



## Relief Ware. Of Moulds and Stamps

Martina Müller-Wiener

### Introduction

Unglazed moulded earthenware vessels with relief decoration enjoyed a wide distribution across much of the Islamic world. In the Syro-Mesopotamian region, Iran and Central Asia different varieties of relief-decorated pottery were produced in large numbers at least from the 9<sup>th</sup> to 14<sup>th</sup> centuries. The earliest securely dateable examples come from sites in Syria, Palestine and Mesopotamia. Their formal and ornamental repertoire is rather restricted and comprises bowls and jugs with simple geometric decoration. Occasionally they show freely developed vine scrolls. During the 12<sup>th</sup> to 13<sup>th</sup> centuries the moulded wares from the Syro-Mesopotamian region were to see "an explosion of creativity".<sup>1</sup> Potters elaborated on the technical and formal qualities of the technique and developed a wide range of decorative motifs, including vegetal, geometrical, calligraphic and figural forms. In contrast, the formal repertoire remained restricted to jugs and pilgrim flasks.

The number of publications describing and analyzing moulded wares from Syro-Mesopotamian sites is comparatively large. Several studies have been devoted to their typology and chronology since F. Sarre first identified the group in 1925.<sup>2</sup> The most recent, detailed study was conducted by S. Mulder, based on a corpus of moulded ceramics recovered during several excavation campaigns in Balis, Northern Syria.<sup>3</sup> Her analysis demonstrates that style and formal characteristics of moulded jugs from 9<sup>th</sup> to 10<sup>th</sup> century contexts clearly differ from those of 12<sup>th</sup> to 13<sup>th</sup> contexts. A more detailed chronology of the respective periods based on shape and/or decoration is not attempted.

In Iran, Central Asia and the region of today's Afghanistan moulded pottery is found

in large numbers on various sites. Notable groups of finds are known from Nishapur<sup>4</sup>, Samargand<sup>5</sup>, Susa<sup>6</sup>, Istakhr<sup>7</sup>, Lashkari-Bazar<sup>8</sup>, Balkh<sup>9</sup>, Merv<sup>10</sup> and Jam.<sup>11</sup> The finds from Kandahar consist mainly of later pottery; unglazed moulded pottery is not reported.<sup>12</sup> Local production is noted at Istakhr, Nishapur and Lashkari-Bazar. Further, often unprovenanced material is kept in private collections and has been published recently in the context of catalogue-manuals on Islamic pottery.<sup>13</sup> The investigation of ceramics from Afghan sites, however, is hampered by a lack of stratigraphically based data sequences. The documentation and publication of the material from Nishapur, Lashkari-Bazar, Susa and Balkh dates back to the 1950s or 1970s, respectively. As to methodology and understanding they reflect the state of knowledge of their time. The most recent monograph by R. Rante and A. Collinet on the pottery from Nishapur contains almost no examples of moulded pottery.<sup>14</sup> As regards the Islamic pottery from Merv, we have to rely on the preliminary reports, since the final publication of the entire corpus of Islamic ceramics remains yet to be published.<sup>15</sup> Under these premises the latest and most comprehensive archaeological publication on Islamic ceramics from Afghanistan is the article by A. Gascoigne on the pottery from Jam, which deals mainly with unstratified surface finds.<sup>16</sup>

In terms of form the moulded wares from Iranian and Afghan sites show the same types as the Syro-Mesopotamian group. The dominant shape is a small jug provided with one handle.<sup>17</sup> Next to this we find pilgrim flasks, bowls, dishes or flasks.<sup>18</sup> The individual shape of the jugs as well as the style

1 Mulder 2001, 72.

2 Sarre 1925.

3 Mulder (2001) summarises the current state of research, describes manufacturing techniques and analyzes forms, ornamentation and chronology.

4 Wilkinson 1973.

5 Paris 1992.

6 Rosen-Ayalon 1974. - Koechlin 1928.

7 Nováček 2009.

8 Gardin 1963.

9 Gardin 1957a.

10 Herrmann et al. 1997, 27. - Herrmann et al. 2001, 17 Pls. 4; 19.

11 Gascoigne 2010.

12 McNicholl/Ball 1996, 152. - Crowe 1996, 313-364.

13 Watson 2004. - Fehérvári 2000.

14 Rante/Collinet 2013, 124 Figs. 81,7; 107: the only stratified sherd with moulded decoration is dated between the end of the 4<sup>th</sup> century AD and 785 AD (Phase II).

15 The Sasanian ceramics have been published in detail by Puschnigg (2006).

16 Gascoigne 2010, with a contribution by R. Bridgeman.

17 The terminology used to describe this type of vessel varies. They are termed 'jug' as well as 'pitcher'. In the present context the term 'jug' is used throughout.

18 Referring on the publication of Wilkinson, Mulder (2001, 19; 64) states that at Nishapur and other Iranian sites a profusion of different forms can be found. Actually, Wilkinson explains that the use of moulds in the making of unglazed vessels became common in the late 11<sup>th</sup> or 12<sup>th</sup> century and that most of the pieces are jugs or jug-like vessels. His catalogue comprises some dish fragments and one footed bowl (Wilkinson 1973, 291; 328). The dish fragments closely resemble small glazed dishes with straight vertical walls that are commonly ascribed to 9<sup>th</sup> century Mesopotamia.

and technique of their decoration vary substantially. This heterogeneity is difficult to interpret due to the lack of sufficient, stratigraphically based data sequences. By now it is far from clear whether the variations in shape, style and technique reflect chronology or provenance. J.-C. Gardin, whose study of the material from Lashkari-Bazar is still the most comprehensive presentation of moulded wares, is mainly interested in the origins of their decorative language. His typology of motifs is clearly devised as a means to reconstruct relations to foreign or earlier ornamental traditions. An internal chronology of the material is not attempted. The form-types of vessels are discussed only very shortly and as regards chronology, the entire material is dated rather generally to the 11<sup>th</sup> / 12<sup>th</sup> centuries. A comparably broad chronology is also applied to the material from Samarqand, Merv, Nishapur, Balkh and Bust. At these sites moulded wares supposedly made their first appearance in contexts dated to the early 11<sup>th</sup> century and represent one of the most current types of unglazed common ware throughout the 12<sup>th</sup> century.<sup>19</sup> Variations of form-types of vessels and their possible chronological relevance are hardly treated. Only Ch. Wilkinson discusses the general development of the shape of Nishapur jugs. In this regard he observes that the shape of the vessels changed when mould-made jugs became fashionable in the 12<sup>th</sup> century. Apart from that it appears that the Nishapur moulded jugs represent a fairly homogeneous group, which shows no obvious change in shape during the 11<sup>th</sup> to 12<sup>th</sup> centuries.<sup>20</sup>

By now, then, the issue of the relationship between vessel form and chronology remains an open question. Little more can be said about the matter of provenance. It is generally agreed upon that the stylistic and technical diversity of the moulded wares reflects the regional distribution of workshops. Based on the material from Nishapur, Wilkinson stated that moulded wares were manufactured locally and that the products of the Nishapur workshops are readily distinguishable from those of other centres.<sup>21</sup> Mulder likewise argues that there were distinct regional styles and that moulded wares were a local, semi-luxury product, manufactured in many different centres.<sup>22</sup> Gascoigne also takes this opinion. She states that in Jam moulded wares were found with a range of fabrics, which indicates that many centres spread over a wide area produced such wares.<sup>23</sup> K. Nováček analysed the decorative programme of an assemblage from Istakhr in statistical comparison. He comes to the conclusion that the pattern of the data in the scatterplot does not indicate chronological heterogeneity, rather reflecting the regional distribution of workshops.<sup>24</sup>

## Objectives and Methodology

In 2010, the collection of the Herat National Museum contained a group of 82 almost complete, unglazed earthenware vessels and several fragments

<sup>19</sup> Gardin 1963, 12; 53. Mulder states that according to Gardin the first appearance of moulded ware seems to be in the 9<sup>th</sup> century. Actually, Gardin (1963, 53) writes that they make their first appearance around 1000 CE.

<sup>20</sup> Wilkinson 1973, 292–293.

<sup>21</sup> Wilkinson 1973, 292.

<sup>22</sup> Mulder 2001, 41.

<sup>23</sup> Gascoigne 2010, 26.

<sup>24</sup> Nováček 2009, 124–126.

with moulded decoration. The majority of vessels are different types of jugs. Other form types such as spouted jugs, ewers and pilgrim flasks are represented by just one or two examples. As regards the style and technique of their decoration, the objects display a broad spectrum of variations.

The provenance of the vessels is not known. This obvious drawback, however, is compensated by the condition of the vessels. Most of the pieces are almost undamaged, which enables us to develop a detailed typology. The only part that is often missing is the handle and, to some extent, part of the neck. The loss of the handles, however, is negligible. Their shapes can be reconstructed by the marks on the neck and the body of the vessel that indicate the point of their application. Furthermore, the good condition of the vessels allows for a thorough analysis of their decoration, which entails both, a description of the overall layout and a classification of motifs.

Under these premises it was decided to proceed in five steps: First, aspects of manufacture were analyzed. This refers to the identification of wares, to the technique used to form the vessel and, particularly, to the various techniques of mould manufacture. Second, the vessel-forms were analyzed in order to establish a detailed typology. This was done by inspecting the respective objects and by comparison of detailed measured drawings. Third, the layout of the decoration on the respective parts of the vessel bodies was classified according to types or styles. Then, a list of motifs was defined. Afterwards the results of the successive stages of analysis were correlated in order to identify groups of objects that belong to a common tradition. Finally these groups were compared to published material from sites in Iran and Afghanistan.

## Aspects of Manufacture

For obvious reasons it was not possible to use petrographic analysis or to investigate the vessels by application of a scanning electron microscope. Therefore the ceramic bodies were inspected with both, the naked eye and using a 10-x lens. This allowed the distinction of three different groups of clay-based fabrics. The majority of



Fig. 1 The upper part of the vessels was made from the same mould (HNM 03.19.86c and HNM 03.19.86e, cat. nos. R25 and R27)

moulded jugs are made from a moderately fine, buff-firing fabric with no visible inclusions. Another group is characterised by a fairly hard sherd made of moderately fine, red-firing clay with clearly visible white and black inclusions. Vessels of both groups are usually coated with a buff coloured slip. Besides, a small number of objects were made from a very dense, hard sherd in differing shades of grey or brownish-red. They were not slipped. Among these is a single jug (HNM 03.18.86a, cat. no. R13), which stands out both in shape and ware. It shows a very hard, compact, red burning sherd with no slip. The same applies to jug HNM 04.61.86b (Fig. 39a-c), which is also exceptional in terms of fabric and decoration. It is made from very fine, compact, red-burning clay. Another singular piece is jug HNM 03.38.86a (Fig. 27a-b), which shows a very hard, fine brownish-red sherd.

Notwithstanding the different types of fabric, the manufacture process of the vessels was always the same. The body was assembled from two halves that were made on separate moulds. The decoration of the jugs was likewise moulded and developed simultaneously with the

shaping of the vessel. Damaged vessels clearly show traces of fingerprints on the inside, which resulted from pushing the wet clay into the moulds. When the wet clay began to dry it shrank slightly and could easily be detached from the mould. Subsequently the two halves were joined and the seam between the two halves was strengthened by the application of a thin strip of clay, which was rubbed smooth. The resulting joint remains clearly visible and frequently details of the decoration were obscured in the process of joining the two halves. Neck, spout and handle were added separately. The base was either added separately or the lower mould had the base incorporated.<sup>25</sup> Perforations for the strainer were made after the neck was added.

Most of the moulded jugs in the collection are made using moulds that share neither details nor general layout, only size. There are, however, exceptions to this general rule. Several vessels were partly or completely made from the same mould. Thus, the upper halves of jugs HNM 03.19.86c and HNM 03.19.86e show the same details of composition and inaccuracies as for instance the change of direction in the placement of one of the heart-shaped motifs (Fig. 1). The comparison of both objects shows that the placement of the handle was determined without consideration of the irregularities of the pattern.

The moulds were created using three very different techniques: 1. stamping, 2. incising and 3. carving. Sometimes two of these techniques were used on one and the same mould. Moulds from Iranian and Afghan sites

<sup>25</sup> Two moulds with incorporated bases are depicted by Fehérvári (2000, 337; 339).

indicate that they were usually made from fired clay. O. Watson mentions that plaster moulds for tiles were found on the site of the Mongol Palace of Takht-i Sulaiman in north-western Iran, but are otherwise unrecorded.<sup>26</sup> The advantage of moulds made from plaster is that first they produce a very sharp relief. A major drawback is their short operating span. Each time the mould is used the plaster absorbs the superfluous water from the clay. In the long run, the result is a blurring of the contours on the surface of the mould. Consequently, the relief of vessels made from such a mould appears obscured.<sup>27</sup> Even if plaster moulds have not been discovered or recognised in archaeological records, some objects in the collection of the Herat National Museum indicate that perhaps plaster moulds were used next to fired clay moulds. This is suggested by some vessels with a blurred relief, which results from the use of a worn mould.<sup>28</sup>

### Stamping

The most common technique applied for the creation of moulds was that of die-cutting or stamping. Single stamps were reported from excavations at Nishapur and Samarqand<sup>29</sup>, two unprovenanced dies are depicted by G. Fehérvári.<sup>30</sup> Besides, two hoards of dies are kept in the collection of the Dar al-Athar al-Islamiyyah in Kuwait and were published in parts by Watson. Thanks to the generous permission of the Dar al-Athar al-Islamiyyah, the author had the opportunity to study this material during a visit in Kuwait. It consists of two groups of 88 and 28 specimens respectively, which were reportedly found in an earthenware jar near Herat and in a cave near Samangan in Afghanistan.<sup>31</sup>

The dies are made from fired clay. Their matrix is very fine and compact. Their shape varies according to the motif, ranging between 2 to 4.5 cm. Usually they are cone shaped; specimens with simple motifs such as rosettes or dotted circles can also be cylindrical. More often than not the cylindrical stamps have two stamps, one at each end. The design was carved with a knife; further details were scratched with a needle. In some cases, however, the dies were made from two parts. The actual stamp was taken from a master mould and then fixed onto a clay cone.<sup>32</sup>

### Incising

Another method of creating moulds is by incising the design with a sharp tool or a needle into the clay of the mould itself. This method was frequently applied in combination with stamped or carved decoration. Incised designs are usually simple and items manufactured with the help



Fig. 2 Upper part made from a mould created by carving (HNM 03.19.86b, cat. no. R24)

of those moulds were often used as the lower half of the vessel.

### Carving

By contrast, moulds created by carving the design into the wet clay of the mould usually show very sophisticated designs. Whereas incising creates linear designs, carving results in a very effective contrast between the motif itself and the void of the deeply carved background. Carved decorations usually show complex compositions that cover large areas of the surface. The art consists in the creation of a well-balanced arrangement of major and minor elements. Carving was usually applied to create bold inscriptions and figural decorations including different kinds of quadrupeds and birds. The decoration of arches and a stylised flower carved in deep relief of jug HNM 03.19.86b (Fig. 2) is rather unusual in this context. Carved moulds are only recorded from 12<sup>th</sup> to 13<sup>th</sup> century contexts and required highly accomplished artisans. Mulder suggests that this may be the reason why potters began to sign their work, and may also have led to the development of specialised workshops for the production of moulds.<sup>33</sup>

<sup>33</sup> Mulder 2001, 31.

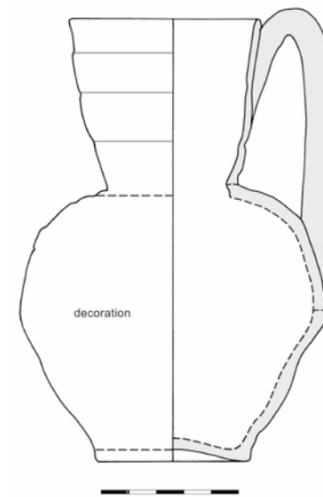


Fig. 3 Jug, form-type J2 (HNM 03.20.86d, cat. no. R35)

### Typology of Forms

The majority of vessels in the collection of the Herat National Museum are different varieties of jugs. Besides, the collection contains two pilgrim flasks, two spouted jugs and one ewer. Other shapes such as bottles, bowls, plates and dishes are not represented.

The jugs show a large variety in terms of size and form. Variations of form refer primarily to the basic shape of body and neck; bases and handles hardly differ. All jugs have medium high, flat bases and vertical handles with a circular cross-section attached to shoulder and neck. About fifty percent of the jugs were fitted with a strainer with circular or quadrangular perforations.

In the following typology, form-types are classified in a hierarchical structure. The first division in the hierarchy is defined by the basic form of the vessel. In the present context this includes jugs (J), ewers (E), and pilgrim-flasks (P). The basic forms are in turn divided according to the shape of the vessel's body. This may be spherical, pear-shaped or biconical. The final division refers to the form of the neck. Necks show a large variety of forms from plain cylindrical or conical shapes to complex forms with a narrow lower part opening up to a bulbous upper part. Some form types are represented by two different sizes.

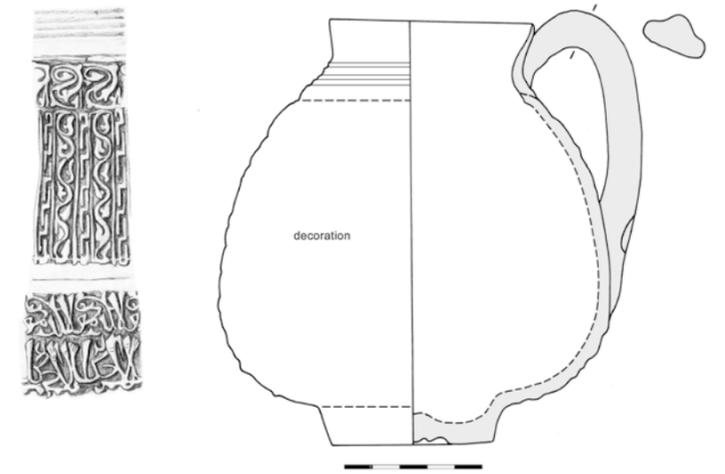


Fig. 4a-b Jug, form-type J1a (HNM 89.120, cat. no. R71)

According to this taxonomic structure, the jugs have been divided into five groups. Type J1 comprises jugs with pear-shaped bodies and medium high, slightly concave, flat bases. The diameter of the body ranges between 10 to 15 cm, the greatest width of the vessel is only a quarter of the height from the base. The vertical handle is attached to the rim and middle of the body. Depending on the shape of the neck, two subcategories have been defined. Whereas Type J1a has a short, slightly flaring neck and a wide mouth (Fig. 4a-b), Type J1b shows a short, vertical neck and a wide mouth. Comparison with published examples of moulded jugs revealed no matching type. The closest parallels for this shape can be found among Iranian glazed fritware vessels dated to the 12<sup>th</sup> to 13<sup>th</sup> centuries.<sup>34</sup>

Type J2 comprises jugs with pear-shaped bodies and slightly concave, flat bases (Fig. 3). The diameter of the body ranges from about 10 to 13 cm, the greatest width of the vessel is above midpoint. They show a tall, conical neck and a wide mouth. The vertical handle is attached to the rim and the middle of body. No subcategories have been defined. A comparable jug belongs to a hoard found some 40 km west of Balkh and is dated tentatively to the 9<sup>th</sup> to 11<sup>th</sup> centuries.<sup>35</sup>

Type J3 comprises jugs with spherical bodies and medium high, slightly concave, flat bases. The diameter of the body ranges from about 11 to 18 cm, the greatest width of the vessel is at midpoint. The vertical handle is attached to the rim and the middle of body. Depending on the shape of the neck, three subcategories can be distinguished. Comparison with the material from the hoard found some 40 km west of Balkh suggests, however, that at least two more subcategories should be added to this group. Type J3a has a medium wide, cylindrical neck that is topped by a bulbous mouth

<sup>34</sup> Watson 2004, 360; 371. - Fehérvári 2000, 97. For a comparable shape see also an unprovenanced, unglazed jug of the so-called eggshell variety, depicted in Düsseldorf 1973, 116.

<sup>35</sup> Kalter 1997, 145 Fig. 252.

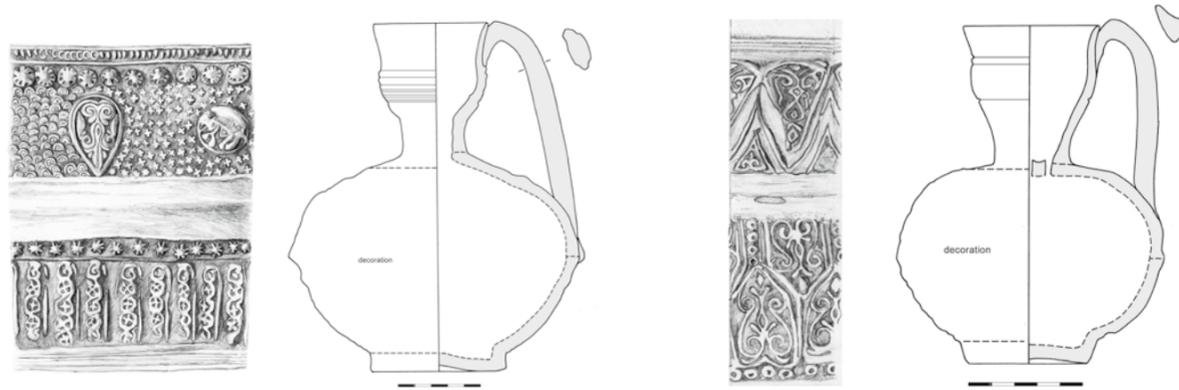


Fig. 5a-d Jug, form-type J3a (HNM 03.20.86a and HNM 03.18.86i, cat. nos. R33 and R20)



Fig. 10 Ewer, form-type E1 (HNM 03.18.86j, cat. no. R21)

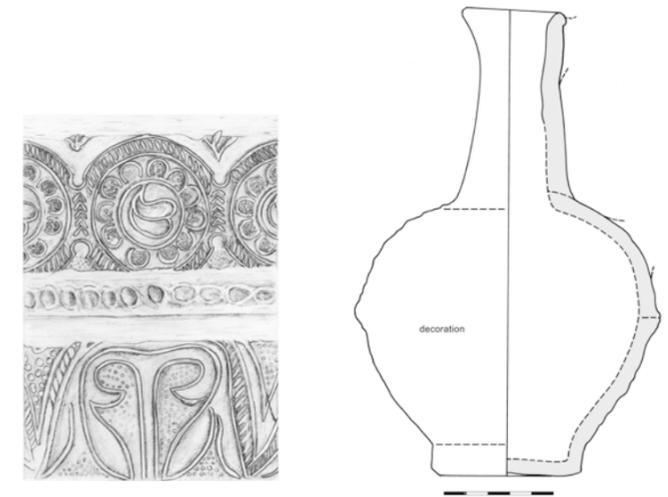


Fig. 11a-b Ewer, form-type E2 (HNM 03.38.86d, cat. no. R40)

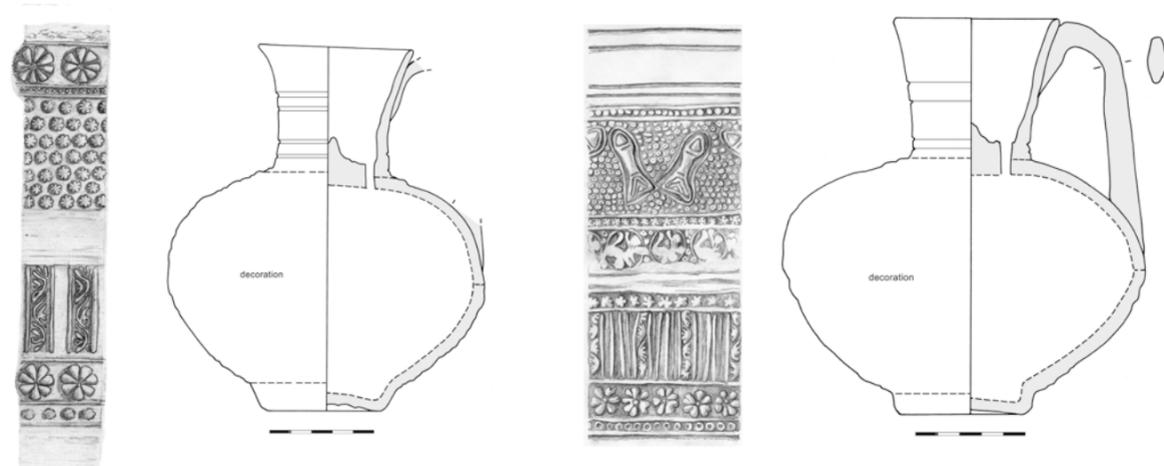


Fig. 6a-b Jug, form-type J3b (HNM 89.127, cat. no. R74)

Fig. 7a-b Jug, form-type J3c (HNM 89.110, cat. no. R61)



Fig. 13 Pilgrim flask, form-type P1 (HNM 04.67.86b, cat. no. R1)

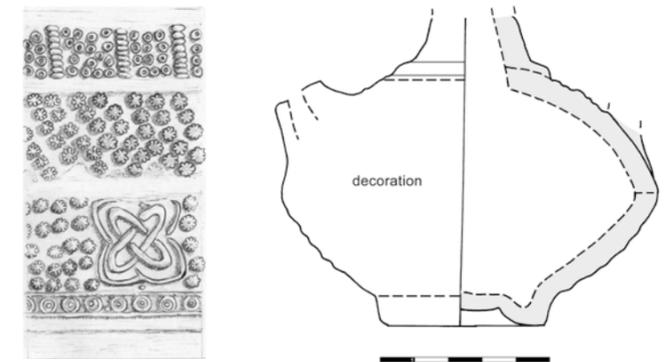


Fig. 12a-b Ewer, form-type E3 (HNM 89.121, cat. no. R72)



Fig. 8 Jug, form-type J4a (HNM 03.38.86b, cat. no. R38)

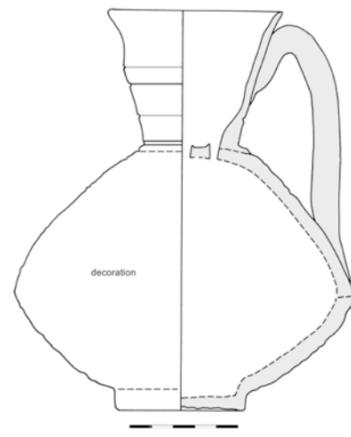


Fig. 9 Jug, form-type J4b (HNM 03.18.86g, cat. no. R18)

with flaring rim (Fig. 5a-d). This form of the neck shows parallels to Iranian glazed fritware vessels with 'cup-mouth' dated to the 12<sup>th</sup> to 13<sup>th</sup> centuries.<sup>36</sup> J. Kalter depicts a variety of this type with a very narrow neck.<sup>37</sup> The collection of the Herat National Museum has no undamaged example of this subcategory. The very narrow opening of several vessels with damaged necks

suggests the assumption, however, that they might belong to this subcategory. Type J3b has a tall cylindrical neck with flaring rim (Fig. 6a-b). Type J3c has a tall conical neck (Fig. 7a-b). Both types are likewise represented in the hoard published by Kalter.<sup>38</sup> Another subcategory of shape J3 that is not represented in the collection of the Herat National Museum has a two-partite neck. Its lower part is cylindrical and slightly tapering, whereas the upper part is conical.<sup>39</sup>

36 Watson 2004, 314.

37 Kalter 1997, 144 Figs. 247-248.

38 Kalter 1997, 144 Figs. 244-246.

39 Kalter 1997, 144 Figs. 247-248. Another parallel is depicted by Fehérvári 2000, 192 no. 243.