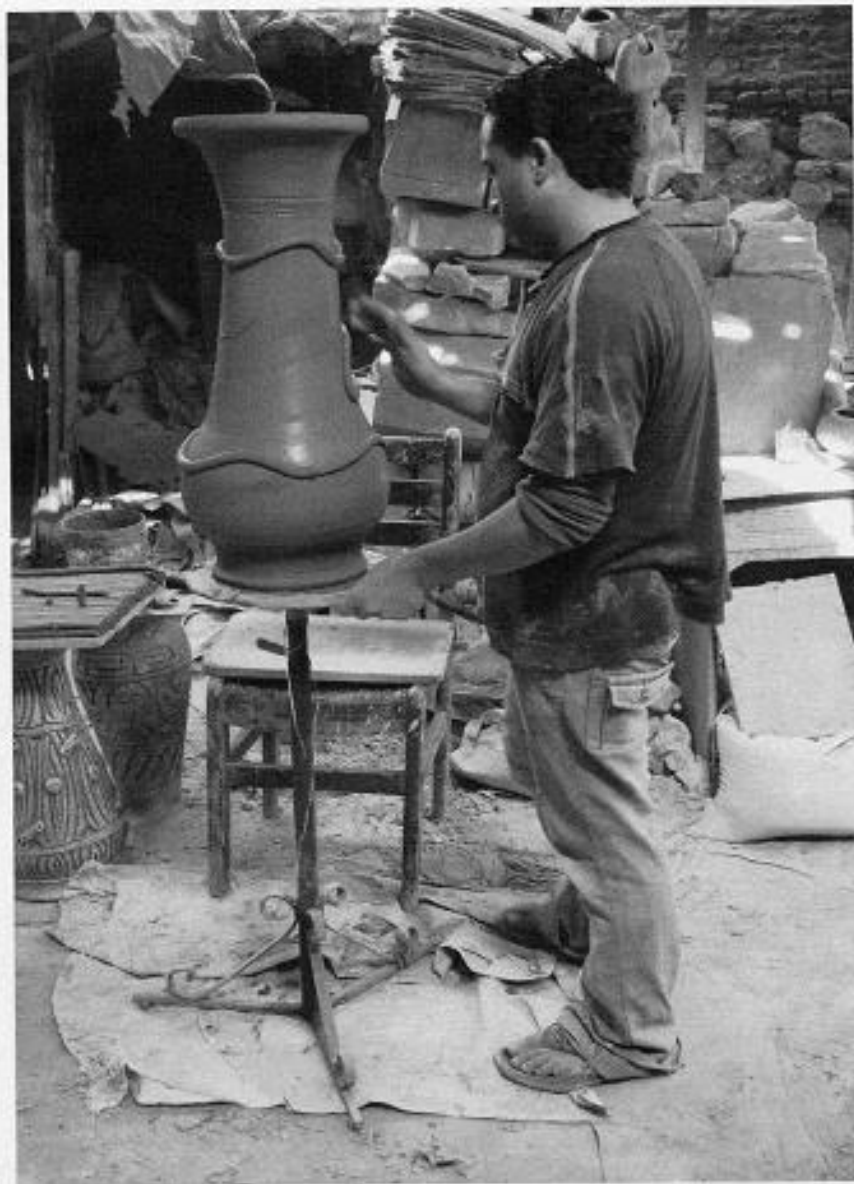


Figure 19. Workshop 5: decorating vessels.

about twenty percent come from families without any previous history in the pottery craft. The whole family income of both Ali and Ossama is generated through their pottery business.

The workshop operates on a fulltime basis. They produce year-round, but production is very much depending on the demand. The high season for them are the holidays: Valentine's day, mother's day, and religious holidays, when giving flowers in a nicely decorated pot is customary. In the old days they would produce a surplus in summer to meet demand in winter, because production in winter is slower. Now, the market is more difficult and they stopped doing this. In the old days they made a lot



of serial shapes, like drainage pipes or planters for nurseries. Production numbers reached 10,000 pieces per week. Nowadays, their production is both more varied and lower, and hardly reaches 3500 pieces a week.

The employees in the workshop are not related to the owner, apart from the youngest boys. Now there are only men, but in the past women were working here too. They decorated, carried things or sometimes even worked on the wheel. In the past there were about 20 people working in this workshop, but at the time of the survey there were six. All adults work fulltime and derive their complete salary from this job.

Although all workers are able to do most jobs in the workshop, each one of them usually carries out only one or some of these specialized tasks: decorating, throwing on the wheel, preparing the clay, or packing and firing the kiln. They replace or help each other when necessary. Young boys and less talented workers perform simple tasks like clay trampling, carrying the pots or clay around, and cleaning up. Each workshop used to have a foreman dividing the jobs and supervising the work. Now that the workshop has become so small, this is not necessary anymore. Karam, who works at the wheel, organizes most of the work. Ossama and Ali pay daily visits to the workshop to supervise the production. All workers are paid per produced piece: about 7 Egyptian Pound (LE) for one hundred smaller shapes, up to 3 LE a piece for larger ones. The workers who throw pots on the wheel and decorate the pots earn most. The men who prepare clay or carry things around earn according to the number of pieces finished by the potter, since the potter depends on their speed of preparation. Their wages are often half of those of the more specialized craftsmen. The workshop owner or foreman used to count the output every day. Now Karam counts his own output. The worker who operates the kiln gets paid per kiln load. His salary depends on the size of the kiln. Specialized craftsmen such as the potter who throws on the wheel, the decorator or the kiln operator earn about 350 LE (or ca. 65 USD) per week, which is a reasonable working class income in Egypt.<sup>2</sup>

Workers are trained on the job. Most have started their career as small boys. The youngest children can start at about six years, and they come to the workshop after school to watch their fathers and to carry out small tasks. They start with learning how to carry the fired wares and to carry tools and other items needed by others. Slowly, they will participate more and more in the work. When they are interested and show some talent, they will be trained on the wheel or in decoration. Karam started when he was six years old. He made his first shapes on the wheel at twelve, and was able to do any job in the workshop at around twenty years of age. The children earn a small weekly wage irrespective of production numbers.

Workshop 1 uses three kinds of clay: Aswanli (from Aswan), ball clay (also from Aswan) and local clay from Cairo (called 'tafla'), mined in the area of the Suez road. Although Ali says a proper potter should control the whole process from raw materials to end product, they now procure the clays from a third party. They use between five and seven tons of clay a week. The kilns are fired on wood or diesel. The wood is

bought from carpenters, who sell scrap wood per bundle. The workshop uses ten bundles per week. The diesel is bought in barrels from the local gas station; they buy one truckload or 5000 liters per week. Other minor expenses are electricity and water.

Nowadays, most products made in workshop 1 are pots used for plants and garden decoration, such as lanterns and stands. Many are lavishly decorated with cut-out shapes, incised and applied decoration. Workshop 1 sells its products through various channels. The largest market is made up of flower shops in Egypt, selling dry, plastic or real flowers and bouquets. Another large part of the production is sold to touristic projects and holiday villages or hotels, for garden decoration or sometimes as 'ethnic' table ware. The pottery is not sold directly to the hotels, but to middlemen who come to Fustat and buy large quantities on order after comparing offers from different workshops. Workshop 1 also exports pottery abroad, for example to the UK, France, Germany and the Netherlands. Most of the export is done through middlemen. Wholesale markets and shops are another market. Minor amounts are sold to individuals passing by, and to the shops located on the street side along the workshops in Fustat. Workshop 1 regularly produces quantities of pots on order. Actually, the shapes and decoration of the pottery are completely dictated by the customer demand.

The production organization survey covered each of these topics (organizational structure, economics, family relations, labor organization, training, raw materials and costs, and markets) in more detail than can be presented here. Furthermore, information was collected on the output of production: shapes, standardization, quality, the use of potter's marks, etc. This information, as well as information on the other workshops and a comparison between current and past situations will be presented in the final publication.

### **Epilogue**

In this article, the authors have restricted themselves to a short preliminary description of the techniques of pottery production, the use of space and the production organization of the Fustat potters observed in 2008. It was the last opportunity to document the traditional potters' activities in Fustat before they will face major changes in the near future. In the final publication of the project we will present more detailed information and set our data in a historical-archaeological perspective.

### **Acknowledgements**

We cordially thank the potters of Fustat for their warm welcome and willingness to friendly answer our many questions and to tell us all about their work, even when the whole group was roaming the area with their cameras. We wish them all the best for the future when they will have left their old trusty workshops and have started to continue their craft in new circumstances. We also wish to thank mr. Ali Darwish, owner of one of the workshops and chairman of the Fustat Association for Pottery



Production for his helpful cooperation and providing us with useful information. We are very grateful for the funding by the Embassy of the Kingdom of the Netherlands in Egypt that enabled us to carry out the NVIC-Leiden University Fustat Potters Project.

### Notes

1. Rania Zin El Deen acted as Arab-Dutch interpreter.
2. According to the International Labor Organization, the official average wages in manufacturing in Egypt were 220 LE per week in 2007 ([http://www.ilo.org/global/What\\_we\\_do/Statistics/lang-en/index.htm](http://www.ilo.org/global/What_we_do/Statistics/lang-en/index.htm), last accessed on 25-1-2009).

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