HANDBOOK FOR DEIR EL-BALLAS POTTERY

TRAINING MANUAL 2018

Translated by Ashraf Senussi

I. An Introduction to Egyptian Pottery

Pottery appeared early in the Nile Valley at around 8000 years ago in the Khartoum Mesolithic. The pottery of the Predynastic Period in Upper Egypt is closely related to the ceramics of the Neolithic Sudan while in the north at early sites in the Fayuum and at Merimde it follows the traditions of the Levantine Neolithic cultures. Imported Palestinian wavy-handled jars gave W. M. F. Petrie the inspiration to develop seriation, the analysis of the stylistic development of pottery, which has become a principal tool of archaeologists ever since.

The earliest pottery in the Nile Valley was made from the mud of the river and is called Nile silt ware. It will fire a reddish color when heated due to iron compounds in the clay combining with oxygen. However, in areas where the surface was covered, the iron would reduce and become black. At first this was a random phenomenon, but potters soon were able to adjust the placement of the pots in the kiln to create all black, all red or blacktopped red pottery that was to become a standard class of vessels in the early Predynastic Period. All black and all red vessels could also be produced and during the Naqada II Period some of the red fired vessels were decorated with a white pigment in patterns that included naturalistic motifs and even scenes of ritual activity that show regional variation.

These kilns could only reach a temperature of about 500-800°C but the development of kilns made of specially made bricks in the later Predynastic could reach temperatures of 850-1000°C and allowed them to fire a harder, denser clay made from the whitish marl of the desert. Some of these pots were painted with drawings in red ochre that ranged from simple geometric forms to naturalistic depictions of many-oared boats, and these may have been ritual vessels intended for burial.

Vessels were modeled by hand working the lump of prepared clay with the hands or a tool such as a paddle of wood or a stone to shape the vessel. Coils of clay or slabs of it could also be formed into a vessel shape. Some types of vessels were molded by pressing clay into a hollow mold or by pressing it over a form, which was used to create bread molds employed to bake specially formed loaves. While Egyptian pottery was made by hand in the Predynastic Period, soon after unification parts of vessels, such as rims began to be made on a turntable or slow wheel and pressed onto handmade bodies with the fingers. By the old Kingdom, most fine wares were being produced on the wheel but rough, utilitarian wares such as water jars and bread molds were still handmade.

The slow wheel or turning wheel, was a rotating stand that gave access to all sides of the vessel placed on it. It was turned by hand and probably could not achieve sufficient speed to throw a vessel. The fast wheel or kick wheel, that the potter kicked, does not come into use in Egypt until the Late Period. The rate of speed it achieved allowed the potter to build up a vessel's walls purely by hand, which made for a more regular shape. Throwing was the predominant method used in vessel formation in ancient Egypt, although several techniques were often used on a single vessel.

How the different forms of finished pottery were used is often very difficult to determine. While some vessels, such as the *hes* vase or *nw* pot have specific names and functions, most pots do not. Some pottery is shown in tomb scenes but often in different uses- Old Kingdom carinated bowls are shown being used for dining by the nobility, but also to feed cattle! Sometimes, but not often, scientific analysis will revealed what residues were left inside vessels, but many again appear to have been used for various functions. Household or domestic pottery used in the preparation and consumption of food was

generally handmade of Nile silt or coarse-tempered marl clays with little or no decoration. Fine wares used for funerary, ritual, or trade, were usually wheel made of finer clays and sometimes were decorated.

Several types of decoration were used on Egyptian pottery. A beautiful surface finish could be achieved by burnishing a fine slip coating to produce lustrous red vessels that looked like copper or yellowish white to look like alabaster. Sometimes modeled elements, often depicting could be attached to the rim or shoulder of a vessel. Painting was rare on Egyptian pottery after the Predynastic Period but was re-introduced in the New Kingdom, when foreign vessels from Cyprus and Syria-Palestine were imitated. Later painting became even more elaborate with the development of "blue-painted" and polychrome decorations imitating floral garlands and even animals began to appear on palace wares. Another type of decorative luxury ware from the New Kingdom were mold made figure vessels produced in the form of women and sometimes of animals. These vessels were thought to have contained mothers' milk or other valuable medical potions or cosmetics.

After the New Kingdom pottery was less beautifully crafted and rarely painted. Sometimes the rilling marks left by the hands of potters using a faster wheel were left as a decorative motif, as well as to provide an easily gripped surface. Greco-Roman and Coptic Christian painted wares do eventually appear and finally glazed pottery becomes popular in the Islamic Period.

Egyptian pottery is an invaluable tool or archaeologists and since Petrie's day it has been tremendously important not only for dating but determining patterns of trade, functions of sites and ethnicity.

Further Reading

Bourriau, Janine, *Umm el-Ga'ab, Pottery from the Nile Valley before the Arab Conquest,* Cambridge, Cambridge University Press, 1981.

Hope, Colin, *Egyptian Pottery*, London: Shire Publications, 2001.

II. Why are ceramics important in archaeology?

Because pottery vessels can be broken easily and had little value the sherds they broke into tended to remain in place and usually soon after the vessel was made. Moreover, they were used by many different types of people and for different purposes, so that can tell us much about populations and activities from daily residential use to more specialized use, such as mortuary purposes or in offering rituals.

.

III. What is ceramic?

The term "ceramics" stems from the Greek word *keramos* meaning "potter's clay." The two most basic components of ceramics are clay and water, the latter which gives the clay its characteristic plasticity. Inclusions in the clay—natural or intentionally added (called "temper" by archaeologists)— modify the clay's texture and transform its properties such as stickiness, porosity, shrinkage, drying time, and reaction when fired. Temper may be any number of raw materials including sand, plant fiber, volcanic ash, crushed shell, crushed pottery, or rock. The clay and added materials is referred to as paste.

The terms "ceramics" and "pottery" are often used interchangeably but they can have different meanings. Ceramic refers generally to high-fired, vitrified, often

glazed objects, such as faience and frit as well as pottery vessels. Pottery is restricted to clay vessels.

Pottery can be made in a number of different ways, by hand, thrown on a wheel or cast in a mold. The potter's wheel was not used in Pre-Dynastic times but first appears in Egypt in the Old Kingdom and in Nubia not until much later. The earliest pots were made out slabs of wet clay and shaped by hand. Once the wet clay was formed the pottery vessel was then dried and finished. The dry pots were then rubbed with a hard tool such as a pebble or sherd to even out irregularities and to make a smooth surface. The surface could also be polished or burnished by hard, repeated rubbing to give it a uniform, highly glossy surface. Sometimes irregular lines from the burnishing tool were left on the surface in a technique called pattern burnish.

The surface of the pot could be further decorated with incisions, rope impressions or appliqués. Different color clay can be added to surface by using a slip of fine particle clay mixed with water. Glazes are not used on Egyptian pottery until the Roman Period. Painting on Egyptian pottery is rare after the Predynastic Period, but in the late Eighteenth Dynasty pottery, particularly in royal palaces like Malqata and Tell el-Amarna were decorated with elaborate patterns in blue pigment and other colors.

The earliest pottery in Egypt was produced in open firings (simple or "bonfire" kilns) or pit kilns, whose temperatures could reach about 900 and 1100 degrees Centigrade. Pottery in pharaonic Egypt was largely made of two types of clay, Nile alluvium and desert marl. Nile alluvium consisting of silt washed down with the flooding of the river is a dark, organic rich clay with fine sandy particles. Marl clay is derived from eroded limestone and was mined out in the desert and still is today particular at Ballas in the Qena governorate. The clay is often mixed with other material such as straw or pebbles to make it more workable and to prevent

it from breaking in firing. These additives are called temper. Together these mixtures for different fabrics used by the potters and they have been subdivided by Janine Bourriau and Dorothea Arnold into what they call "The Vienna System" of pottery classification. The main divisions are:

Egyptian Pottery Fabrics: The Vienna System

Nile Clay Fabrics:

Nile A – Large amounts of fine to coarse sand but no straw

Nile B- Fine to coarse sand and fine to medium straw

Nile C- Fine to coarse sand and large amounts of large straw

----------rare variant types----------

Nile D- Bits of limestone included

Nile E – Corse rounded grains of sand (Delta clay)

Marl Clay Fabrics:

Nile A1 –Fine clay tempered with medium to coarse Particles of crushed limestone

Marl A2 - Fine clay tempered with fine Particles of crushed limestone

Marl A3 - Fine clay homogenous pattern

Marl A4 - Coarse clay with coarse sand inclusions

Marl B- Dense, homogenous clay with lots of sand and gritty surface

Marl C- Large particles of decomposed limestone

Marl D- Fine to medium particles of limestone with micaceous particles and black grit.

Marl E- Dense, homogenous clay with lots of straw

Further Reading

Arnold, Dorothea, and Bourriau, Janine, eds. *An Introduction to Ancient Egyptian Pottery.* German Archaeological Institute, Cairo, Mainz: Philip von Zabern. 1993.

IV. What can pottery tell us?

One of the most important purposes of using ceramics in archaeology is to understand the chronology for a particular archaeological site. Pottery sherds excavated from particular levels at a site can give us a relative chronology of the site by comparing them to ceramics that have already been dated.

Pottery dating was first developed in Egypt by Sir William Matthew Flinders Petrie who called it "sequence dating." Archaeologists now use it the world over and call it "seriation" which means to order things in a series. Styles change over time for many reasons, technological change, foreign influence, economic conditions, etc. With pottery, technique or decoration will suggest a specific type which can be plotted on a timeline. The frequency that particular types of pots are found usually grow and then peter out over time. If plotted on a graph these appear like lens-shaped and are called "battleship curves." The peak of a particular vessel's popularity would corresponding to the widest point on the curve and its introduction to the lowest point and its extinction to the topmost.

The main classification systems used to study pottery is the type-variety system. A "type" is a group of pottery that shares a set of attributes, and within a type, different "varieties" point to smaller distinctions.

IV. Why are ceramics illustrated?

Drawings are particularly important for the study of archaeological ceramics. These drawings are technical illustrations, not realistic or artistic renderings. There are basic conventions which are used to make these drawings.

The equipment necessary for drawing pottery is simple: a ruler for drawing straight lines; triangle rulers for dividing the drawing in half, sharp pencils and eraser. After the pencil drawing is made they are often copied with inking pens but more recently sometimes the inking is done using computer software.

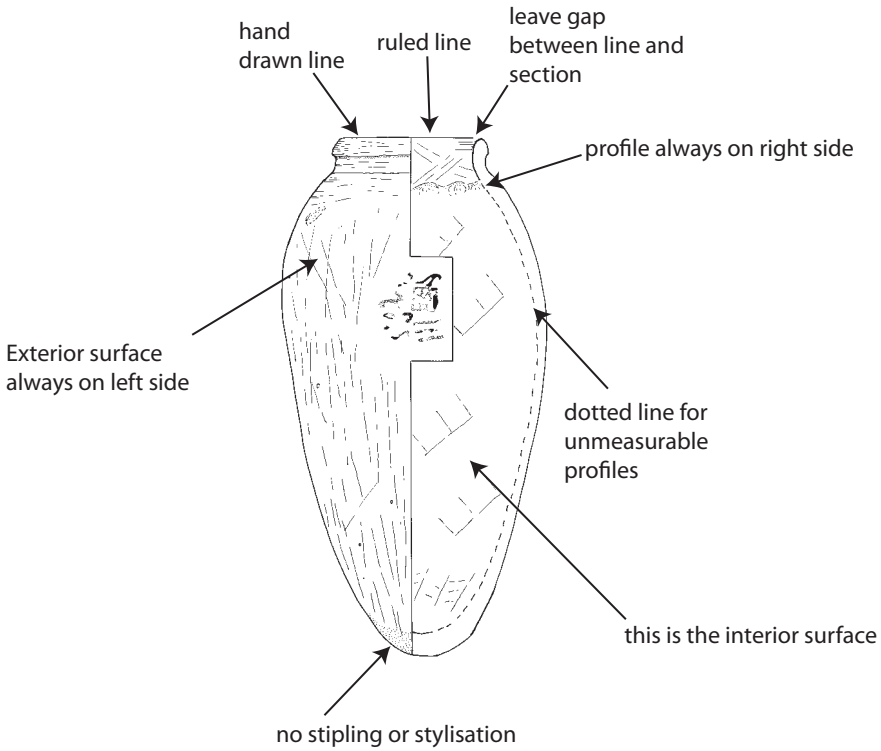
Before starting the drawing, you should add the scale your graph paper, depending on the size of the object drawn it could be the same size = 1:1, half size = 1:2, quarter size = 1:4, or less. In addition to noting the ratio, a scale bar should always be put on the drawing. It is standard practice to use the metric system (cm.).

The paper on which you do the drawing should also have the basic information on the object including the site, locus and level, the date of the drawing, the illustrator's name, and the project name.

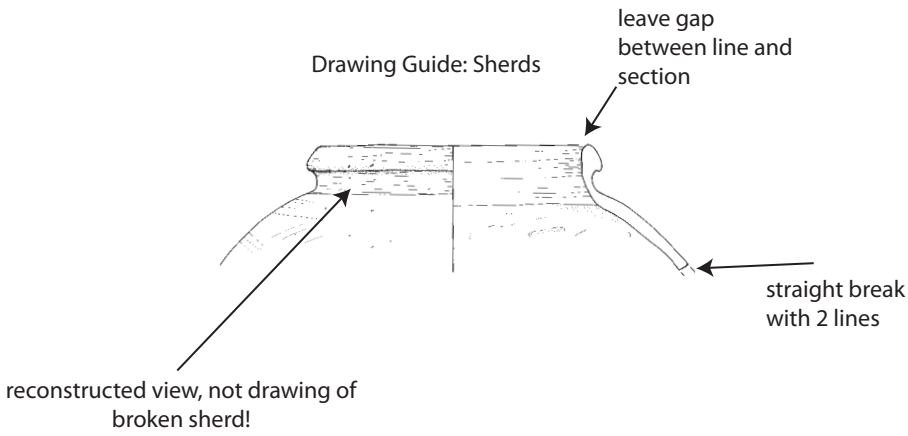
The convention in drawing pottery is the way it would have appeared if whole with the vessel rim or mouth at the top and the base of the pot at the bottom. Understanding the shape of the original vessel form may aid in interpreting the sherd's approximate placement on the pot. Appendages such as handles and spouts that are not attached to rims or bases should likewise be oriented, when possible, according to the deduced original vessel form.

The illustration of a whole vessel or vessel fragment should depict the vessel shape and the thickness of the walls of the pot.

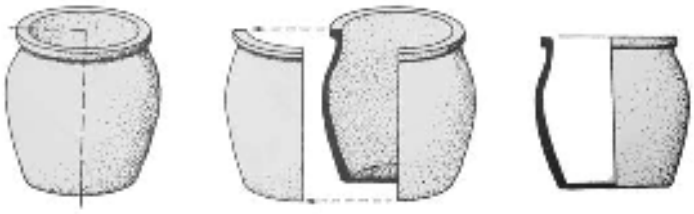
Drawing Guide: Complete Vessels



Drawing Guide: Sherds



The drawing is divided down the middle to show the and interior and exterior surface treatments. The left half of the drawing depicts the section, which is a cutaway view, as you are looking through half of the pot to see the inside. The right half of the drawing shows the outside of the vessel.



(from Banning 2000:Fig.16.8)

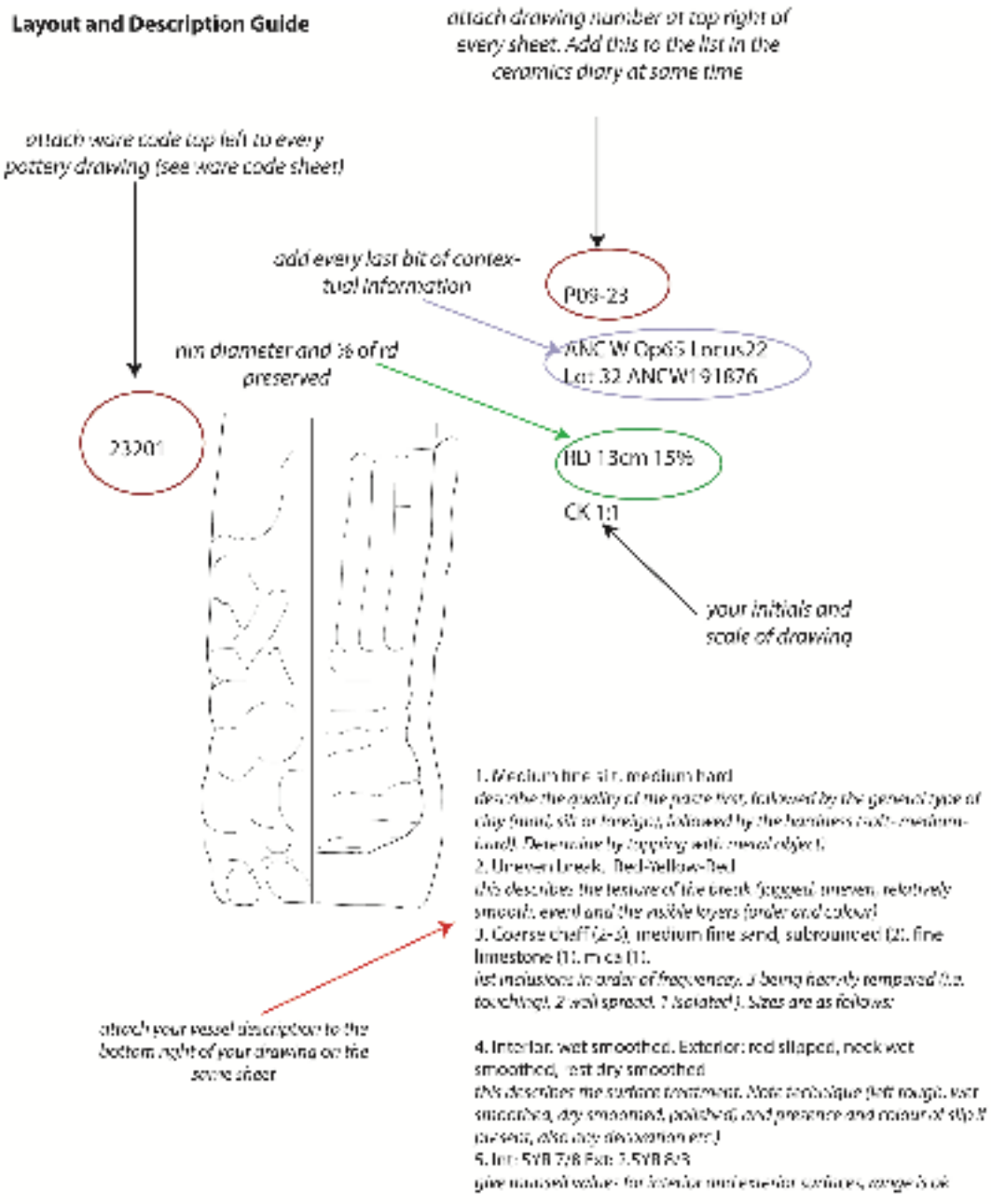
Most pottery found in archaeological sites is broken so drawings are made from the most characteristic parts of the vessel called diagnostics, usually the rim or the base. The first step is to take measurements. Assuming that the original vessel was circular in plan, the rim and base diameter can be established by using a diameter sheet. To use the diameter sheet, place the rim of the sherd on the paper and move it back and forth until no light shines under it and place it on the sheet so that the curve of the sherd matches a curve on the sheet. The curve will have a number on it which will give you the diameter of the piece.

To begin the drawing use a ruler and draw a horizontal line the length of the rim diameter determined from the sheet. At the halfway point, draw a perpendicular line downward from the first line. If you have a large enough sherd that includes both rim and base (or a whole vessel), then you can measure the height; the vertical line will then correspond to the vessel height. Draw another horizontal line at the bottom of the graph paper where the vertical line ends, which becomes the baseline. The base diameter can also be established using the diameter sheet.

The vertical line marks the center line that divides the section drawing on the left hand side and the exterior view on the right hand side. To draw the profile and section of the sherd, there are two simple ways. If the broken edge of the sherd happens to be broken vertically, then you can trace the profile, holding the sherd in its proper orientation. The other way is to use a profile gauge. The gauge is pushed against the surface of the sherd so that it takes the shape of the sherd. It can then be used to trace onto the paper.

Any sharp edges or turns in the sherd surface, such as ridges, flanges, and folded over lips, should be shown as a horizontal line. Finally, add any surface marks or decorations on both interior and exterior sides of the sherd and add provenance information.

Layout and Description Guide



V. Deir El-Ballas Pottery

While most of the ceramic material seen at Deir el- Ballas dates to the late Second Intermediate Period into the Eighteenth Dynasty of the New Kingdom, examples some other periods, such as the Late Period and Romano-Coptic Period have been found. Below is a corpus of the major types and fabrics dating to the Second Intermediate Period into the Eighteenth Dynasty found at Deir el-Ballas.

Fig. 4-1 Handmade wares:

1. Coarse, straw-tempered Nile silt fabric; handmade, comb impressed, burnished ware
2. Coarse, straw-tempered Nile silt fabric; handmade, scratched design
3. Coarse, straw-tempered Nile silt fabric; handmade, scratched design
4. Straw-tempered Nile silt fabric; handmade, mat impressed ware
5. Straw-tempered Nile silt fabric; handmade, mat impressed ware

6.- 8. Fine, Nile silt, dung tempered, handmade, burnished, Kerma beakers

10.-13. Coarse, straw-tempered Nile silt fabric = (Nile C)

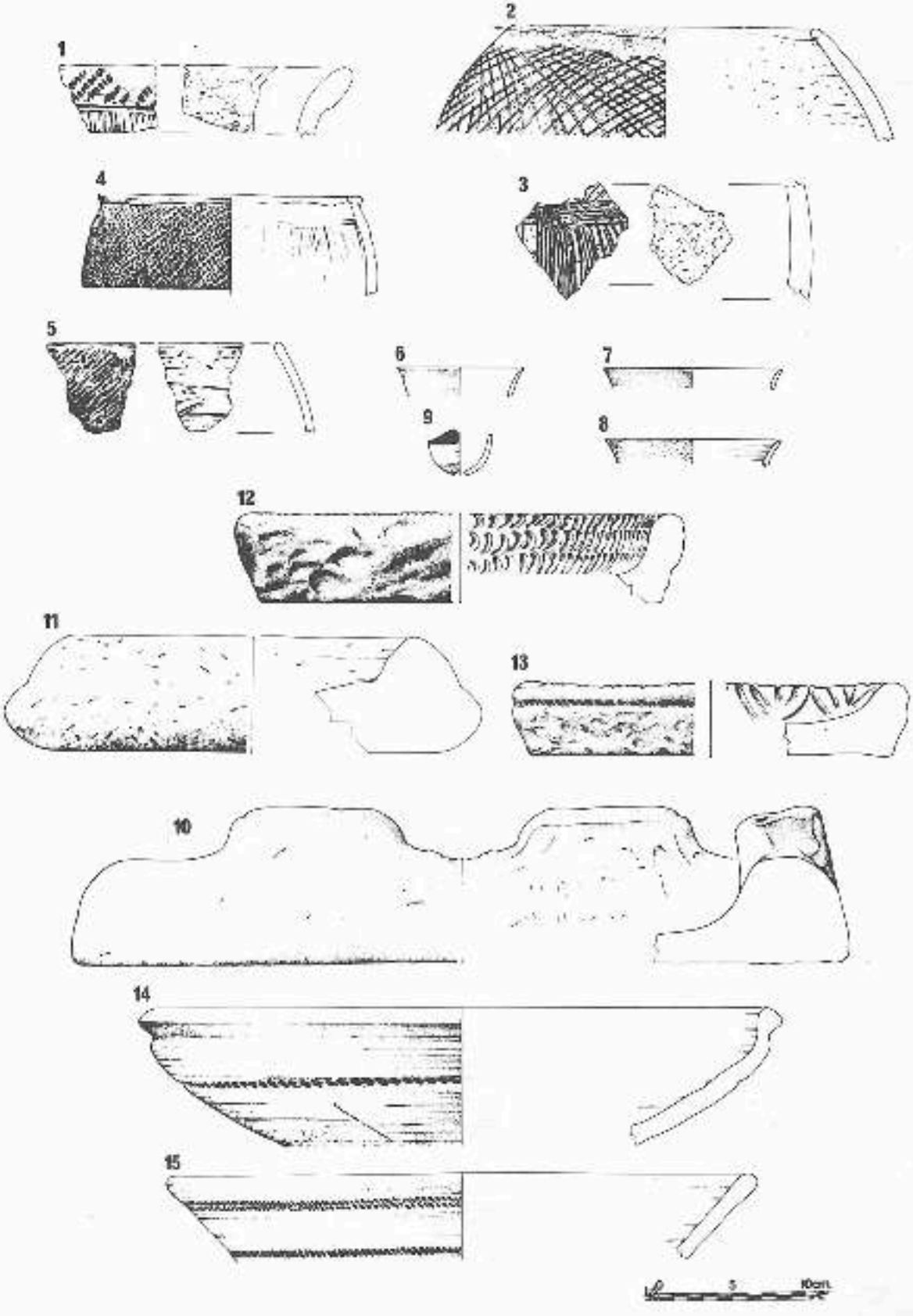


Fig. 4.1

Fig. 4 – 2 Nile silt wheel made wares:

1. Coarse, straw-tempered Nile silt fabric (Nile C)
2. Coarse, straw-tempered Nile silt fabric (Nile C), scraped base
3. Coarse, straw-tempered Nile silt fabric (Nile C), finger punched through base
4. Coarse, straw-tempered Nile silt fabric (Nile C), incised scrabble decoration
5. Coarse, straw-tempered Nile silt fabric (Nile C), incised scrabble decoration
6. Coarse, straw-tempered Nile silt fabric (Nile C), burnished red slip inside and out
7. Coarse, straw-tempered Nile silt fabric (Nile C), burnished red slip, scrabble decoration inside and rope impressions outside
8. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
9. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
10. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
11. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
12. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
13. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
14. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
15. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip, burnished interior
16. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip, burnished interior
17. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated

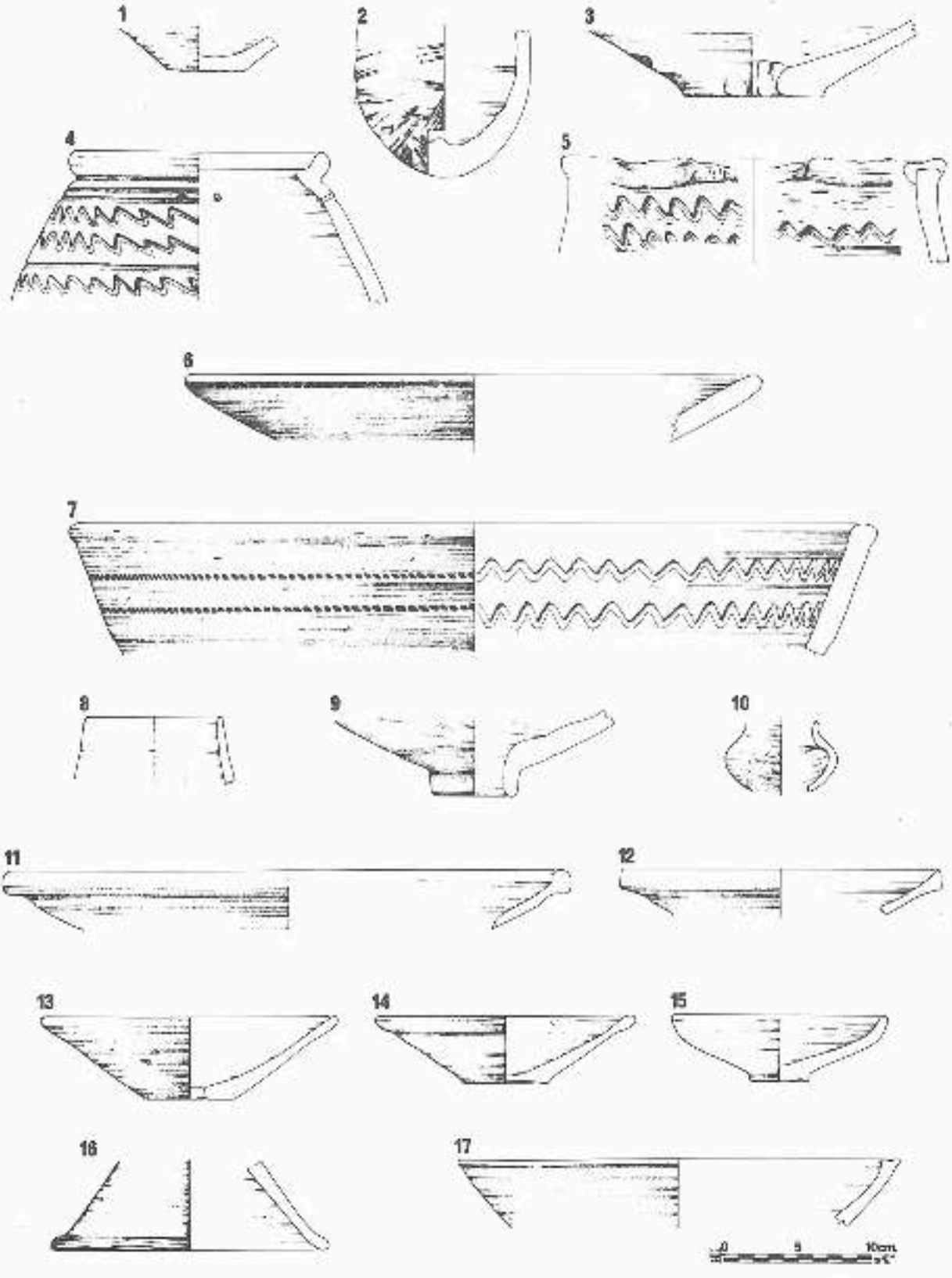


Fig. 4.2

Fig. 4 -3 Nile silt and marl clay wheel made wares:

1. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
2. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
3. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
4. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip and burnished exterior
5. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip and burnished exterior
6. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip and burnished exterior
7. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
8. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
9. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip and burnished interior
10. Medium, straw-tempered Nile silt fabric (Nile B 2) red slip
11. Medium, straw-tempered Nile silt fabric (Nile B 2) uncoated
12. Nile silt fabric with limestone (Nile D) uncoated
13. Nile silt fabric with limestone (Nile D) uncoated
14. Fine marl fabric (Marl A 2)
15. Fine marl fabric (Marl A 2)
16. Fine marl fabric (Marl A 2)
17. Fine marl fabric (Marl A 3) wet smoothed
18. Fine marl fabric (Marl A 3) wet smoothed
19. Fine marl fabric (Marl A 3) wet smoothed
20. Fine marl fabric (Marl A 3)
21. – 27. Sandy marl fabric (Marl B)

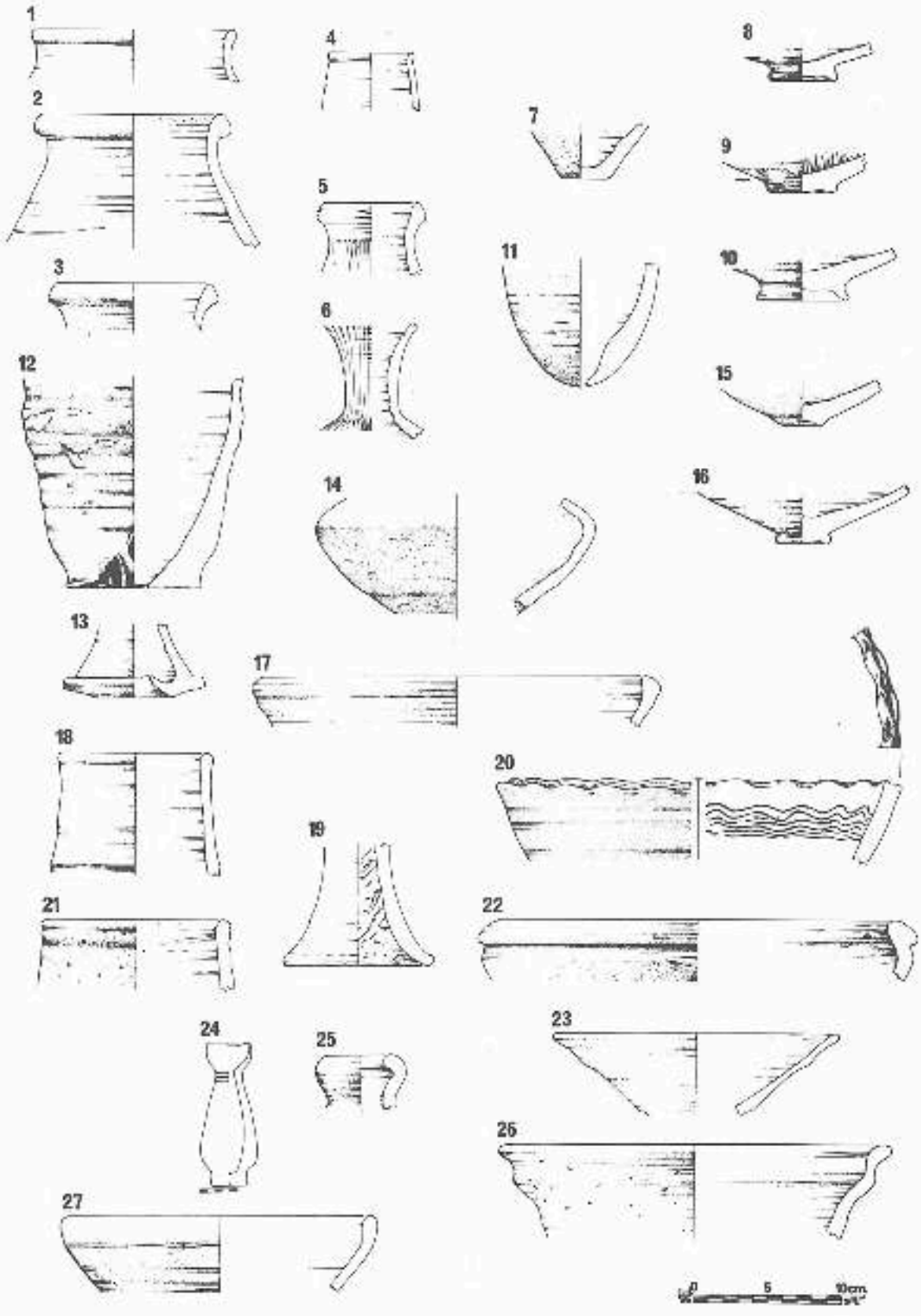

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
0
5
10cm

Fig. 4.3

Fig. 4 – 4 Marl B wheel made wares:

1.-14. Sandy marl fabric (Marl B), uncoated

15. -18. Sandy marl fabric (Marl B) incised and scrabble decorated wares

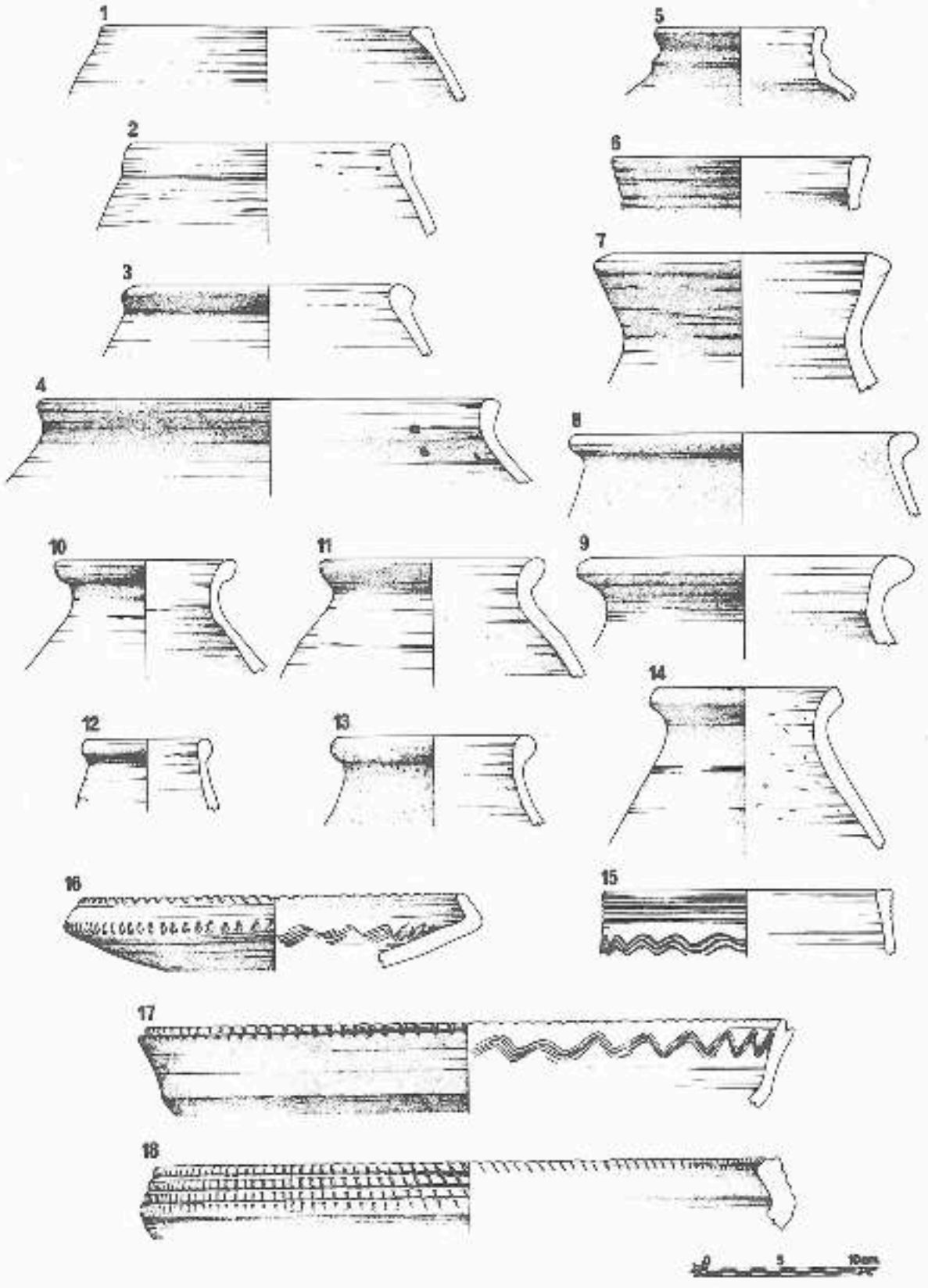


Fig. 4.4

Fig. 4 – 5 Marl clay wheel made wares:

1. Sandy marl fabric (Marl B), relief decorated ware
2. Sandy marl fabric (Marl B), relief decorated ware
3. Sandy marl fabric (Marl B), relief and impressed decorated ware
4. Sandy marl fabric (Marl B)
5. Sandy marl fabric (Marl B)
6. Sandy marl fabric (Marl B)
7. Marl with limestone inclusions (Marl D) incised decoration
8. - 14. Marl with limestone inclusions (Marl D), scraped surface

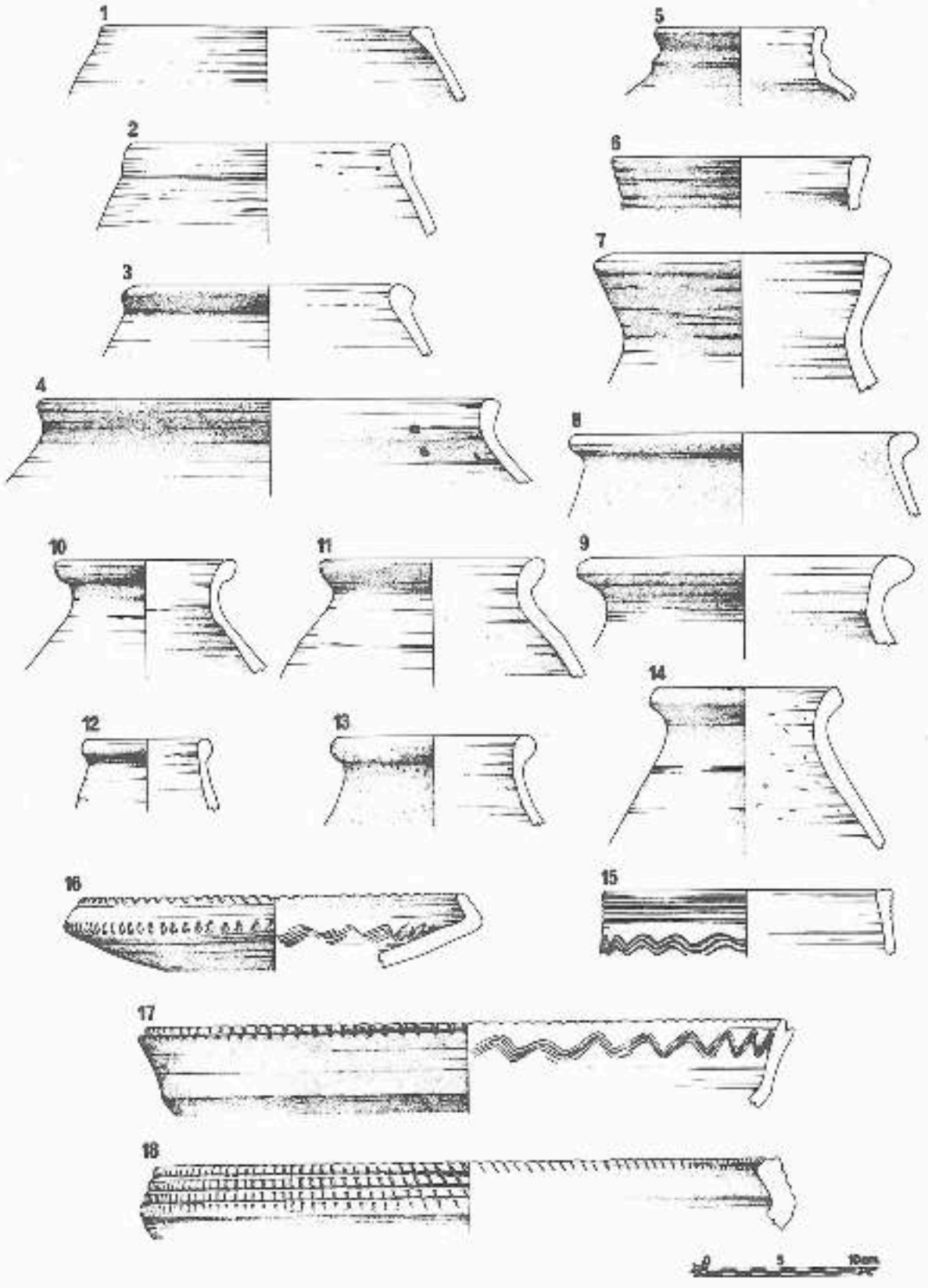


Fig. 4.4

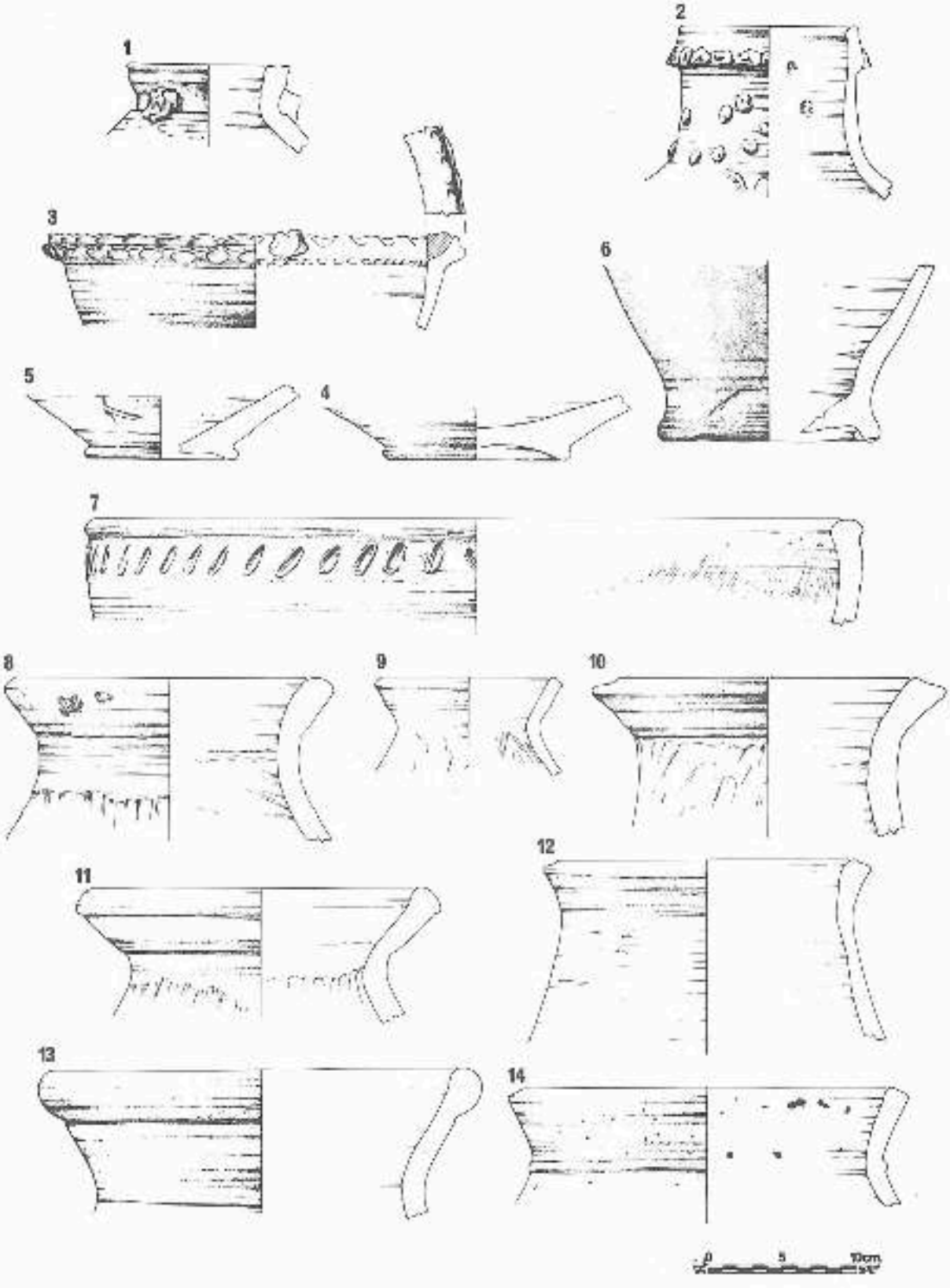


Fig. 4.5

Fig. 4-6 Marl D and E wheel made wares:

1. Marl with limestone inclusions (Marl D) uncoated
2. Marl with limestone inclusions (Marl D) uncoated with scraped surface
3. Marl with limestone inclusions (Marl D) uncoated

4.-7. Marl with limestone inclusions (Marl D) uncoated

8.-11. Marl with straw temper (Marl E)

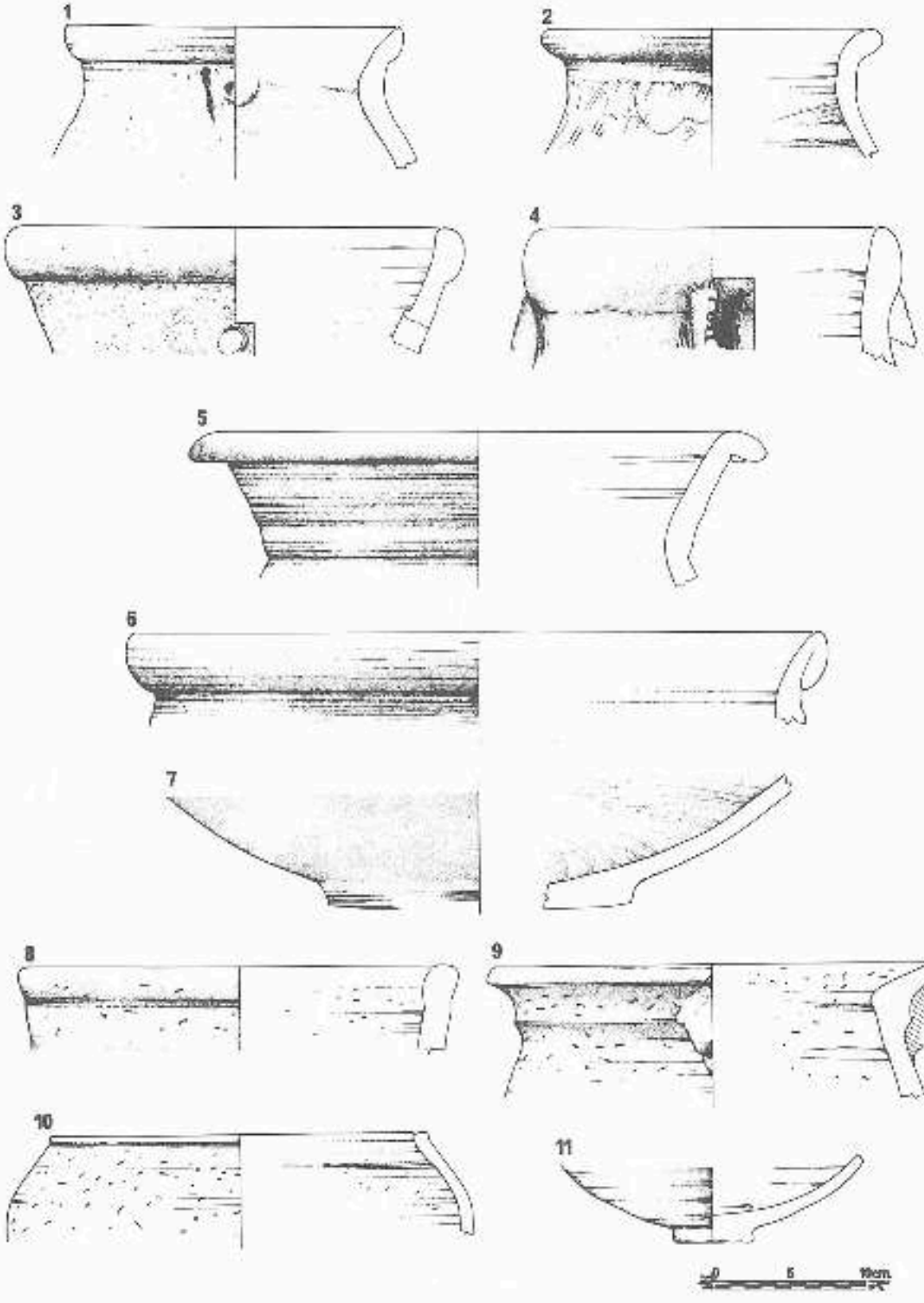


Fig. 4.6