POTTERY FROM JĀM: A MEDIAEVAL CERAMIC CORPUS FROM AFGHANISTAN

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Abstract
This paper presents preliminary results of field recording of ceramic material from Jām, Ghūr province, Afghanistan, a site which has been associated with Fīrūzkūh, the summer capital of the Ghurid dynasty. A fabric series and catalogue of forms is presented, in addition to the results of some initial scientific analyses. Comparisons have been drawn with corpora from other sites in Afghanistan, Iran and Central Asia, and the significance of the material is discussed in light of the regional and chronological significance of assemblages from this area.

Keywords
Jām; ceramics; Ghurids; petrology; Afghanistan

I. INTRODUCTION

The Minaret of Jam Archaeological Project (MJAP) was conceived in 2003 to undertake archaeological work at the badly looted site of Jām in Ghūr province, central Afghanistan. The project was initially under the auspices of the Istituto Italiano per l'Africa e l'Oriente, directed by Giovanni Veradi and funded by UNESCO. The first, small-scale, season in 2003 was designed to undertake an impact assessment for the proposed route of a road.[1] The project conducted a second season of fieldwork under the direction of David Thomas in 2005, comprising a larger team with independent funding. During this season, thanks to the generous support of the Fondation Max van Berchem, the author was able to participate as ceramicist to the project; this paper presents an analysis of the corpus recorded during four weeks spent at Jām in July and August 2005.

In the absence of recent work in Ghūr (and very limited research elsewhere in Afghanistan), no modern archaeological publications of the region's ceramic material exist. Indeed, our current knowledge of mediaeval ceramics from Afghan sites still relies almost completely on work undertaken by Jean-Claude Gardin in the 1950s and early 1960s.[2] In the light of this situation, one of the aims of the MJAP has been to initiate recording of an inevitably very preliminary ceramic typology that will clarify the networks connecting the site of Jām with neighbouring regions, in addition to addressing aspects of ceramic production and use at the site itself. Circumstantial evidence for pottery production was identified among the archaeological remains at Khar Khūj, a short distance south of the minaret along the Jām Rūd valley. Here, we recorded a large rectangular kiln, perhaps of the two-stage updraught type, although the upper levels are not well preserved. Pieces of slag, one with an embedded sherd, were observed on the surface in the area, although clear wasters were not seen.[3] Extensive marl deposits were located by geomorphologist Kevin White in the hills flanking the Jām Rūd valley, close to the kiln. More limited deposits of fluvial clay were also present; although too scattered to be practical for large-scale exploitation, these may have provided

1 Thomas *et al*. 2004.

2 It is unfortunate that the only recent publications of Afghan ceramics have been art-historical presentations of often unprovenanced material, usually in private collections. The citation of parallels from such publications is in no way intended to indicate support for academic involvement with artefacts of such uncertain origins.

3 Thomas 2007: 134–35.

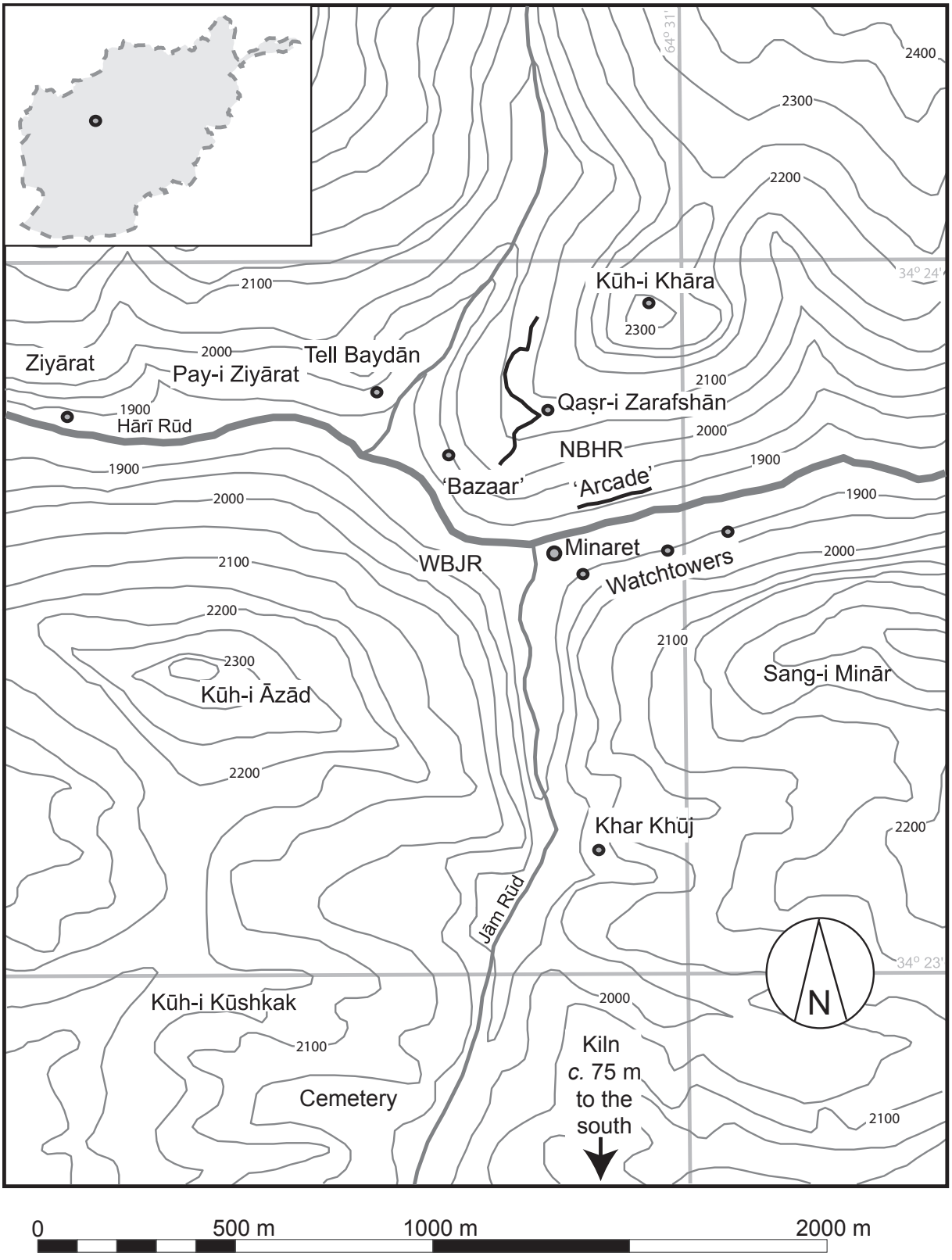


Fig. 1. Map of the Jām area (by David Thomas after Herberg and Davery 1976: 61).

some material for more limited domestic production.[4] The evidence for ceramic manufacture at Jām thus remains ambiguous, but the balance of probabilities would indicate local pottery production.

II. METHODOLOGY

Jām lies on the junction of the Jām Rūd and Hārī Rūd, along steep, mountainous slopes which have been extensively plundered by looters over the past three decades or more (Fig. 1). As a result, the surface pottery corpus largely consists of whatever has been thrown down the slopes from robber holes above. The difficult terrain and the disturbed nature of the archaeology have created circumstances that are not easily conducive to controlled sampling techniques. Furthermore, limited time and the inaccessibility of many of Jām's archaeological features resulted in the collection of surface sherds by multiple team members, inevitably introducing biases into the data; coloured glazed wares in particular are over-represented in the recorded corpus. It had been intended to address these issues during a further season in 2007, when the remaining sherds from 2003 were to be recorded and analysed, but, due to the uncertain political situation, this has yet to take place.

Pottery was collected during the cleaning of a number of robber holes, carried out as part of the archaeological impact assessment in 2003, as well as during the 2005 season. Recording has so far concentrated on the 2005 material, although some of the backlog was also examined in order to make connections between the 2003 preliminary type descriptions and the revised ceramic recording system created in 2005 (see appendix below);[5] the material presented here thus comprises primarily unstratified surface finds. Both a fabric series and a catalogue of forms were recorded, and are presented here in the spirit of reportage, given the unlikelihood of further work in Ghūr in the near future. Ceramic material from several locations at Jām was analysed. The areas sampled were: the mountain-top site of Kūh-i Khāra, apparently an elite residence (113 sherds); the area of the robber holes on the north bank of the Harī Rūd (150 sherds); the cleaned robber holes on the west bank of the Jām Rūd (57 sherds, plus 159 from 2003); the west tower on the south bank of the Harī Rūd (14 sherds); and the archaeological remains at Khar Khūj (15 sherds).

Fabrics were examined in the field under a ×10 hand-lens. Separate series were described for handmade and wheelmade wares, both for convenience and due to the much coarser nature of the former. Seventeen examples of the most common (primarily wheelmade) fabrics were subjected to scientific analysis in the UK, but the current number of exported samples is small. Two tile fragments from the site were also analysed, including a turquoise-glazed piece fallen from the minaret itself. It should be emphasised, though, that the fabric designations presented here rely largely on classifications made in the field. [A.G.]

Permission was kindly granted by the Afghan authorities to export a small number of ceramic samples to the UK after the 2005 season, and these were analysed by Rebecca Bridgman.[6] Petrological analysis was employed to test fabric groups established following hand-specimen examination. Ceramic petrology uses geological criteria to characterise and classify the clay fabric of ceramic vessels using a high-powered microscope.[7] Today, it is one of a number of scientific techniques employed to identify the distribution or provenance of ceramic vessels.[8]

In order to carry out petrological analysis of the clay fabric of a ceramic vessel, a thin section of this fabric must be obtained. This process involves fixing a small fragment of pottery to a microscope slide and grinding it down until it reaches a thickness of approximately 0.03 mm, when mineral and rock fragments present become transparent and can be analysed using a petrological microscope.[9] Once the thin section is made, the fabric sample can then be classified and described based on the identification, arrangement, frequency, size, shape and composition of component inclusions.[10] Samples which share similar characteristics can then be grouped together, although it should

4 White in Thomas *et al*. 2006.

5 Thomas *et al*. 2004: 112–15.

6 Preparation of sections was undertaken by Julie Miller. Additional analyses of the tiles were undertaken by Bruno Fabbri and Sabrina Gualtieri. A generous grant from the Isaac Newton Trust was intended to expand this programme of research, but the cancellation of the 2007 visit to Jām has meant that no further samples have yet been exported from Afghanistan.

7 Williams 1983.

8 Tite 1999: 194–95.

9 Peacock 1970: 379.

10 Whitbread 1995: 368.

TABLE 1. Hand-specimen descriptions of fabrics used in the manufacture of handmade vessels.

Fabric	Petrological group	Description
HF1	1	Characterised by common, sub-angular dark red-brown inclusions.* Medium-hard, granular fabric with abundant, medium to very coarse, red-brown grains, which dominate the break. This fabric can also have secondary fine to medium grains, including white limestone; rounded sand; fine mica; fine, grey lithic pieces as HF2. Fires pink to red-brown.
HF2	1	Characterised by grey lithic fragments. Medium-hard, granular fabric with abundant, medium to very coarse, sub-angular, dark grey lithic pieces, and dark brown fragments. Secondary grains include soft, white limestone; crystalline quartz; plates of mica; and red-brown, sub-angular grains as HF1. Fires beige to grey-brown.
HF3	2	Characterised by unmixed clay/marl. Very hard, dense fabric with smooth texture; dominated by common, small to medium, soft beige, pale green or ginger-brown inclusions, probably unmixed clay/marl; also small amounts of cream, semi-decomposed limestone. Secondary grains include red-brown inclusions as HF1; rare mica; rare crystalline quartz; rare, fine to coarse, rounded black grains. Fires light pink-brown, often with cream firing surface. This fabric is not unlike WF1 (see Table 2).
HF4	No samples analysed	Characterised by white crystalline grains. This uncommon fabric can be very hard; dominated by rounded to jagged crystalline quartz. Secondary grains include red-brown inclusions as HF1; smaller dark red grains; mica; fine, grey lithic fragments as HF2; pieces of beige unmixed clay as HF3. Fires a range of red-browns, sometimes with light grey core.
HF5	No samples analysed	Characterised by round, shiny black inclusions. Porous fabric with fine to medium fine, round, shiny, black grains; this is something of a catch-all fabric, with many other inclusion types also present, including common, soft, beige-ginger unmixed clay as HF3; rare, fine to coarse, crystalline quartz; rare, fine to coarse, red-brown lumps as HF1; rare, fine, round, dark red grains; rare, fine, soft and crumbly, red to black, silty grains; mica. Fires beige to light grey, often fractures into flakes.

* The term "inclusions" is not here intended to indicate deliberately added matter, as opposed to that naturally occurring in the clay mix.

be noted that limited variation within such groups must be expected.[11]

Fabric groups were defined as "local" or "non-local" in relation to their hypothesised point of production. "Local" products were probably made within approximately a 5-mile radius of the site, whereas "non-local" products were probably imported from a production centre outside this radius. Methods used to carry out such identification include a geological knowledge of the region studied[12] or the abundance in any given assemblage of particular ceramic types.[13] [R.B.]

III. FABRIC SERIES

III.1. Hand-specimen analysis

Handmade fabric series

Five handmade fabrics were defined (see Table 1 for full descriptions); these should be regarded as a spectrum of fabrics rather than a series proper, since the boundaries between individual fabrics are not clearly delineated. The handmade fabrics are in general fairly hard, indicating a high firing temperature, and are commonly red or red-brown (no Munsell chart was present during the field recording). Predominant inclusions comprise limestone, lithic fragments, quartz and unmixed clay, and grain-size is in general larger than in wheelmade fabrics, presumably due to the difficulty of throwing coarse clays. Additionally, cooking wares in particular benefit from coarse fragments in

11 Whitbread 1995: 372.
12 White in Thomas *et al*. 2006.
13 Tite 1999: 194.

TABLE 2. Hand-specimen descriptions of fabrics used in the manufacture of wheelmade vessels.

Fabric	Petrological group	Description
WF1	3	Moderately dense fabric with fine to coarse inclusions in abundance, including medium, soft, white limestone; fine, round, black and dark red grains; fine to medium lithic fragments including crystalline quartz and sub-angular, dark grey grains; beige, pale green or ginger unmixed clay/marl; occasional red-brown grains; rare, soft, black grains, in variable proportions. Fires pink to light brown (although one or two sherds have overfired to dark grey-brown) with cream firing surfaces.
WF2	4	Hard, dense fabric, as WF1 but well levigated, with same range of grains, but fewer and finer.
WF3	No samples analysed	An unusual variant of WF2, moderately hard and dominated by very abundant, fine to coarse, cream to yellow, semi-decomposed inclusions, presumably limestone; the surfaces are pock-marked where these particles have burnt out. Contains few other visible inclusions except fine to coarse, beige to ginger unmixed clay/marl grains. Cream firing surfaces.
WF4	No samples analysed	Soft, fine-grained fabric with few visible inclusions; scarce, small, blackish-red speckles; blotches of pale brown, unmixed clay/marl fade into the pale beige or cream colour of the matrix. Cream firing surfaces.
WF5	7	Medium-soft fabric with matrix of very fine-grained sand, visually distinct from the clay matrices of WF1–4; also contains rare to moderate, fine, grey and white lithic fragments and a little mica. Surfaces have dirty grey-cream firing patina. Used for both unglazed and glazed (especially plain blue- and green-glazed) vessels.
WF6	5 and 6	Finer grained than WF5, and not so sandy, the matrix is light pink-brown, with a dense speckling of cream. Also contains fine, crystalline quartz particles. Fires brick-red to pink-brown. Used primarily for polychrome incised wares.

the clay mix, since these particles aid thermal shock resistance.[14] One particular feature of the handmade vessels is of note: after being washed, and presumably due to the absorption of water into the fabric and its subsequent evaporation, sherds became cool to the touch and remained so for some considerable time, even when placed in the sun. When handmade and wheelmade sherds were washed and laid out together, residual coolness was much more marked in the former. This is of obvious merit in a pot used for storing foodstuffs in a hot climate, and presumably such thermal qualities would also have served to retain heat in cooler weather. This characteristic seems likely to be a deliberate feature of the clay mix.

Wheelmade fabric series

The individual wheelmade fabrics are less disparate than the handmade clays, and are much more clearly delineated from each other (see Table 2 for full descriptions). WF1, WF2 and WF3 are all broadly related to the handmade fabrics (WF3 is extremely uncommon, and WF4 scarcely less so), and exhibit similar firing colour and range of inclusions, albeit finer grained. WF5 and WF6 are distinctly different mixes, both from WF1–4, and from each other; WF5 fires beige/light grey-brown, and contains fine quartz; WF6 is fine-grained, red to pink-brown, and contains fine quartz and limestone. With the exception of the stonepastes, most of the glazed pieces are of fabrics WF5 and WF6, indicating distinct production processes for glazed vessels.

Stonepaste and celadon fabrics

Stonepaste is an artificial paste containing significant quantities of ground quartz, mixed with a pale clay and powdered glaze material.[15] Stonepastes from Jām are rarely pure, unmarked white, being instead pale cream, beige or grey with speckles of darker material. This is true even of the Iranian imports, but is more marked in wares of Afghan origin, for example, the turquoise moulded wares, where the blue of the glaze has often smudged into the break at each edge; these Afghan wares might better be characterised as "proto-stonepastes".[16] The Iranian wares are denser, finer-grained and more highly fired than the Afghan ones,

14 Tite *et al.* 2001.

15 Watson 2004: 507.

16 Mason 2004; although only one such sherd was subjected to petrological analysis as part of this project.

TABLE 3. Summary of groups characterised by means of thin-section analysis (R.B.).

Petrological group	No. of samples	Hand-specimen group	Summary description
1	2	HF1 & HF2 (both handmade geometrically painted ware)	Coarse red-firing fabric, large inclusions, poorly sorted, sub-rounded in shape. Quartz 7%, sandstone 5%, siltstone 3–5%, limestone 2%, orthoclase feldspar 3%, biotite mica 3–5%, iron-rich inclusions 3–5%. Maximum inclusion size 2.5 mm. Likely local product.
2	1	HF3 (handmade plain ware; Fig. 14, 5)	Moderately fine red-firing fabric, large inclusions, moderately sorted and rounded to sub-rounded in shape. Limestone 10%, quartz 3%, biotite mica 3%, iron-rich inclusions 3%. Maximum inclusion size 2 mm. Possible import.
3	1	WF1 (wheelmade plain ware)	Moderately coarse red-firing fabric, moderately sorted inclusions, sub-rounded in shape. Iron-rich inclusions 3%, quartz 2%, biotite mica 2%, limestone 2%, sandstone or siltstone 2%, volcanic rock fragment <1%. Maximum inclusion size 2 mm. Likely local.
4	6	WF2 (wheelmade plain ware and moulded ware; also one sherd of WF6 polychrome incised ware)	Moderately fine red-firing fabric, moderately sorted inclusions, sub-rounded in shape. Iron-rich inclusions 3–5%, quartz 1–3%, sandstone or siltstone 1%, limestone 1–3%, biotite mica 1–2%, orthoclase feldspar trace to 2%. Maximum inclusion size 1.2 mm. Likely local.
5	1	WF6 (wheelmade plain ware, unglazed)	Fine red-firing fabric, well sorted inclusions, sub-rounded in shape. Quartz 10%, limestone 5%, sandstone 2%, iron-rich inclusions 3%, biotite mica 2%, orthoclase feldspar 1%. Maximum inclusion size 0.3 mm. Possible import.
6	2	WF6 (polychrome incised ware)	Fine red-firing fabric, well sorted inclusions, sub-rounded and sub-angular in shape. Quartz 7–10%, limestone 10%, iron-rich inclusions 3–5%, orthoclase feldspar 1%. Maximum inclusion size 0.2 mm. Possible import.
7	3	WF5 (two monochrome glazed inc. Fig. 6, 4; one moulded)	Fine buff-firing fabric, moderately well sorted inclusions, predominantly sub-rounded in shape. Quartz 5–10%, limestone trace 3%, orthoclase feldspar 2–3%, iron-rich inclusions 1–3%, sandstone trace to 1%. Maximum inclusion size 0.7 mm. Possibly local.
8	1	Minaret tile	Moderately fine buff-firing fabric, poorly sorted inclusions, sub-angular in shape. Quartz 2%, quartzite 1%, limestone 2%, orthoclase feldspar 1%, iron-rich inclusions 1%. Maximum inclusion size 1.8 mm. Probable import.
9	1	Proto-stonepaste (turquoise glazed)	Fine buff-firing fabric, well sorted inclusions, sub-rounded and sub-angular in shape. Quartz 10%, limestone 2%, orthoclase feldspar 1%, iron-rich inclusions 1%. Maximum inclusion size 0.6 mm. Probable import.
10	1	Stonepaste (probable floor tile, obj. no. 58)	Fine buff-firing fabric, moderately well sorted inclusions, sub-rounded and sub-angular in shape. Quartz 30%, sandstone 3%, limestone 10%, iron-rich inclusions 1%. Maximum inclusion size 1 mm. Probable import.

which are gritty and friable, and less good quality; these characteristics may reflect coarser quartz grains and/or a lower firing temperature.[17] Stonepaste fabrics are commonly referred to as "frit" or "frit-ware", terms which Mason has asserted are technically incorrect,[18] or "quartz-paste".[19] Due to the dominance of a single

[17] Watson 2004: 327.

[18] Mason 2003: 271; see also Mason and Tite 1994 for a history of early Islamic stonepastes at least in Iraq and Egypt.

[19] Although Mason and Keall (1990: 181) further point out

common mineral, stonepastes are not well suited to petrographic analysis, although some attempts have been made to characterise different Iranian production centres by these means.[20]

A single sherd of celadon, with a highly fired, dense, grey stoneware fabric, was identified in the assemblage. [A.G.]

III.2. Petrological Analysis[21]

Handmade fabrics

Three samples of three different handmade fabrics were subjected to petrological analysis; these were divided into two groups (groups 1–2; see Table 3 for full descriptions, also Fig. 2). Group 1, incorporating two of the samples, was characterised by inclusions of large sedimentary rocks and iron-rich pellets, both in sparse quantity (3–5%). Group 2 was distinguished from group 1 by a lack of sedimentary rock inclusions and by an increased presence of limestone (here in moderate quantities, 10%). The variation between these groups may indicate different production sources.

Wheelmade fabrics

Thirteen samples of five different wheelmade fabrics were subjected to petrological analysis; these were divided into five groups (see Table 3 for full descriptions; also Fig. 2) all of which were characterised by smaller inclusions than those observed in the handmade fabrics. Four of these fabric groups were red-firing (groups 3–6) and one was buff-firing (group 7). Of these five groups, groups 3 and 4 displayed similarities, as did groups 5 and 6.

Groups 3 and 4 both contained a similar range of inclusions to handmade group 1, with the principal difference being the frequency of large inclusions, typically of sedimentary rock fragments or iron-rich inclusions. For example, large inclusions of 2 mm or greater in size are present in rare quantity (1%) in groups 3 and 4, rather than sparse quantity (3–5%) as observed in group 1. This suggests that the same, or at least nearby, clay sources were used to make these handmade and wheel-thrown fabrics but differences in the way the raw material was processed may have resulted in the extraction of many of the large inclusions of the wheelmade fabrics. The difference between groups 3 and 4 is again based on the size of inclusion, which is slightly smaller in group 4 (only up to 1.2 mm) compared to group 3 (up to 2 mm). Furthermore, two samples in group 4 contain possible inclusions of granite, whereas the lone sample in group 3 contains a volcanic rock fragment. Given that the clay around Jām is alluvial in nature, it is normal to observe stray inclusions of different rock types in clay from the same or nearby sources.

Groups 5 and 6 differ significantly from the groups discussed above both in the quantities of inclusions and the appearance of their clay matrices. It can be hypothesised, therefore, that these fabric groups may originate from different production sources to groups 1–4. Groups 5 and 6 are considerably finer fabrics with inclusions no larger than 0.3 mm in size. Both these fabrics contain moderate quartz (10%) and are differentiated by variation in the quantity of limestone inclusions observed (between sparse and moderate 5–10%), as well as the presence of rare (2%) fine-grained sandstone in group 5 and the presence of sparse (5%) iron-rich inclusions in group 6.

Group 7 incorporates three different samples which display slight variation in their fabrics but this was not viewed as sufficient to split them into separate groups. This buff-firing fabric group is characterised by sparse (5–7%) sub-rounded quartz inclusions alongside rare (1–2%) quantities of angular inclusions; the shape of the latter could indicate i.e. the addition as temper by the potter. Other inclusions are rare (1%) to trace sandstone or siltstone, which could indicate a nearby source to that of the red-firing fabrics, although this buff-firing group is differentiated by rare quantities (2–3%) of calcareous inclusions. Further testing of buff-firing clays from the region is required to determine if this is a local product.

Minaret tile (group 8)

This buff-firing fabric is characterised by a large quartzite inclusion measuring 1.8 mm in size, alongside an iron-rich inclusion of similar size. The fabric also contains calcareous inclusions in the form of rare (2%) limestone and secondary calcite, the latter most likely formed during the firing process.[22] The differences

that "In the case of Persian luster-wares, the principal ingredient is not crystalline quartz, but chert, a sedimentary precipitate of silica".

20 Mason 2004.

21 The percentage presence of inclusions observed in all fabric groups shown in Table 3 was calculated using comparative charts (see Matthew *et al.* 1991).

22 Cau Ontiveros *et al*. 2002: 12.

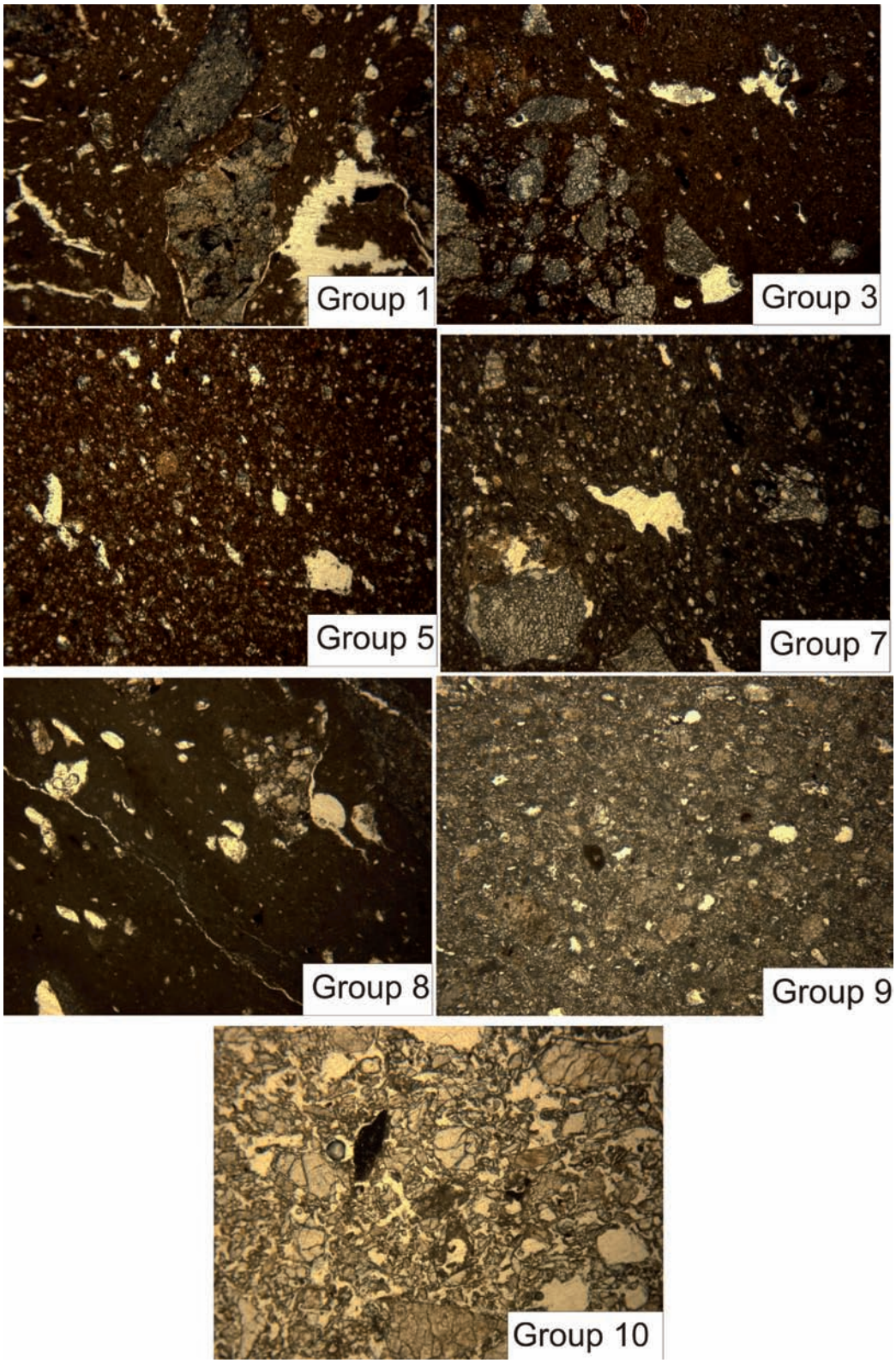


Fig. 2. Photomicrographs of thin-section samples from Jām (by Rebecca Bridgman); each image area size is 1023 × 768 µm.

between this fabric and buff-firing group 7, possibly a local product, mean that it seems unlikely that this tile was manufactured at Jām.

Stonepaste or proto-stonepaste fabrics

One proto-stonepaste and one stonepaste fabric were identified using petrology. The proto-stonepaste (group 9) was characterised by moderate quantities (10%) of quartz, which is poorly sorted, measuring between 0.1 and 0.6 mm in size. The origin of this fabric is unclear as it does not match any of the descriptions of Islamic ceramics analysed by Mason.[23] It could represent an imitation of stonepaste fabrics that may have been produced in the Afghan region but possibly not in the vicinity of Jām.

The remaining fabric resembles stonepaste (group 10) the matrix of which is packed with common (30%) quartz and moderate quantities (10%) of limestone alongside sparse (3%) fine-grained sandstone. This mixture of inclusions does not match exactly any of the fabrics identified by Mason in his analyses of Islamic ceramics, particularly in the lower quantities of quartz present. However it should be noted that Mason identifies significant carbonate inclusions in ceramics from Rayy[24] and as a result it is a possible production location for this stonepaste fabric. Further analyses of ceramics from this area are required in order to test this hypothesis. [R.B.]

IV. CATALOGUE OF WARES AND FORMS

The corpus presented here is based on more than 500 sherds processed during the 2005 season; of these, over a hundred were drawn and are presented here (Tables 4–15; Figs. 3–15).[25] These illustrations provide a preliminary indication of the range of wares and forms from the site. Comparisons have been drawn as far as possible with corpora recorded from other sites in the area. Typical vessels in use at Jām include large, wheelmade jars and basins; handmade cooking pots of various sizes painted in black on red slip; cream-slipped jugs with black decoration and elongated spout forms, and jugs with moulded decoration; glazed bowls of polychrome incised ware and turquoise moulded stonepaste. Each ware is described below and details of all illustrated sherds are given in the accompanying tables.

The limited size of the currently recorded corpus, the methods of ceramic collection and the unfinished nature of the site survey render it difficult to make more than general observations about variation across the site (see below). Most striking was the material from the surface of Kūh-i Khāra, apparently an elite mountain-top residence. Despite extreme difficulties of access, pottery from here included a significant proportion of high-status wares: five out of eleven recorded sherds of lustre-ware, including a tile, and two of the three pieces of mina'i ware, both decorated with gold leaf. The pottery from the outlying part of the site at Khar Khūj, on the other hand, contained examples of forms not found elsewhere: small, squat bottles with thick walls and short necks, vertically cut on one side while leather-hard (Fig. 8, 8 and 8, 9). The function of these strange vessels remains unclear; given their location in an area with at least some industrial activity[26] it is possible that they were involved in such processes, although they show no traces of burning or residue.

IV.1. Celadon (see Table 4, 1; Fig. 3, 1)

Only a very few pieces of pre-Mongol Chinese wares have been found on archaeological sites in Central Asia, making the occurrence of even a single sherd at Jām of some note.[27] The sherd from Jām seems typical of eleventh- to twelfth-century Northern Song dynasty celadon bowls (also termed Yaozhou ware), in terms of fabric- and glaze-colour, and decorative style.[28]

IV.2. Iranian glazed stonepaste wares

Vessels with stonepaste bodies were widespread across mediaeval Afghanistan. In particular, high-sta-

23 Mason 2004.

24 Mason 2004: 142–43.

25 All drawings were made by the author in the field and inked by Will Schenck. Conventions used are: black for black; light, printed stipple for a light tone, usually green; darker printed stipple for a medium tone, usually dark blue; light, hand stipple, usually for gold; and dark, hand stipple, usually for red or dark brown. The following abbreviations are used: WBJR = west bank of the Jām Rūd; NBHR = north bank of the Hārī Rūd; RH = robber hole number.

26 But see Thomas 2007: 133–34 for evidence suggesting a high-status building in the vicinity.

27 Sokolovskaia and Rouguelle 1992.

28 Kerr 2004: 52–61; Henry Hengwu Liu pers. comm.

TABLE 4. Descriptions of pottery illustrated in Fig. 3.

No.	Details
1	Celadon. Fabric: very hard, dense, light grey, vitrified stoneware. Surfaces: thick, smooth, pale grey-green glaze on interior and exterior; exterior has moulded lotus-petal pattern, interior is decorated with elaborate (moulded?) design. Provenance: WBJR, RH3. Drawing: 05/40; stance approximate. Parallels: bowls with moulded lotus decoration, V&A Museum, eleventh–twelfth century (Kerr 2004: 54, fig. 49).
2	Mina'i ware. Fabric: stonepaste. Surfaces: white glaze, exterior plain but interior has elaborate design outlined in thin black lines and infilled with red, blue and pale green, overlain with gold leaf in places; possibly representing clothing? Provenance: Kūh-i Khāra. Drawing: 05/23, stance approximate; see Fig. 15A.
3	Mina'i ware. Fabric: stonepaste. Surfaces: pale turquoise glaze interior and exterior. The exterior has embossed decorative patches of stone-paste, applied over the first glaze layer, the vessel being then reglazed with a slightly thinner and paler coat; the surface is worn but traces of fine red enamel lines and patches of gold leaf still adhere. Provenance: Kūh-i Khāra. Drawing: 05/24, stance approximate.
4	Mina'i ware. Fabric: stonepaste. Surfaces: white glaze interior and exterior. The interior is decorated with a band of inscription in blue, largely illegible; the exterior has a complex design in blue, black, green and yellow. Provenance: WBJR, RH11. Drawing: 05/41, stance approximate.
5	Lustreware. Fabric: stonepaste. Surfaces: gold painting over white glaze. Diameter: uncertain. Provenance: Kūh-i Khāra. Drawing: 05/32, stance approximate; interior chipped just below rim.
6	Lustreware. Fabric: stonepaste. Surfaces: copper and gold decoration over white glaze, interior with complex design, exterior with rim-band and edge of inscription. Diameter: 26 cm (2%). Provenance: WBJR, RH4, 1027. Drawing: 05/8.
7	Lustreware. Fabric: stonepaste. Surfaces: design picked out with fine copper-coloured line, then filled somewhat carelessly with thicker brush and gold tone, both over white glaze; the exterior design may be a horse. The interior has thicker white glaze over upper walls, running over thinner glaze in thick drips. Provenance: Kūh-i Khāra. Drawing: 05/28, unstanced; see Fig. 15B.
8	Lustreware. Fabric: stonepaste. Surfaces: exterior has copper-coloured design, interior has faded band of inscription within striped and circular motifs in a gold shade, both over white glaze. Provenance: Kūh-i Khāra. Drawing: 05/30, stance approximate.
9	Lustreware. Fabric: stonepaste. Surfaces: gold decoration on white glaze, exterior with stripes, circles and dots, interior with inscription possibly including "Muhammad". Provenance: NBHR, RH201, 1240 (spoil). Drawing: 05/91, unstanced.
10	Lustreware. Fabric: stonepaste. Surfaces: white glaze inside and out, interior decorated with vertical gold stripes. Provenance: Kūh-i Khāra. Drawing: 05/31, stance approximate. Parallels: simple vertical stripes decorating a small jar made in Kāshān *c*. 1170–1220 (Watson 2004: 361, cat.O.20).
11	Lustreware. Edge of tile with modelled and painted surface. Fabric: stonepaste. Surfaces: front glazed white with gold decoration, with broken edge of modelled feature; back uncoated, slightly uneven surface with imprint of fine textile. Provenance: Kūh-i Khāra. Drawing: 05/29.

tus ceramics such as mina'i and lustreware from Iran were made using this fabric.

Mina'i ware (Table 4, 2–4; Fig. 3, 2–4)

Imported from Iran, this ware was apparently produced in Kāshān for about forty years prior to the Mongol conquests, according to the evidence from inscribed and dated vessels.[29] Mina'i is characterised by elaborate decorative scenes in many colours, some of which (pale blues, greens and purples) were painted on before firing, with others (notably black and red) being added in the form of a vitreous flux or enamel, the vessel then being re-fired to bond these secondary colours to the base glaze.[30] Vessels can also have embossed decoration or applied gold leaf; these techniques are both present in the pieces from Jām. While three sherds are not many, in comparison with the low numbers of mina'i sherds found during long-term excavations at major sites in Iran, the ware appears to be comparatively well represented at Jām.[31]

[29] Watson 2004: 363; Mason 2004: 131–32.

[30] Mason *et al*. 2001.

[31] For example, mina'i sherds from excavations in the Friday Mosque in Isfahan, which lasted from 1972 to 1978, are

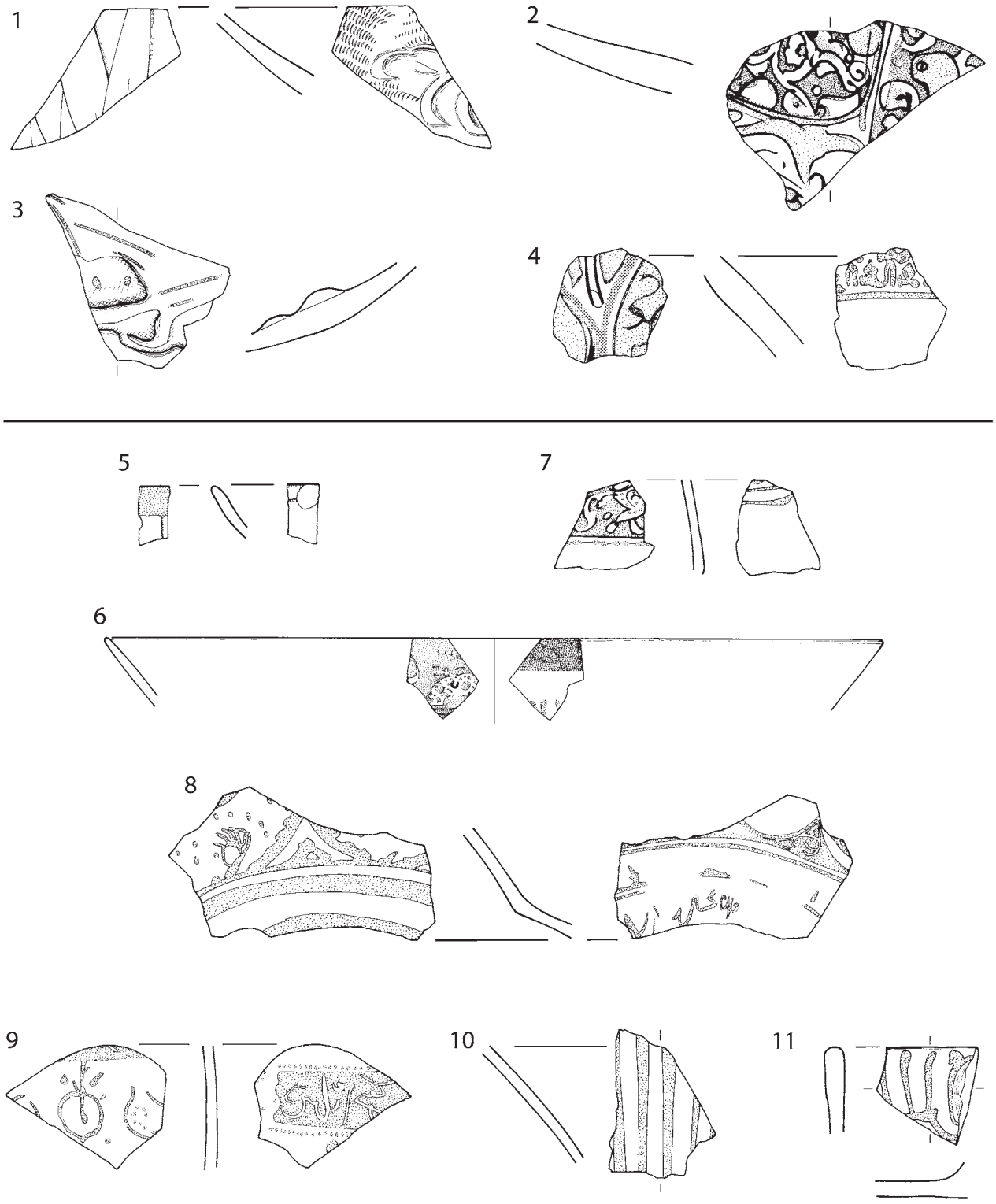


Fig. 3. Celadon, and Iranian stonepaste mina'i and lustrewares (scale 1:2 except 2–4, scale 1:1).

Lustreware (Table 4, 5–11; Fig. 3, 5–11)
Lustrewares were more common at Jām, and in particular at Kūh-i Khāra, than mina'i ware. Their place of production is generally assumed to be Iran; however it must be noted that this ware was also manufactured at Merv, where numerous wasters have been recovered, although the inhabitants of that city appear to have imported some material from Kāshān as well.[32] Pieces were mostly from thin-walled, delicate bowls, but the fragments are not large enough to allow their attribution to Mason's groups.[33] Certain sherds, in particular those with the most complex decorative schemes, appear to have two shades of lustre-painting: precise copper-coloured lines and sloppier gold fill. The copper tone probably indicates a copper-rich lustre pigment, as opposed to a silver-rich one; the latter went out of common use *c*. 1100 due to a shortage of silver.[34] Whether these tones represent different preparations, or if they might result from, for example, variations in dilution of the same coating, is unclear. The inscriptions, where present, are not complete enough to be deciphered.[35]

Underglaze-painted wares (Table 5, 1–7; Fig. 4, 1–7)
Again most likely to be a product of Iranian workshops, these wares are dated broadly to the late twelfth and first two to three decades of the thirteenth century, with black on turquoise wares being supplemented by the manufacture of Watson's "Kashan style" vessels (chromium black on white with cobalt blue) *c*. 1200.[36] It is not impossible that examples of such wares were being made more locally, with two vessels in particular having something of a "provincial" appearance (Fig. 4, 3 and 4). Similar wares were apparently manufactured in many centres and are also widespread in Syria.[37] The examples from Jām are most commonly decorated with precise black designs under a turquoise glaze, sometimes with a streaky royal (cobalt) blue rim-band or other secondary decoration. Also illustrated are a piece with the same streaky blue rim-band and a white-glazed body; and a piece with olive green, as well as black and royal blue, decoration on a white glaze.

Incised ware
A number of pieces of high-quality, white stonepaste with a thick, clear glaze, presumably of Iranian origin, were retrieved from Kūh-i Khāra (these are not illustrated as no diagnostic sherds were present). Twenty-nine tiny sherds were scattered across a small area, not far from the cistern. Of these, eight were glazed on the exterior only, two were glazed on the exterior with drips running down the interior surface, and nineteen were glazed both inside and out; one each of these was marked with fine incised decoration beneath the exterior glaze, the designs being simple, horizontal parallel lines and a band of lightly curved, short vertical lines. The localised scatter of the sherds would imply that all came from a single vessel, which in the light of those sherds with unglazed interior must have been a closed form, with only the upper interior surfaces glazed. A magnificent possible parallel from late twelfth- or early thirteenth-century Iran is in the Al-Sabah collection.[38]

IV.3. Afghan glazed wares with proto-stonepaste bodies

Turquoise moulded ware (Table 5, 8–10; Fig. 4, 8–10)
This type of pottery was first defined from Bāmiyān by Gardin, who regarded the ware as a provincial imitation of Iranian carved "Seljuk" wares; it was further described by Watson, who dated it to the twelfth and thirteenth centuries with an origin in the "eastern Iranian world"; also by Fehérvári, who dated it to the twelfth and thirteenth centuries; and was described

really scarce in comparison to Jām: Martina Rugiadi (member of the joint Iranian-Italian ADAMJI project—A Digital Archive for the Masjed-e Jom'e in Isfahan, directors F. Saeidi, and B. Genito), pers. comm.

32 David Gilbert pers. comm.; Lunina 1962; Herrmann *et al*. 2000; see also Pradell *et al*. 2008.

33 Mason 2004: 123–30.

34 Mason *et al*. 2001: 200–201.

35 The author is grateful to Hugh Kennedy for looking at the inscriptions.

36 Watson 2004: 337–43; Fehérvári 2000: 107–13; Mason 2004: 132–33; Mason *et al*. 2001; Morgan 1994a. As with lustrewares, this material was manufactured at Merv, where kilns and wasters have been found; however, it is not apparently found in pre-Mongol layers in the Merv Oasis. At settlements such as Geok-Gumbaz, founded after the Mongol conquest, it is a common ceramic type, but notably missing from such assemblages are other twelfth-century types such as polychrome incised wares. Whether the material has been mis-dated or arrives in Central Asia at a later date is open for debate (David Gilbert pers. comm.).

37 McPhillips 2002: 143–46, "alkaline glazed fritware"; Tonghini 1998: 47, in particular ware Y: fritware 2, black painted decoration under turquoise glaze; and ware AH: fritware 2, black painted decoration with blue under colourless glaze.

38 Watson 2004: 311, cat. L.8.

by Le Berre from Jām. Gardin, Watson and Morgan all suggest that this ware, not being found in archaeological contexts at other sites, must be local to, and produced only in, Bāmiyān.[39] Morgan furthermore considers the existence of a stonepaste industry at Bāmiyān to be remarkable, given both the small number of production sites across the Islamic world and the lack of known earlier pottery production in the city. He concludes that the production of this ware must have been the result of a deliberate relocation of potters by the Ghurid dynasty from Nishapur.[40] He does not, however, address the significant stylistic differences between these vessels and those known to have originated from Nishapur, and in the light of the paucity of evidence concerning the ceramic industries of mediaeval Afghanistan, and the limitations of the published data, his conclusions should be treated with considerable caution, especially in light of the frequency with which sherds of this, and similar, wares appear on the surface at Jām.

The ware is characterised by a friable, brittle stonepaste fabric, unslipped, with an often coarse glaze ("presumably alkaline fluxed"[41]) over moulded interior decoration, the glaze covering also the upper exterior walls. Vessels shatter into tiny pieces that are ubiquitous across the site. The forms are primarily small to medium thin-walled bowls. Watson suggests that the fragility of these vessels, in combination with the high number of intact examples sold in auction houses in recent years "raises unease about the authenticity of the group as a whole".[42] The recording of examples from archaeological deposits at Jām (and Bāmiyān), though, shows that the ware is clearly of genuine mediaeval date, although the presence of fakes on the modern antiquities market remains a possibility.

Plain glazed wares (Table 5, 11–13; Fig. 4, 11–13)
This group is broadly comparable to turquoise moulded ware in terms of fabric, glaze and finish, but lacks moulded decoration. The glaze is usually turquoise, but other blue-green shades also occur. As with the moulded wares, the small number of illustrated examples belies their frequency in the Jām corpus. A few body sherds from closed forms were noted, but the majority of sherds are from small to medium bowls. These plain proto-stonepastes may be related both to the moulded pieces and also perhaps to the more "provincial" examples of slip-underpainted wares above.

IV.4. Glazed wares with earthenware bodies

The stonepastes aside, two distinct fabrics were identified among the glazed vessels examined during 2005. These, WF5 (petrological group 7) and WF6 (petrological groups 5–6; but see below), are visually reasonably different both from each other and from coarse-ware clays WF1–4 (both WF5 and, less commonly, WF6 were also used for unglazed vessels). WF6 is primarily found in the form of polychrome incised ware, in addition to occasional pieces of moulded and coarse wares. WF5 has been identified in a wider range of vessels, both glazed and unglazed. These clays might therefore represent the output of two different ceramic production centres, and in the light of the petrological analyses, we might suggest that WF5, used frequently for monochrome glazed vessels, represents production in the region of Jām; while WF6 vessels were brought in from elsewhere. However, we should note the presence of a single sherd of polychrome incised ware, indistinguishable in terms of its finish and decoration from the wider group, but of fabric WF5 (Fig. 5, 2). Furthermore, petrological analysis included three pieces of polychrome incised ware, all designated WF6 in the field. Two of these were classified uncontroversially in thin-section group 6; the third piece, however, was petrographically closer to group 4, which otherwise comprised field fabric WF2, thus tentatively designated a local production. This is clear

39 Gardin 1957: 238–39, group B, series 4; Watson 2004: 326–31, "Bamiyan fritwares"; Fehérvári 2000: 151–53; Sourdel-Thomine 2004: 45, group E; Morgan 1994b: 299; none of the examples from Jām have secondary decoration.

40 Morgan 1994b: 295–300.

41 Morgan 1994b: 301.

42 Watson 2004: 327. Gardin (1957: 227) recorded many intact vessels from Bāmiyān, which he suggests were abandoned following the Mongol invasions. Scerrato (1959: 46) records the finding of a cache of glazed vessels at Ghaznī, nearly all complete, in a vaulted niche, with more placed inside a jar set into the floor. Glazed pots packed into large jars for safe storage, perhaps around the time of the Mongol invasions, have also been found buried in Gurgān (Lane 1957: 6, n. 2). If such practices were widespread in the storage of household ceramics, it is perhaps not surprising that so many intact bowls have been unearthed by looters for sale to foreign collectors. Whatever the explanation (brief occupation periods, patterns of behaviour and/or site formation processes), the survival of intact ceramics from sites in Afghanistan seems to have been reasonably commonplace.

TABLE 5. Descriptions of pottery illustrated in Fig. 4.

No.	Details
1	Underglaze-painted ware. Fabric: stonepaste. Surfaces: interior has black design under interior and exterior turquoise glaze with a streaky royal blue rim-band. Diameter: *c*. 22 cm (3%). Provenance: Kūh-i Khāra. Drawing: 05/36.
2	Underglaze-painted ware. Fabric: stonepaste. Surfaces: interior and exterior have black decoration under turquoise glaze with a streaky royal blue rim-band. Diameter: *c*. 20 cm (4%). Provenance: Kūh-i Khāra. Drawing: 05/35. Parallels: a thirteenth-century vessel from Iran exhibits the same use of an inscription band (Fehérvári 2000: 112, no. 134).
3	Underglaze-painted ware. Fabric: stonepaste. Surfaces: black vertical stripe on interior under turquoise glaze. Diameter: 18 cm (4%). Provenance: WBJR, RH3. Drawing: 05/39. Parallels: thirteenth-century "provincial" bowl, for decoration rather than form (Watson 2004: 343, cat.N.13.).
4	Underglaze-painted ware. Fabric: stonepaste. Surfaces: uneven black rim-band under turquoise glaze. Diameter: *c*.18 cm (2%). Provenance: NBHR, sherd scatter above RH200. Drawing: 05/89. Parallels: Qal'at Ja'bar, last quarter of twelfth and first half of thirteenth centuries (Tonghini 1998: fig. 67e).
5	Underglaze-painted ware. Fabric: stonepaste. Surfaces: black and streaky royal blue rim-bands overlaying each other on a white ground, plain on the interior; the exterior is black with the edge of an inscription left white. Diameter: uncertain. Provenance: Kūh-i Khāra. Drawing: 05/38. Parallels: Iran, *c*. 1200–20; Iran, possibly 1214 (Watson 2004: 339, cat.N.7, "Kashan style"; Morgan 1994a: 199, no. 214, upper vessel—it is not clear to which of the two illustrated vessels the caption refers).
6	Underglaze-painted ware. Fabric: stonepaste. Surfaces: streaky royal blue rim-band and clear/white crackle-glazed body. Diameter: 10 cm (9%). Provenance: Kūh-i Khāra. Drawing: 05/25. Parallels: Qal'at Ja'bar, last quarter of twelfth and first half of thirteenth centuries (Tonghini 1998: fig. 70a).
7	Underglaze-painted ware. Fabric: stonepaste. Surfaces: interior has olive green background with fine inscription left in white, exterior has black and royal blue decoration on a white glaze. Provenance: Kūh-i Khāra. Drawing: 05/37, stance approximate.
8	Turquoise moulded ware. Fabric: proto-stonepaste. Surfaces: interior has moulded design; turquoise glaze over interior and upper exterior. Diameter: 9 cm (17%). Provenance: NBHR, RH55. Drawing: 05/66. Parallel: for motif only, Bāmiyān, thirteenth century (Morgan 1994b: 320, no. 384).
9	Turquoise moulded ware. Fabric: proto-stonepaste. Surfaces: interior has moulded design; turquoise glaze all over. Diameter: *c*. 26 cm (2%). Provenance: Kūh-i Khāra. Drawing: 05/26. Parallel: for motif only, Bāmiyān, thirteenth century (Morgan 1994b: 321, no. 386).
10	Turquoise moulded ware. Fabric: proto-stonepaste. Surfaces: interior has moulded design; turquoise glaze all over. Diameter: *c*. 20 cm (3%). Provenance: NBHR, RH27. Drawing: 05/52.
11	Plain glazed ware. Fabric: proto-stonepaste. Surfaces: turquoise glaze interior and exterior. Diameter: 8 cm (8%). Provenance: NBHR, RH57. Drawing: 05/71.
12	Plain glazed ware. Fabric: proto-stonepaste. Surfaces: interior coated with decomposing turquoise glaze, exterior and under base unglazed but painted red-brown post-firing, "a common practice on the pottery of Afghanistan" (Fehérvári 2000: 153; noted as "occasional" by Morgan 1994b: 301). Diameter: 6.5 cm (40%). Provenance: WBJR, RH4, 1027. Drawing: 05/11. Parallel: common parallels in Merv from the twelfth to fourteenth century (David Gilbert pers. comm.).
13	Plain glazed ware. Fabric: proto-stonepaste. Surfaces: green-blue glaze interior and exterior. Diameter: 16 cm (7%). Provenance: NBHR, RH27. Drawing: 05/51. Parallel: form similar to Merv material dating from the thirteenth to fourteenth century (David Gilbert pers. comm.); east Iran, late twelfth to early thirteenth century (Morgan 1994b: 310, nos. 352–4—but not stonepastes).

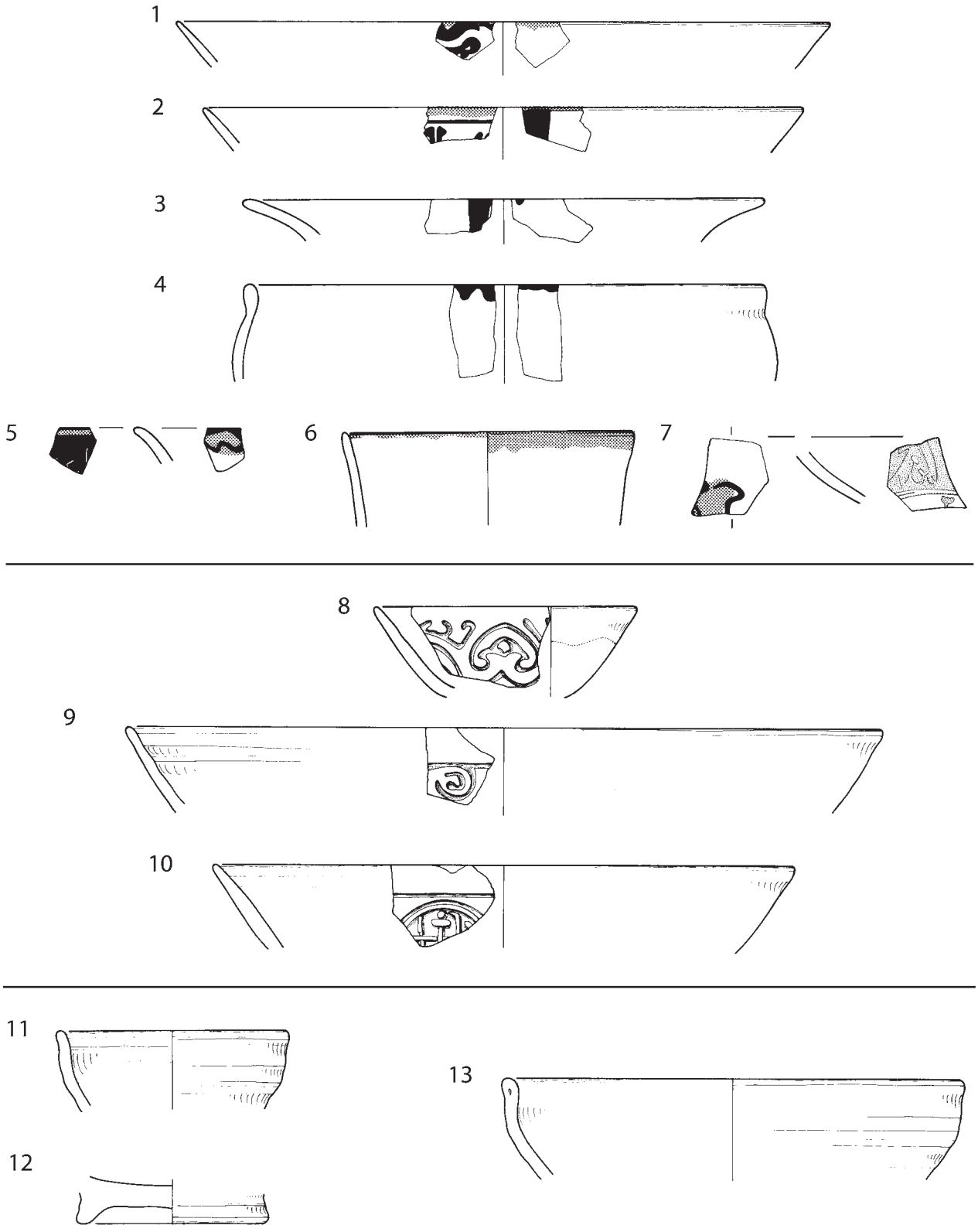


Fig. 4. Stonepaste underglaze-painted, moulded and plain glazed wares (scale 1:2).

TABLE 6. Descriptions of pottery illustrated in Fig. 5.

No.	Details
1	Polychrome incised ware. Fabric: WF6. Diameter: 14 cm (6%). Provenance: NBHR, RH55. Drawing: 05/67.
2	Polychrome incised ware. Fabric: WF5. Diameter: uncertain. Provenance: WBJR, RH12. Drawing: 05/43; surface chipped below rim.
3	Polychrome incised ware. Fabric: WF6. Diameter: 19 cm (13%). Provenance: NBHR, downslope from RH107. Drawing: 05/85.
4	Polychrome incised ware. Fabric: WF6. Diameter: 15 cm (20%). Provenance: NBHR, RH27 (spoil). Drawing: 05/95; dotted lines on the exterior mark edge of slip (higher) and glaze. Parallel: common rim shape from the ninth to thirteenth century at Merv (David Gilbert pers. comm.).
5	Polychrome incised ware. Fabric: WF6. Diameter: 18 cm (7%). Provenance: NBHR, RH27. Drawing: 05/50.
6	Polychrome incised ware. Fabric: WF6. Diameter: 17 cm (8%). Provenance: NBHR, RH18. Drawing: 05/47. Parallel: common rim shape from the ninth to thirteenth century at Merv (David Gilbert pers. comm.).
7	Polychrome incised ware. Fabric: WF6. Diameter: 18 cm (10%). Provenance: NBHR, RH28. Drawing: 05/57. Parallel: common rim shape from the ninth to thirteenth century at Merv (David Gilbert pers. comm.); for motif, Bāmiyān, late twelfth and early thirteenth century (Morgan 1994b: 314, no. 364).
8	Polychrome incised ware. Fabric: WF6. Diameter: 16 cm (12%). Provenance: NBHR, RH27 (from inner wall 2). Drawing: 05/55. Parallel: rim shape compares to examples from Merv in the eleventh to twelfth century (David Gilbert pers. comm.).
9	Polychrome incised ware. Fabric: WF6. Diameter: 7.5 cm (100%). Provenance: NBHR, RH57. Drawing: 05/70. Parallel: for central motif, Bāmiyān, late twelfth and early thirteenth century (Morgan 1994b: 314, no. 364).
10	Polychrome incised ware. Fabric: WF6. Diameter: 7.5 cm (45%). Provenance: NBHR, RH28. Drawing: 05/58. Parallel: for fish-scale motif, Bāmiyān, late twelfth and early thirteenth century (Morgan 1994b: 314, no. 364).
11	(Polychrome) incised ware. Fabric: WF6. Diameter: *c*. 10 cm (15%). Provenance: NBHR, RH200. Drawing: 05/90. The interior decoration is rather plain and not entirely typical of the ware; this example has been placed in this group on the basis of its fabric, but it is otherwise similar to Fig. 6, 6.
12	Polychrome incised ware, with *champlevé* decoration. Fabric: WF6. Diameter: 22 cm (24%). Provenance: NBHR, downslope from RH107. Drawing: 05/84.
13	Polychrome incised ware, with *champlevé* decoration. Fabric: WF6. Diameter: uncertain. Provenance: NBHR, RH32. Drawing: 05/61.
14	Polychrome incised ware, with *champlevé* decoration. Fabric: WF6. Diameter: 34 cm (5%). Provenance: WBJR, *c*. 150 m south of minaret. Drawing: 05/107. Dotted lines on the exterior mark edge of slip (higher) and glaze; dark printed stipple is used in this illustration only for drips of brown glaze, to distinguish between these and the brown of the exposed clay body.
15	Polychrome incised ware, with *champlevé* decoration. Fabric: WF6. Diameter: 12 cm (5%). Provenance: WBJR, *c*. 150 m south of minaret. Drawing: 05/106.

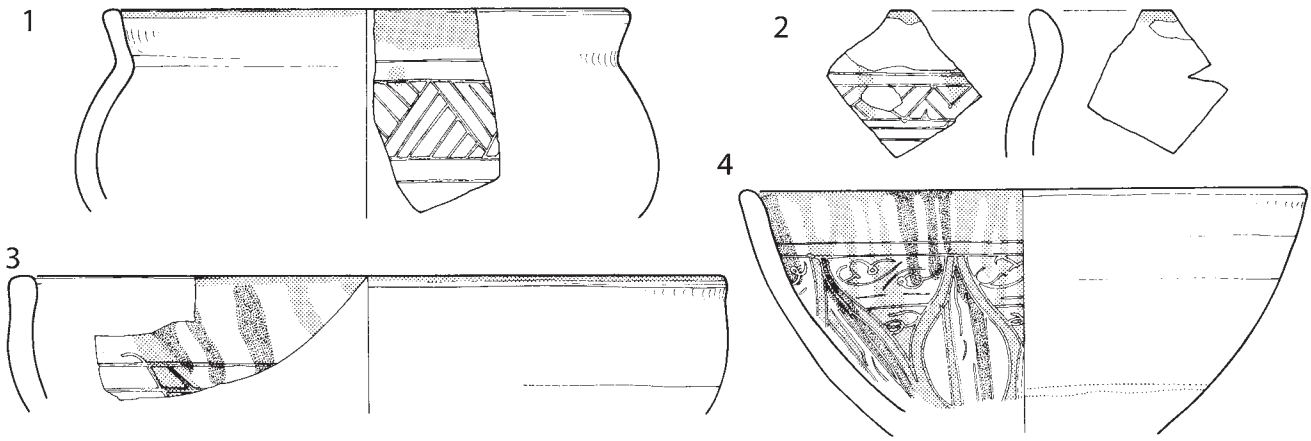


Fig. 5. Polychrome incised ware (scale 1:2).

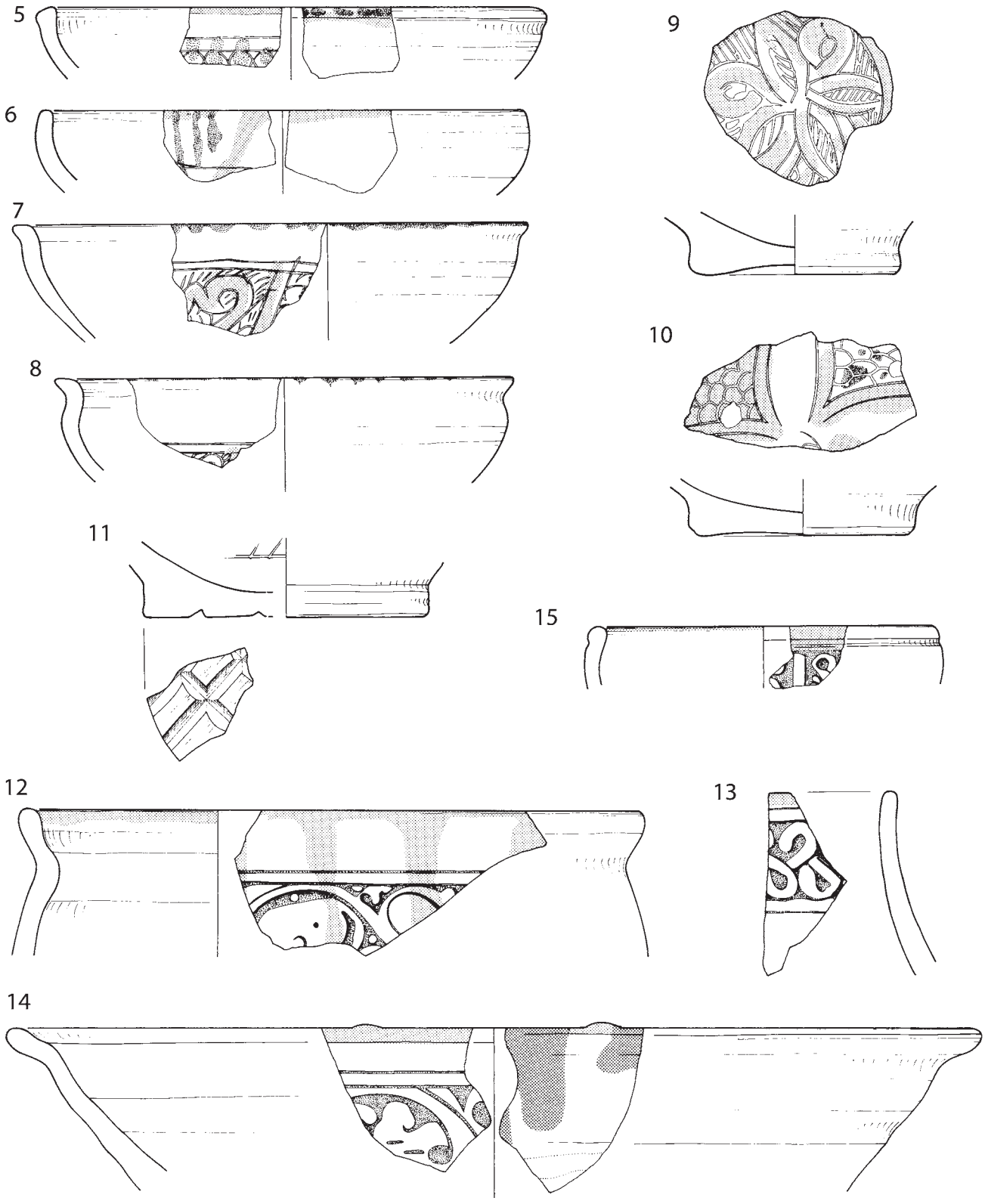


Fig. 5. (cont.).

evidence for more than one production centre of polychrome incised ware, and it may be that some vessels were manufactured at or near Jām, along with the WF5 monochrome glazed wares of group 7.

Polychrome incised ware (Table 6, 1–15; Fig. 5, 1–15)
First defined by Gardin from Bāmiyān, where it appears to have been produced, intact examples of this ware are widely available on the antiquities market under the label "Bamiyan sgraffito" or similar; the abundance of this pottery is visible testament to recent looting of Afghan sites.[43] The ware has been found at Sistan, Ghaznī (where the excavator termed it "the most typical product of the second half of the twelfth century"), Lashkarī Bāzār, and sites in the Bāmiyān area, and is among those described by Le Berre from Jām itself, where it is common.[44]

The ware almost always has fabric WF6 (see above), and is characterised by a distinctive decorative scheme. A cream slip covers the interior and the upper walls of the exterior, forming a layer clearly visible in thin section. A pattern was created either by incising narrow lines through this slip, or less commonly (at least at Jām) by cutting away areas of the surface to leave a cream design on a dark background (a technique often called *champlevé*). The surfaces then had spots and/or streaks of bottle green and dark brown dripped over the surface and the whole was covered with a clear glaze. Where the exterior is undecorated, the clear (lead) glaze usually covers it to a slightly lower level than the cream slip. The decorative scheme of this ware is highly consistent (the drawings use even stipple for green and hand stipple for brown). The forms are open or slightly restricted. One base (Fig. 5, 11) had a design deeply carved into the underside before firing.

Gardin and Scerrato enter into some debate about the date of the appearance of these (and related) wares, based around assumed disruptions of ceramic industries in the light of historical events. However, these are not necessarily parameters on which archaeological conclusions should be based, and until further stratigraphic data can be gathered, the question must remain open (see below). Watson's broader dating of the ware to the eleventh and twelfth centuries seems more prudent.[45]

Plain glazed wares (Table 7, 1–8; Fig. 6, 1–8)
Glazed wares with fabric WF5 are in general much less ornate than polychrome incised wares, being coated in a single colour (most commonly blue-green; also turquoise, green or yellow), and not always having the highest quality finish (Fig. 6, 1–6). A single sherd with fabric WF2 may indicate the existence of another centre producing glazed wares, or simply that a further clay source was occasionally used for such vessels, perhaps in the vicinity of Jām (Fig. 6, 7). The two samples tested petrographically fall into group 7, also suggested to be a production local to Jām.

The small lamp cannot be assigned to a fabric or ware group; as an intact object, no break was present which exposed the clay to view. The surfaces were heavily sooted, especially around the spout, and the interior was heavily encrusted with oily residue. Remarkably, this piece was found, still resting on a ledge inside a small, neatly plastered, domed alcove in one corner of a room that had been tunnelled into by looters (Fig. 6, 8).

IV.5. Moulded wares (Table 7, 9–14; Fig. 6, 9–14)

Moulded wares exhibit fabrics closest to the wheelmade series, a finer paste presumably being necessary to avoid obscuring the details of the design; their fabrics are therefore categorised with those of the wheelmade vessels. All recorded examples of moulded wares from Jām were closed forms such as water jugs or ewers, the upper and lower bodies being made separately in hemispherical moulds, a process that dictated the globular forms of the finished products. The exteriors are covered in elaborate designs, while the interiors are strongly marked with vertical finger marks where wet clay was pushed against the walls of the mould. Vessels are apparently always unslipped. The two body sections were joined by squashing together the edges of the two halves, often carelessly smearing and partly obscuring details of the design around the central band. Wheelmade necks (sometimes with secondary, incised decoration) and rims could then be

[43] Gardin 1957: 228–33, group A, series 1; Thomas and Gascoigne 2006.

[44] Gardin 1959: 32–33, group B; Scerrato 1959: 38; Gardin 1963: 10–11; Baker and Allchin 1991: 105–6, 154, fig. 4.28, nos. 132–38, 178–79, fig. 5.23; Sourdel-Thomine 2004: 44–45, group D, sherds 17–21, 23.

[45] Gardin 1957: 242–45; Scerrato 1959: 54, n. 37; Watson 2004: 268–71.

added.[46] Often vessels have broken along the joint of the two moulded sections.

Moulded wares feature in Wilkinson's ceramic typology from Nishapur, where they apparently became widespread during the late eleventh or early twelfth century.[47] Watson dates the production of moulded vessels in the eastern Iranian world to the twelfth and thirteenth centuries, though he points out that the date of their disappearance remains unclear.[48] Examples from Iran or Central Asia are also presented by Fehérvári.[49] Scerrato records the presence of small jugs with moulded decoration and grey fabrics at Ghaznī, while Le Berre's pottery group B from Jām comprises moulded wares of this type; they were also common at Lashkarī Bāzār.[50] A group from *c*. 40 km west of Balkh were dated by means of thermoluminescence, the earliest being from the eighth, and the latest from the eleventh century.[51] Information on fabrics in these publications is insufficient to effect a comparison with the corpus presented here, but it is certain that many centres produced such wares across a wide area. At Jām, moulded wares were found with a range of fabrics: of 29 recorded sherds, 16 were of WF2, and four each of WF4 and WF1, in addition to five pieces with fabric WF6 (more commonly associated with polychrome incised ware). The lack of moulded wares of WF5 is notable.

IV.6. Wheelmade coarse wares (Table 8, 1–6, and 9, 1–9; Figs. 7, 1–6 and 8, 1–9)

Few examples of, and little information on, coarse wares from the eastern Islamic world have been published to date, and so few remarks can be made on the typicality of the corpus presented here. The large basins represented by Figure 7, 3–6 are of note: David Gilbert draws parallels with late Sasanian forms from Merv.[52] The frequency with which similar forms appear at Jām, however, would seem to indicate a date in line with the majority of the corpus, i.e. eleventh to early thirteenth century (but see discussion below). Only three sherds of coarse wares with fabric WF6 were identified, two of which were diagnostics (Fig. 7, 1 and 2). The majority of pieces exhibit fabrics WF1 and WF2.

IV.7. Wheel- and handmade combination vessels (Table 10, 1–5; Fig. 9, 1–5)

Some of the largest forms recorded in 2005 were manufactured using a combination of wheel- and handmade techniques, with thrown rims and bases being connected by handmade body panels; the fabrics are commonly WF1 and WF2.[53] The first four illustrated examples are fragments of storage jars collected from the summit of Kūh-i Khāra, decorated with finger indents round the rim, stamped designs on the shoulder and combed waves around the base. A few body sherds, not illustrated here, had horizontal bands of applied clay with decorative finger indents, possibly to disguise joints between panels; although not reconstructable, these are certainly from the same type of vessel. A similar jar, though by no means an exact parallel, was uncovered at Ghaznī, and as far as can be distinguished from the published photograph, also comprised wheel-thrown base and body segments the joints of which may have been turned into decorative features.[54]

IV.8. Handmade coarse wares

The majority of Jām's coarse wares were handmade, of the HF-series fabrics; many are painted in elaborate geometrical designs. Le Berre considers such wares to have been produced within the family, based on their supposed rusticity, lack of finesse, and "village" rather than urban character, while Kalter states that similar pieces were "presumably produced by peasant women to supplement the family income".[55] It is possible that

46 Watson 2004: 106–15.

47 Wilkinson 1973: 291. Wilkinson also illustrates a clay animal head that is very similar to one from Jām, forming the spout of a moulded jug (1973: 325 and 354, no. 125; compare with Thomas *et al.* 2004: 109, fig. 19, "figurine head").

48 Watson 2004: 106.

49 Fehérvári 2000: 190–93.

50 Scerrato 1959: 39; Sourdel-Thomine 2004: 44; Gardin 1963: pls. 5–12.

51 Kalter 1997: 140.

52 David Gilbert pers. comm.

53 This of course creates problems for the handmade/wheelmade distinction within the fabric series used here, and since this is unavoidable, sherds have simply been designated as the most applicable fabric.

54 Scerrato 1959: 50, fig. 52.

55 Sourdel-Thomine 2004: 41–42, pottery group A; Kalter 1997: 141. Scerrato notes the presence of painted coarse

TABLE 7. Descriptions of pottery illustrated in Fig. 6.

No.	Details
1	Plain glazed ware. Fabric: WF5. Surfaces: turquoise glaze interior and exterior. Diameter: 7 cm (6%). Provenance: Kūh-i Khāra. Drawing: 05/27. Parallel: rim shape common at Merv throughout the ninth to twelfth centuries (David Gilbert pers. comm.).
2	Plain glazed ware. Fabric: WF5. Surfaces: blue-green glaze interior, unglazed exterior. Diameter: 6 cm (100%). Provenance: WBJR, RH4, 1027. Drawing: 05/9. Parallel: base shape similar to ninth- to twelfth-century examples from Merv (David Gilbert pers. comm.); east Iran, late twelfth to early thirteenth century (Morgan 1994b: 310, no. 354).
3	Plain glazed ware—lamp? Fabric: WF5. Surfaces: bright leaf green glaze interior, exterior and under base. Diameter: 3.3 cm (100%). Provenance: WBJR, RH4, 1027. Drawing: 05/10. Parallel: base of a lamp common at Merv in the eleventh to twelfth century (David Gilbert pers. comm.).
4	Plain glazed ware. Fabric: WF5. Surfaces: blue-green glaze all over. Diameter: 17 cm (10%). Provenance: in front of RH 201. Drawing: 05/109; thin-section group 7.
5	Plain glazed ware. Fabric: WF5. Surfaces: pale yellow glaze on interior, same on exterior but flakier and not covering base. Diameter: 3.3 cm (100%). Provenance: Kūh-i Khāra. Drawing: 05/34; edge of exterior glaze marked with dotted line. Parallel: similar to base shapes found at Merv, ninth to tenth century (David Gilbert pers. comm.).
6	Plain glazed ware. Fabric: WF5. Surfaces: interior has incised lines through cream slip, glazed light yellow, exterior uncoated. Diameter: 6 cm (100%). Provenance: WBJR, RH12. Drawing: 05/42. Parallel: Merv, dated to the eleventh to twelfth century (David Gilbert pers. comm.).
7	Plain glazed ware—lid. Fabric: WF2. Surfaces: coated in cream slip under pale yellow glaze on exterior and over rim; interior uncoated, striated. Diameter: *c*. 16 cm (7%). Provenance: WBJR, *c*. 200 m. south of minaret. Drawing: 05/105.
8	Plain glazed ware—lamp. Fabric: uncertain; the surface of the clay appears fine-grained and was fired, or had scorched, to a light grey-brown. Surfaces: dark green glaze over interior and upper exterior. Provenance: NBHR, RH201. Drawing: 05/98; object no. SF05/86; residue: sample no. S05/31 (analysis pending). Parallels: this lamp-form with the pinched spout is common in assemblages in the region from the ninth to thirteenth century, in particular twelfth-century lamps from Merv (David Gilbert pers. comm.). Similar to lamp in the Tareq Rajab Museum, Kuwait, of the eleventh to twelfth century (Fehérvári 2000: 134, no. 158). See Fig. 15C.
9	Moulded ware. Fabric: fine, grey-fired WF6. Provenance: NBHR, RH54. Drawing: 05/68. Parallel: this design has been noted on wasters from a kiln at Merv dated to the eighth to tenth century (David Gilbert pers. comm.).
10	Moulded ware. Fabric: WF6. Surfaces: decoration on body moulded, but spout incised. Provenance: NBHR, RH30. Drawing: 05/60.
11	Moulded ware. Fabric: WF6. Diameter: 6.5 cm (50%). Provenance: NBHR, RH34, surface. Drawing: 05/63. Parallel: "endless knot" motif indicates origin in Transoxiana (Kalter 1997: 140, 141, fig. 235).
12	Moulded ware. Fabric: WF6. Provenance: NBHR, RH120, surface. Drawing: 05/86. Parallel: for face motif, eastern Iranian world "Reportedly from Ghanzi [sic], Afghanistan", twelfth to thirteenth century (Watson 2004: 141, cat. Af.3). See Fig. 15D.
13	Moulded ware. Fabric: WF2. Provenance: Kūh-i Khāra. Drawing: 05/33. Parallels: possibly ninth- to twelfth-century example (Kalter 1997: 144, fig. 244 (left), but difficult to see detail in published picture).
14	Moulded ware. Fabric: WF4. Surfaces: incised decoration on neck in addition to moulded body. Provenance: NBHR, RH137. Drawing: 05/104.

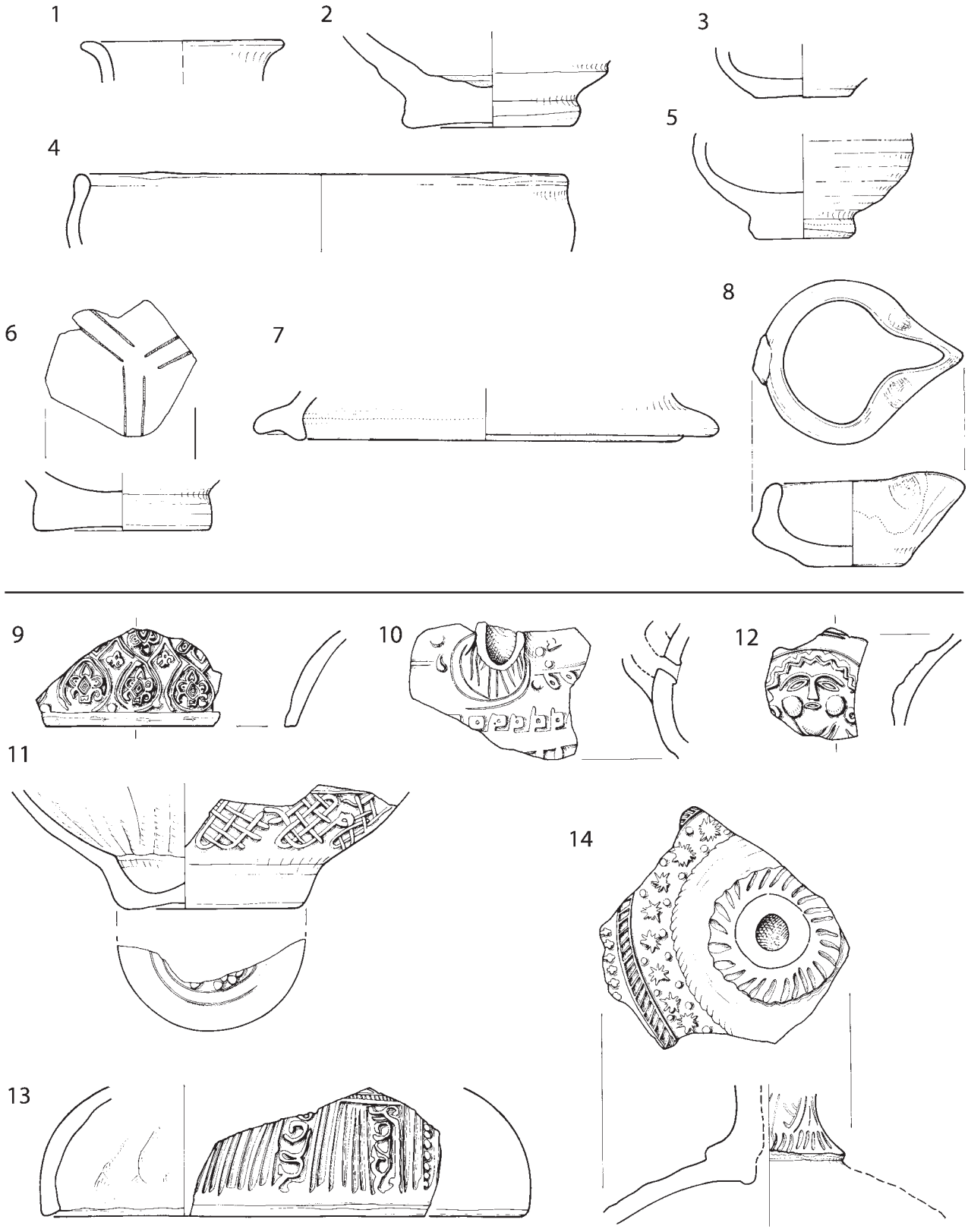


Fig. 6. Plain glazed wares and unglazed moulded wares (scale 1:2).

TABLE 8. Descriptions of pottery illustrated in Fig. 7.

No.	Details
1	Wheelmade ware. Fabric: WF6. Surfaces: grey-fired, uncoated. Diameter: 2.5 cm (100%). Provenance: NBHR, downslope from RH105. Drawing: 05/82.
2	Wheelmade ware. Fabric: WF6. Surfaces: uncoated. Diameter: 7 cm (60%). Provenance: NBHR, upslope from RH94. Drawing: 05/93. Parallels: such shapes are seen at Merv from the ninth century onwards, while the raised interior has parallels in the twelfth century (David Gilbert pers. comm.).
3	Wheelmade ware. Fabric: WF2. Surfaces: uncoated. Diameter: >50 cm (<7%). Provenance: NBHR, sherd scatter from outcrop above RH200. Drawing: 05/88. Parallels: similar to late Sasanian rims from Merv region (David Gilbert pers. comm.).
4	Wheelmade ware. Fabric: WF1. Surfaces: uncoated. Diameter: 39 cm (9%). Provenance: NBHR, sherd scatter from outcrop above RH200. Drawing: 05/87. Parallels: similar rim shapes are found in the eleventh- to twelfth-century assemblage from Merv (David Gilbert pers. comm.).
5	Wheelmade ware. Fabric: WF2. Surfaces: uncoated. Diameter: >50 cm (<8%). Provenance: NBHR, RH16. Drawing: 05/44. Parallels: similar to late Sasanian rims from the Merv region (David Gilbert pers. comm.).
6	Wheelmade ware. Fabric: WF2. Surfaces: possible self-slip; repair hole drilled through wall. Diameter: 28 cm (4%). Provenance: NBHR, RH27. Drawing: 05/54. Parallels: similar to late Sasanian rims from the Merv region (David Gilbert pers. comm.).

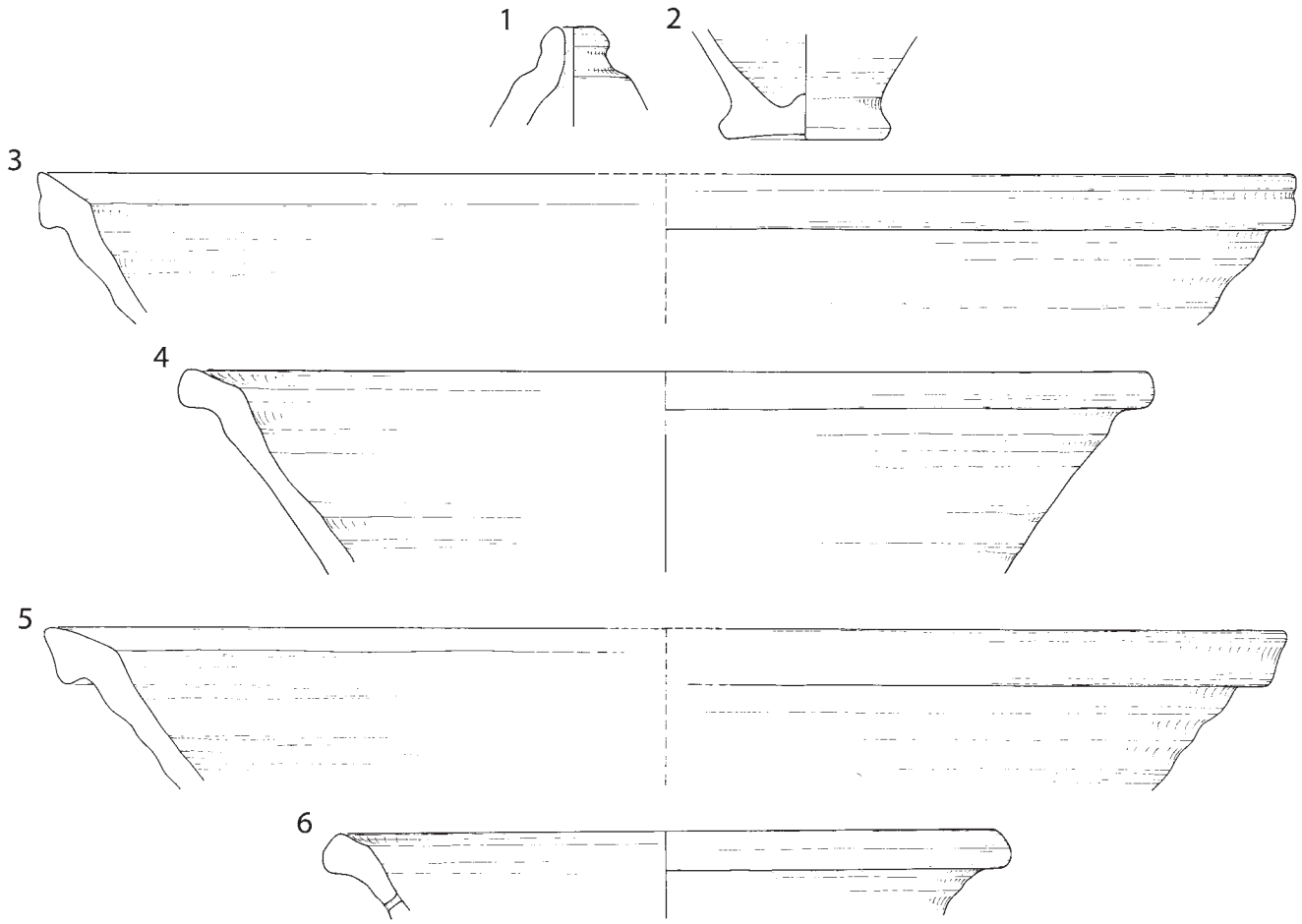


Fig. 7. Unglazed wheelmade wares (scale 1:3).

these vessels, with their coarser clay mixes, were the result of domestic production rather than of the activities of professional workshops. However, the relative uniformity of form and decoration perhaps argues against this, and the coarser fabric mixes simply better suit the technological requirements of handmade pottery. In addition, in particular the wares painted in black over a cream slip include a range of elaborate forms, square-bodied, spouted, filtered or with cut-away sections, that presumably required some skill to produce. They certainly do not represent a purely functional ceramic tradition.

Geometrically painted wares (Tables 11, 1–9; 12, 1–5; 13, 1–5 and 14, 1–11; Figs. 10, 1–9; 11, 1–5; 12, 1–5 and 13, 1–11)

The most common ware in this group is characterised by a thick, polished red slip overlaid with black-painted designs (Fig. 10, 1–Fig. 11, 3). Forms are nearly all open or restricted, cooking pots and coarse bowls, but a couple of jug or jar forms are also illustrated (Fig. 11, 2–3). Cooking pots[56] (Fig. 10, 1–7, also Fig. 11, 4) are slipped on the exterior and over the rim only, the polishing broadly restricted to the top of the rim and upper exterior wall; the decoration is also on the top of the rim and over the exterior. Some vessels in the group have bands of cream pigment highlighting sections of the decoration, or cream spots and drips, in some cases perhaps accidental (see Fig. 11, 4–Fig. 12, 3). A small number of similar vessels were recorded where the black decoration was applied straight onto the unslipped body (Fig. 12, 4–Fig. 13, 1).

Related to the above by means of their decorative scheme is a group of sherds, painted with black geometric designs over a cream slip. The forms are commonly closed vessels, in particular small flasks or jugs, and are often irregular, elaborate and difficult to reconstruct from the surviving fragments; a number of pieces come from straight-sided or cubic forms for which no parallel has been found. Some sherds appear to be parts of long spouts or lips; similar long-spouted vessels are published by Fehérvári and attributed an origin in Central Asia. This ware corresponds to Le Berre's ceramic group A (see Fig. 13, 2–9).[57] Single examples of variant wares, one painted in red over the cream slip, and another in both red and black over a cream-slipped exterior, with the interior of the neck coated in red slip, are also illustrated (Fig. 13, 10–11).

Handmade plain wares (Table 15, 1–6; Fig. 14, 1–6)

Less common were undecorated handmade wares. The forms of these in general are broadly similar to those of the painted wares, with Figure 14, 4, for example, being very close to Figure 10, 4.

V. DISCUSSION

V.1. Characterisation of the assemblage from Jām

The majority of ceramics recorded from Jām were surface finds, picked up by team members but not resulting from a methodical sampling strategy; the assemblage is thus skewed in favour of glazed wares, which comprise 30% of the material so far recorded. The extent of this bias can be illustrated by a comparison of two sub-groups of pottery analysed in 2005: the assemblage from the 2003 cleaning of RH4 on the WBJR, during which all sherds were retained (context 1027); and the surface collection from Kūh-i Khāra. The ceramic material from 1027 is dominated by sherds with fabrics from the wheelmade series (108 sherds out of 159, 86 of these being WF1 and WF2), with most of the remainder being handmade wares (45 sherds). Stonepastes and proto-stonepastes are repre-

wares at Ghaznī, but his illustrated example (1959: 45, fig. 36) does not bear much resemblance to the Jām wares; 1959: 51, fig. 57 and 52, fig. 58 are closer. David Gilbert (pers. comm.) states that: "Painted wares such as these are rare within the Merv assemblage, probably because of the perceived 'rural' nature of this pottery style and the urban character of the Merv pottery. Black- and red-painted decoration on a cream slip is, however, common in the central Asian region from the ninth to eleventh centuries (Kalter 1997). Many of the pieces from Jām display decorative elements, and choice of colours and patterns, more commonly associated with glazed wares of the tenth and eleventh centuries from Afrasiab or Nishapur. Furthermore, many of the rim forms have parallels to the Merv material of the ninth to twelfth centuries (examples include Fig. 10, 2, 3, 5, 8 and 9; Fig. 11, 2 and 4; Fig. 12, 1; Fig. 13, 7 and 8). Some of this assemblage may be of a later date, since the fourteenth century in Iran and Syria saw the introduction of rough handmade wares with simple geometric painted patterns (Watson 2004)."

56 Five fragments of steatite cooking vessels were also found at Jām: see Gascoigne in press, fig. 1.

57 Fehérvári 2000: 195–96, nos. 249–51; compare with Thomas *et al.* 2004: 109, SF1, "scoop"; Sourdel-Thomine 2004: 41–42.

TABLE 9. Descriptions of pottery illustrated in Fig. 8.

No.	Details
1	Wheelmade ware. Fabric: WF2. Surfaces: uncoated. Diameter: 20 cm (4%). Provenance: NBHR, RH203. Drawing: 05/99. Parallels: ninth- to tenth-century rim forms from Merv (David Gilbert pers. comm.).
2	Wheelmade ware. Fabric: WF4. Surfaces: uncoated, cream-fired. Diameter: 16 cm (5%). Provenance: WBJR, RH4, 1027. Drawing: 05/6. Parallels: tenth- to twelfth-century rim forms from Merv (David Gilbert pers. comm.).
3	Wheelmade ware. Fabric: WF2. Surfaces: possible cream slip interior and exterior. Diameter: 12 cm (9%). Provenance: WBJR, RH4, 1027. Drawing: 05/103. Parallels: ninth- to twelfth-century rim forms from Merv (David Gilbert pers. comm.).
4	Wheelmade ware. Fabric: WF1. Surfaces: cream-fired. Diameter: 11 cm (30%). Provenance: Kūh-i Khāra. Drawing: 05/22.
5	Wheelmade ware. Fabric: WF2. Surfaces: interior and exterior red slip. Diameter: 11 cm (14%). Provenance: NBHR, RH27, spoil. Drawing: 05/96. Parallels: common rim form throughout the ninth to thirteenth century in southern Turkmenistan (David Gilbert pers. comm.).
6	Wheelmade ware. Fabric: WF2. Surfaces: cream-fired. Diameter: 11 cm (15%). Provenance: Kūh-i Khāra. Drawing: 05/21.
7	Wheelmade ware. Fabric: WF2. Surfaces: strange variation in surface colour, perhaps indicating presence of fugitive decoration; below the dotted line the surface is cream, above, pink. Black stripe round neck. Diameter: 10 cm (30%). Provenance: WBJR, RH4, 1027. Drawing: 05/7.
8	Wheelmade ware. Fabric: WF2. Surfaces: uncoated. Diameter: 7 cm (60%). Provenance: Khar Khūj. Drawing: 05/101. This form, and that of Fig. 8, 9, is highly distinctive, being sliced vertically on one side from the rim to mid-way down the body. This was done to the vessels at the leather-hard stage, before firing, and has removed a section of the rim-flange without creating a lip, spout or opening, or substantially altering the form in any way. The purpose of these vessels remains unclear.
9	Wheelmade ware. Fabric: WF1. Surfaces: uncoated. Diameter: 10 cm (40%). Provenance: Khar Khūj. Drawing: 05/100. See Table 9, 8 above for details of form.

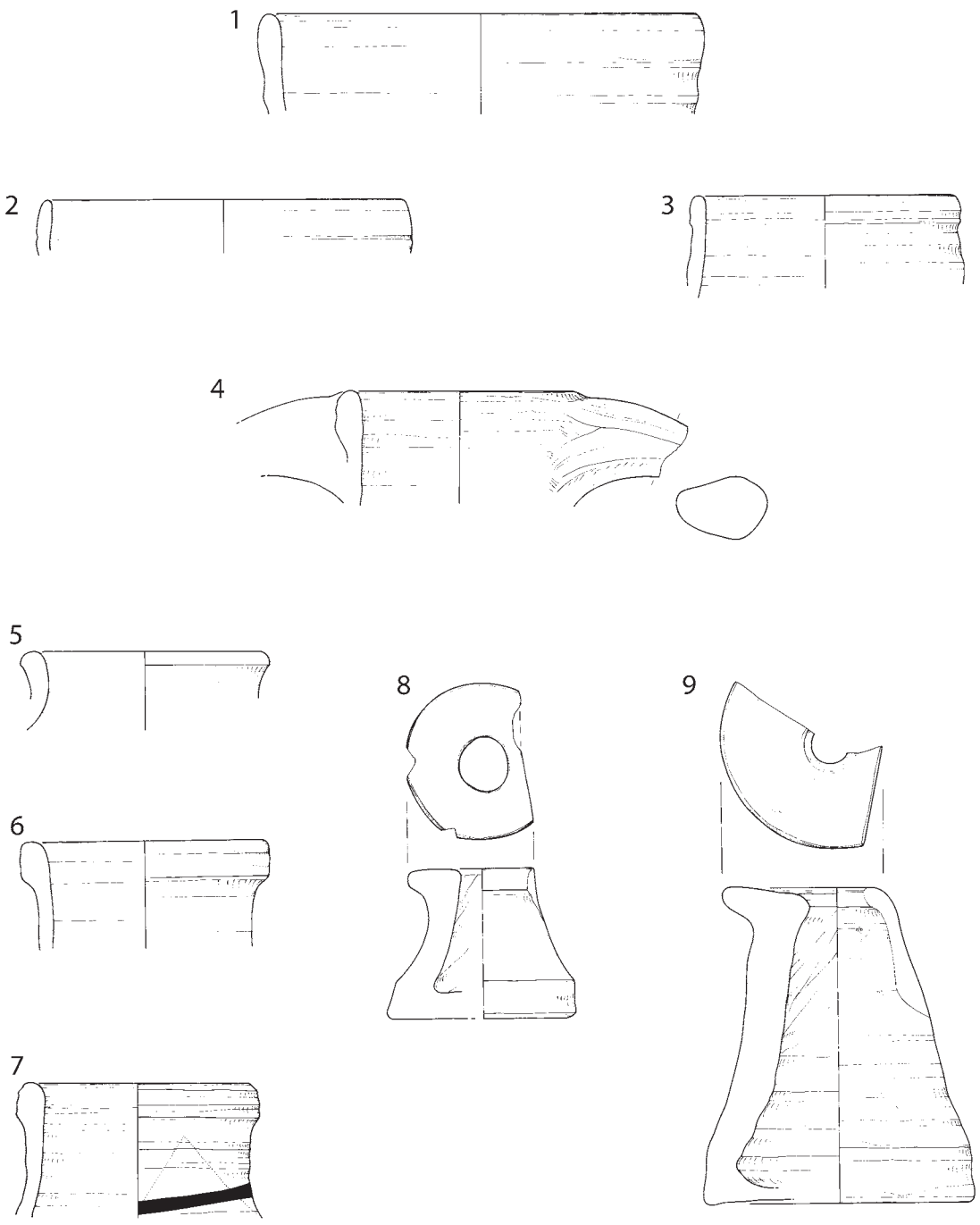


Fig. 8. Unglazed wheelmade wares, cont. (scale 1:3).

TABLE 10. Descriptions of pottery illustrated in Fig. 9.

No.	Details
1	Wheel- and handmade combination ware. Fabric: WF1. Surfaces: uncoated, stamped decoration on shoulder (marked in outline on vessel drawing, but design drawn flat below for clarity). Diameter: 26 cm (22%). Provenance: Kūh-i Khāra. Drawing: 05/12. Parallels: rim similar to examples in the late Sasanian and early Islamic assemblages at Merv (David Gilbert pers. comm.).
2	Wheel- and handmade combination ware. Fabric: WF1. Surfaces: uncoated. Diameter: 26 cm (19%). Provenance: Kūh-i Khāra. Drawing: 05/13.
3	Wheel- and handmade combination ware. Fabric: WF2 (this sherd from handmade section of vessel). Surfaces: uncoated, edges of two stamps on exterior. Provenance: Kūh-i Khāra. Drawing: 05/15.
4	Wheel- and handmade combination ware. Fabric: WF1. Surfaces: uncoated, combed waves around lower wall. Diameter: 22 cm (50%). Provenance: Kūh-i Khāra. Drawing: 05/14. Parallels: base and decoration similar to examples in the late Sasanian and early Islamic assemblages at Merv (David Gilbert pers. comm.).
5	Wheel- and handmade combination ware. Fabric: WF1. Surfaces: worn, but traces of cream slip on the exterior. Diameter: 10 cm (42%). Provenance: WBJR, RH13. Drawing: 05/97.

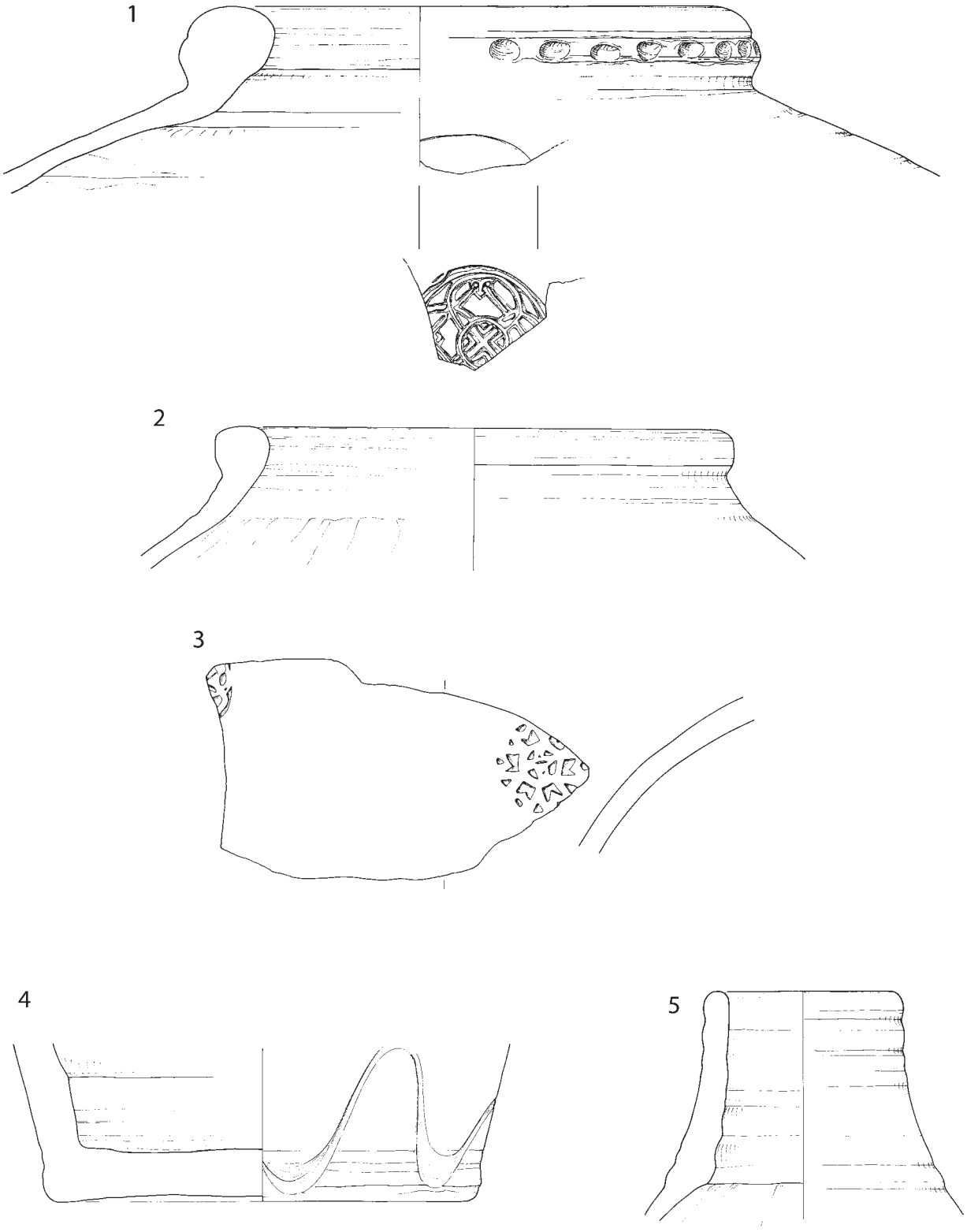


Fig. 9. Wheel- and handmade and combination ware (scale 1:3).

TABLE 11. Descriptions of pottery illustrated in Fig. 10.

No.	Details
1	Handmade geometrically painted ware: black on red slip. Fabric: HF5. Diameter: 26 cm (16%). Provenance: NBHR, RH18, surface spoil. Drawing: 05/45.
2	Handmade geometrically painted ware: black on red slip. Fabric: HF5. Diameter: 10 cm (35%). Provenance: Kūh-i Khāra. Drawing: 05/16.
3	Handmade geometrically painted ware: black on red slip. Fabric: HF2. Diameter: *c*.12 cm (1%). Provenance: Kūh-i Khāra. Drawing: 05/18; surface lost on top of rim.
4	Handmade geometrically painted ware: black on red slip. Fabric: HF1? Fired or scorched black, worn and heavily sooted. Diameter: *c*. 16 cm (10%). Provenance: NBHR, RH19. Drawing: 05/48.
5	Handmade geometrically painted ware: black on red slip. Fabric: HF2. Diameter: 15 cm (12%). Provenance: WBJR, RH4, 1027. Drawing: 05/2.
6	Handmade geometrically painted ware: black on red slip. Fabric: HF2. Diameter: 26 cm (15%). Provenance: NBHR, RH22. Drawing: 05/49.
7	Handmade geometrically painted ware: black on red slip. Fabric: HF1. Surfaces: traces of black rim band but too faded to make out edges. Diameter: 24 cm (12%). Provenance: NBHR, RH58. Drawing: 05/74.
8	Handmade geometrically painted ware: black on red slip. Fabric: HF2. Surfaces: interior unslipped. Diameter: 29 cm (9%). Provenance: NBHR, RH18. Drawing: 05/46.
9	Handmade geometrically painted ware: black on red slip. Fabric: HF1, more coarsely potted than usual. Surfaces: slipped interior and exterior. Diameter: 13 cm (13%). Provenance: Kūh-i Khāra. Drawing: 05/17.

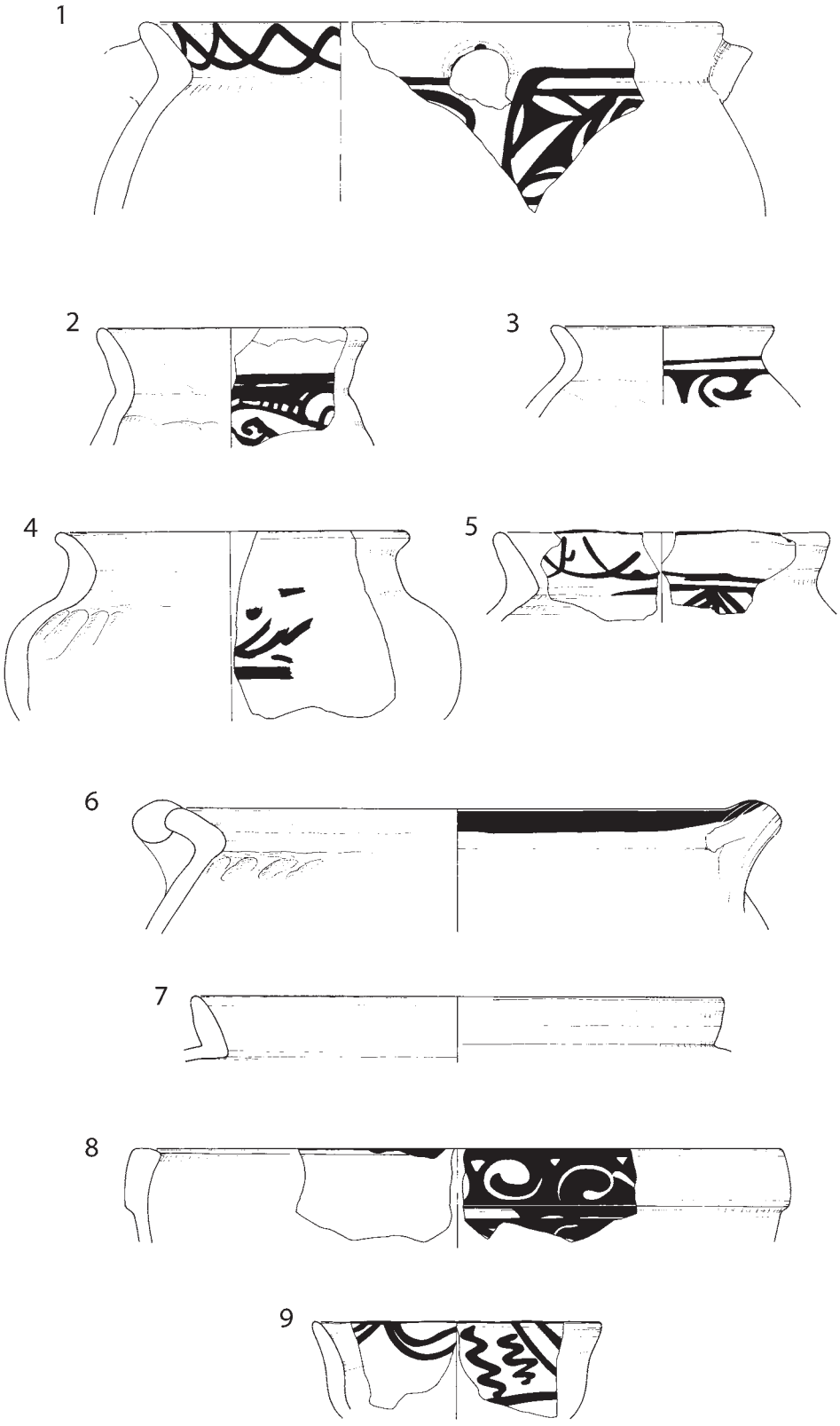


Fig. 10. Handmade painted wares (scale 1:3).

TABLE 12. Descriptions of pottery illustrated in Fig. 11.

No.	Details
1	Handmade geometrically painted ware: black on red slip. Fabric: HF1. Surfaces: exterior unslipped. Diameter: >50 cm (<10%). Provenance: NBHR, RH28. Drawing: 05/56.
2	Handmade geometrically painted ware: black on red slip. Fabric: HF5. Surfaces: slipped exterior only. Diameter: 7 cm (20%). Provenance: NBHR, RH58. Drawing: 05/72.
3	Handmade geometrically painted ware: black on red slip. Fabric: HF2. Provenance: WBJR, RH4, 1027. Drawing: 05/5; compare with Fig. 13, 2 below.
4	Handmade geometrically painted ware: black and cream on red slip. Fabric: HF1. Surfaces: tiny cream spot on exterior, perhaps accidental. Diameter: 16 cm (5%). Provenance: NBHR, RH58. Drawing: 05/73.
5	Handmade geometrically painted ware: black and cream on red slip. Fabric: HF2. Surfaces: cream on top of rim, slip on both interior and exterior; repair hole through upper wall. Diameter: *c*. 40 cm (12%). Provenance: NBHR, RH57. Drawing: 05/69.

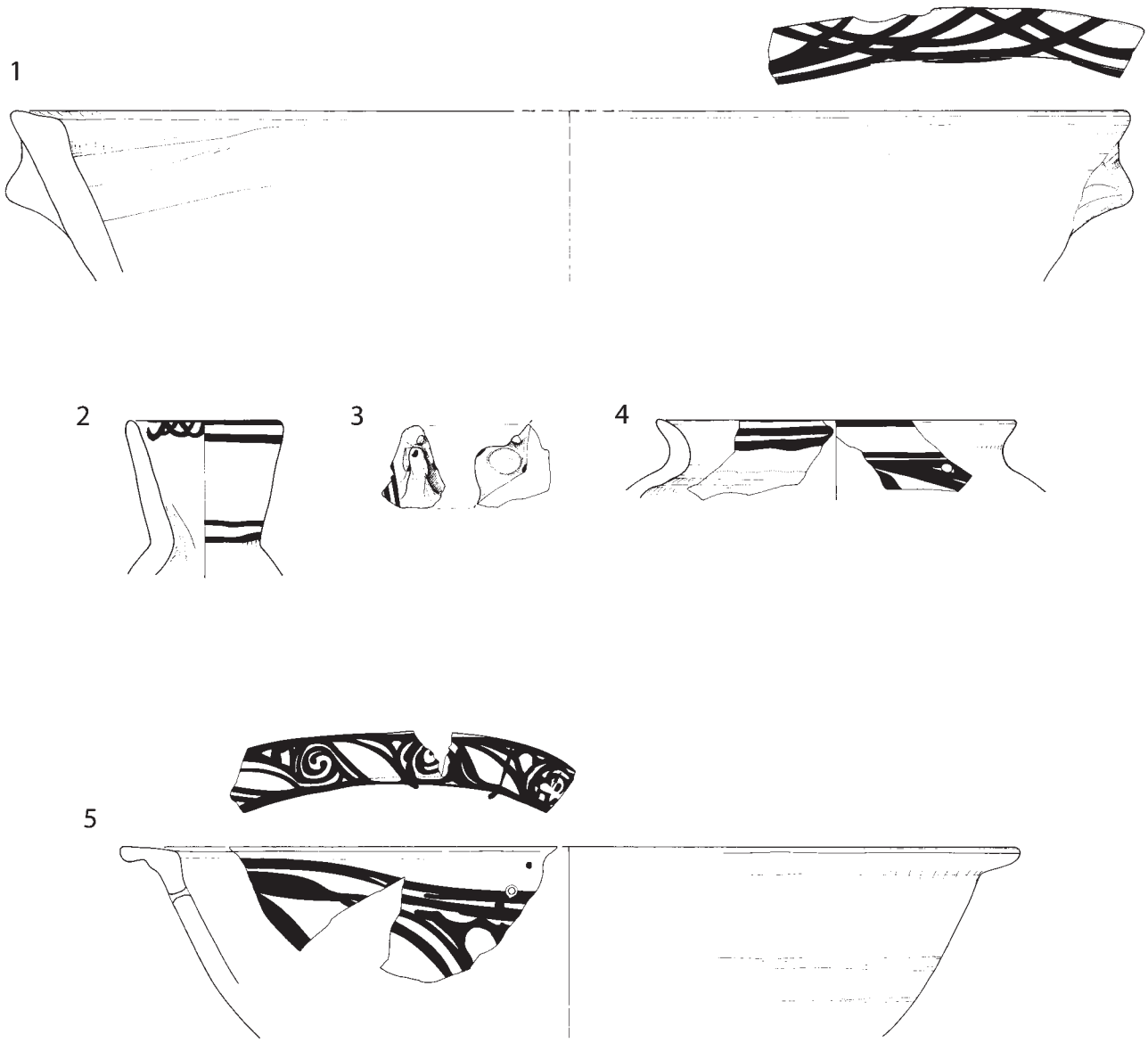


Fig. 11. Handmade painted wares, cont. (scale 1:3).

TABLE 13. Descriptions of pottery illustrated in Fig. 12.

No.	Details
1	Handmade geometrically painted ware: black and cream on red slip. Fabric: HF2. Surfaces: broad cream stripe on upper exterior, down to upper horizontal black band at carination. Diameter: *c*. 28 cm (2%). Provenance: WBJR, *c*. 200 m. south of minaret. Drawing: 05/108.
2	Handmade geometrically painted ware: black and cream on red slip. Fabric: HF1. Surfaces: slipped interior and exterior; tiny, presumably accidental, spatters of white on interior; repair hole. Diameter: 50 cm (9%). Provenance: NBHR, RH61. Drawing: 05/76.
3	Handmade geometrically painted ware: black and cream on red slip. Fabric: HF2. Surfaces: slipped interior only, uneven cream band around interior of rim. Diameter: 24 cm (7%). Provenance: NBHR, RH67, surface. Drawing: 05/77.
4	Handmade geometrically painted ware: black on unslipped. Fabric: HF2. Surfaces: top of rim slightly polished. Diameter: 27 cm (2%). Provenance: WBJR, RH4, 1027. Drawing: 05/4.
5	Handmade geometrically painted ware: black on unslipped. Fabric: HF1. Surfaces: interior of rim slightly polished. Diameter: 30 cm (10%). Provenance: WBJR, RH4, 1027. Drawing: 05/1.

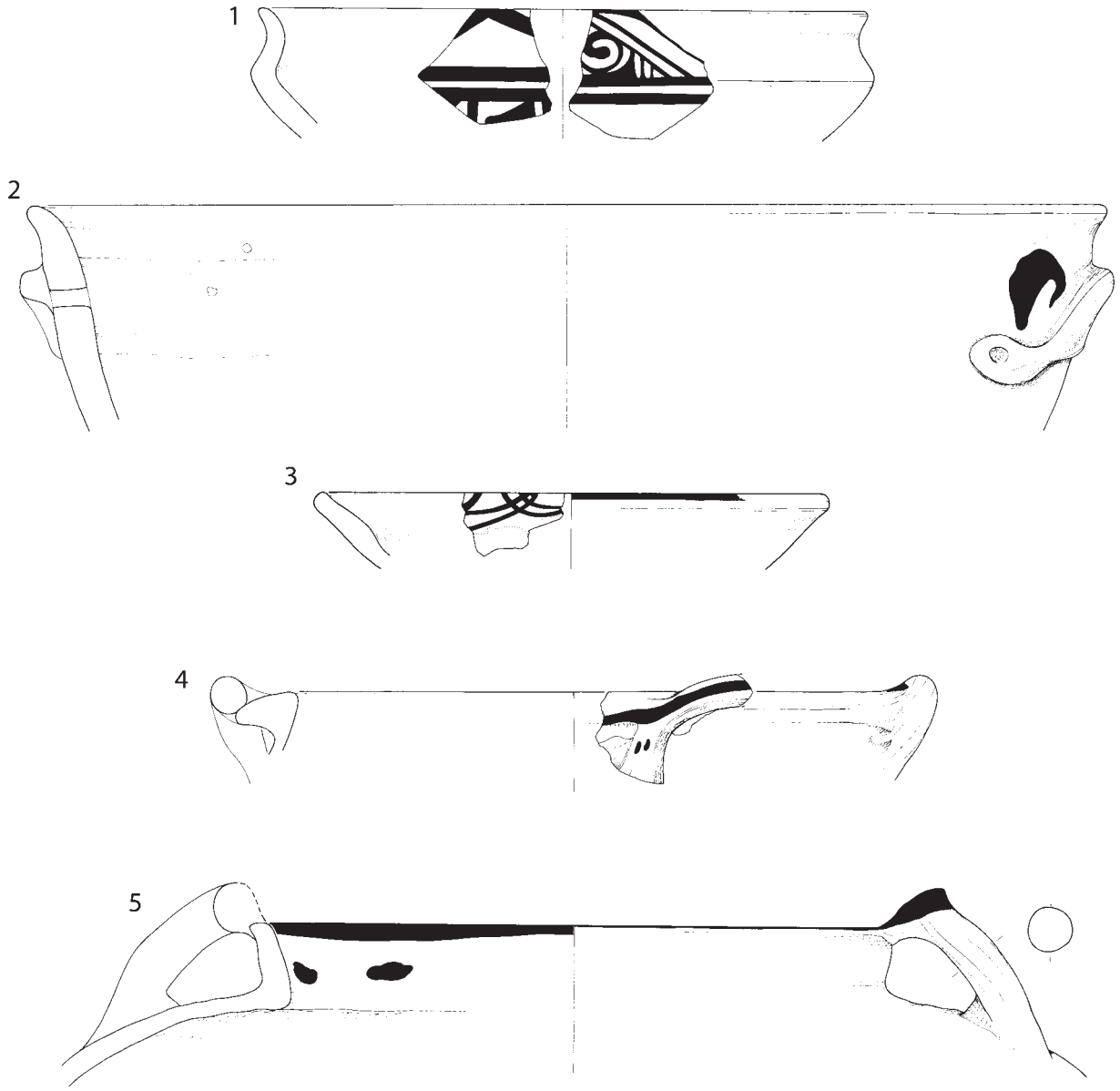


Fig. 12. Handmade painted wares, cont. (scale 1:3).

TABLE 14. Descriptions of pottery illustrated in Fig. 13.

No.	Details
1	Handmade geometrically painted ware: black on unslipped. Fabric: HF2. Surfaces: black decoration applied over poorly finished surfaces, interior coated with black oily residue. Diameter: 42 cm (3%). Provenance: Kūh-i Khāra. Drawing: 05/20; chipped on right edge of exterior, below dotted line.
2	Handmade geometrically painted ware: black on cream slip. Fabric: HF1. Diameter: 7.5 cm (100%). Provenance: NBHR, RH79. Drawing: 05/79, compare with Fig. 11, 3 above. Parallel: for applied bump at top of handle, ninth to eleventh century, north Afghanistan or Central Asia (Kalter 1997: 150–51, fig. 268, centre and right).
3	Handmade geometrically painted ware: black on cream slip. Fabric: HF1; shows traces of join to separate section at shoulder. Surfaces: interior slipped down to filter. Provenance: Kūh-i Khāra, Drawing: 05/19.
4	Handmade geometrically painted ware: black on cream slip. Fabric: HF2. Surfaces: upper interior slipped, drips running down. Provenance: NBHR, upslope from RH94. Drawing: 05/94.
5	Handmade geometrically painted ware: black on cream slip. Fabric: HF3. Provenance: NBHR, 8 m E of RH68. Drawing: 05/78. Parallel: for long-spouted form, ninth to eleventh century, north Afghanistan or Central Asia (Kalter 1997: 152, fig. 271, centre).
6	Handmade geometrically painted ware: black on cream slip. Fabric: HF5. Surfaces: interior unslipped. Diameter: 5 cm (25%). Provenance: NBHR, RH84. Drawing: 05/80.
7	Handmade geometrically painted ware: black on cream slip. Fabric: HF4. Surfaces: slipped interior and exterior. Provenance: NBHR, RH37. Drawing: 05/64; this piece does not curve, as it would if from a bowl rim.
8	Handmade geometrically painted ware: black on cream slip. Fabric: HF3. Provenance: NBHR, RH60. Drawing: 05/75.
9	Handmade geometrically painted ware: black on cream slip. Fabric: HF2. Surfaces: interior unslipped. Provenance: NBHR, RH38. Drawing: 05/65.
10	Handmade geometrically painted ware: red on cream slip. Fabric: HF2. Surfaces: red-painted design over cream-slipped exterior, slip also over interior of neck down to filter. Provenance: NBHR, RH29. Drawing: 05/59.
11	Handmade geometrically painted ware: black and red on red and cream slip. Fabric: HF2. Surfaces: exterior cream-slipped and painted with broad red bands and black design; interior red-slipped. Provenance: NBHR, RH96. Drawing: 05/92.

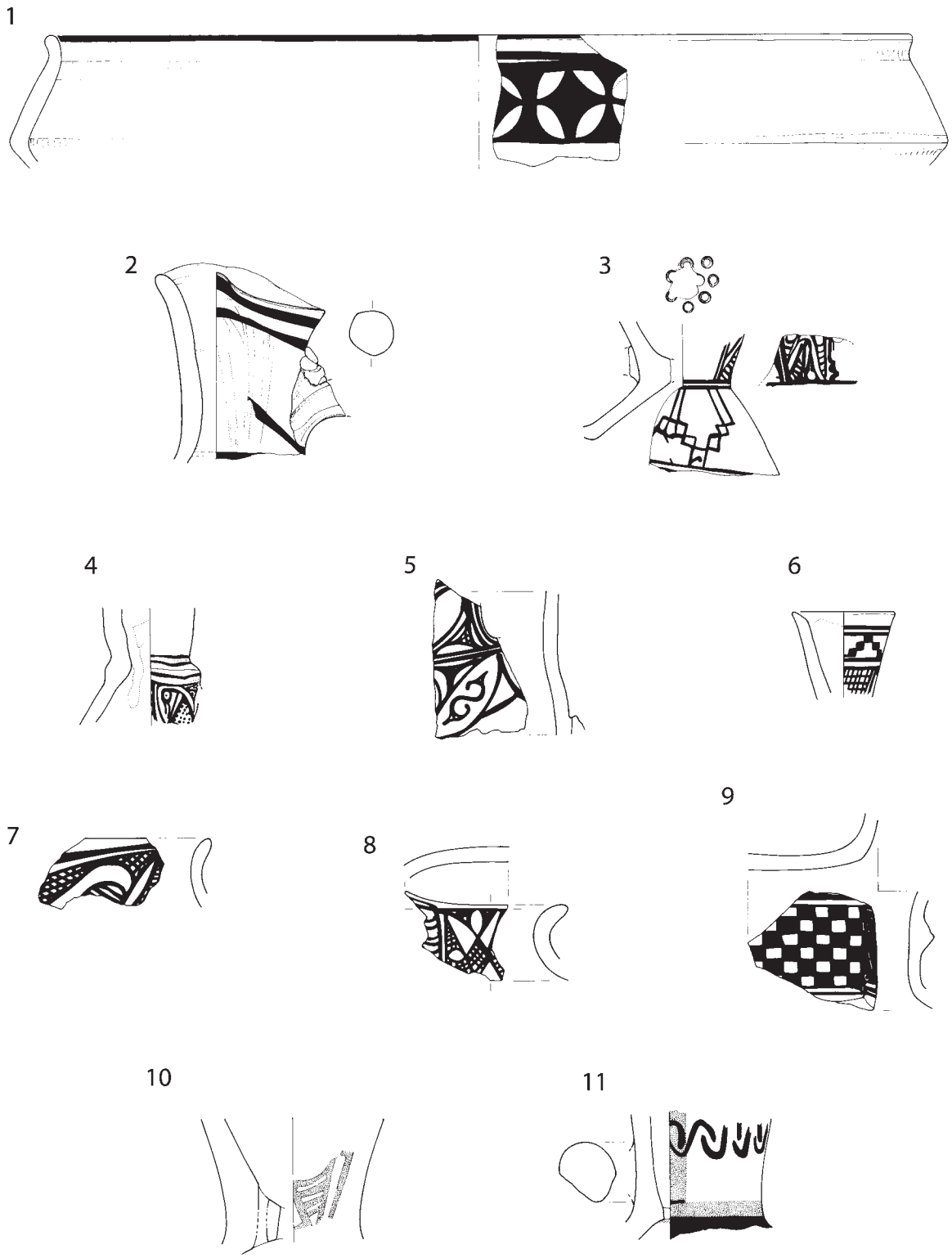


Fig. 13. Handmade painted wares, cont. (scale 1:3).

TABLE 15. Descriptions of pottery illustrated in Fig. 14.

No.	Details
1	Handmade plain ware. Fabric: HF5. Surfaces: cream-slipped interior and exterior, all surfaces wiped when wet. Diameter: 41 cm (14%). Provenance: NBHR, RH104, spoil. Drawing: 05/81.
2	Handmade plain ware. Fabric: HF1. Surfaces: uncoated, interior smoothed by wiping, exterior roughly moulded; repair hole through wall. Diameter: 26 cm (5%). Provenance: WBJR, RH4, 1027. Drawing: 05/3.
3	Handmade plain ware. Fabric: HF2. Surfaces: uncoated. Diameter: 16 cm (12%). Provenance: NBHR, RH33. Drawing: 05/62. Parallels: similar rim shapes are found in the ninth to tenth century at Merv (David Gilbert pers. comm.).
4	Handmade plain ware. Fabric: HF3. Surfaces: uncoated, heavily sooted exterior. Diameter: 9 cm (25%). Provenance: NBHR, RH27. Drawing: 05/53.
5	Handmade plain ware. Fabric: HF3. Surfaces: unslipped, but cream accretions over interior and exterior surfaces. Diameter: 16 cm (25%). Provenance: WBJR, RH4, 1027. Drawing: 05/102; thin-section group 2.
6	Handmade plain ware—drainpipe? Fabric: HF3. Surfaces: uncoated. Diameter: 10 cm (50%). Provenance: NBHR, upslope from RH105. Drawing: 05/83. Parallels: forms from workshops at Merv, Gyaur Kala—possibilities other than a drainpipe include use within small industrial workshops (David Gilbert pers. comm.).

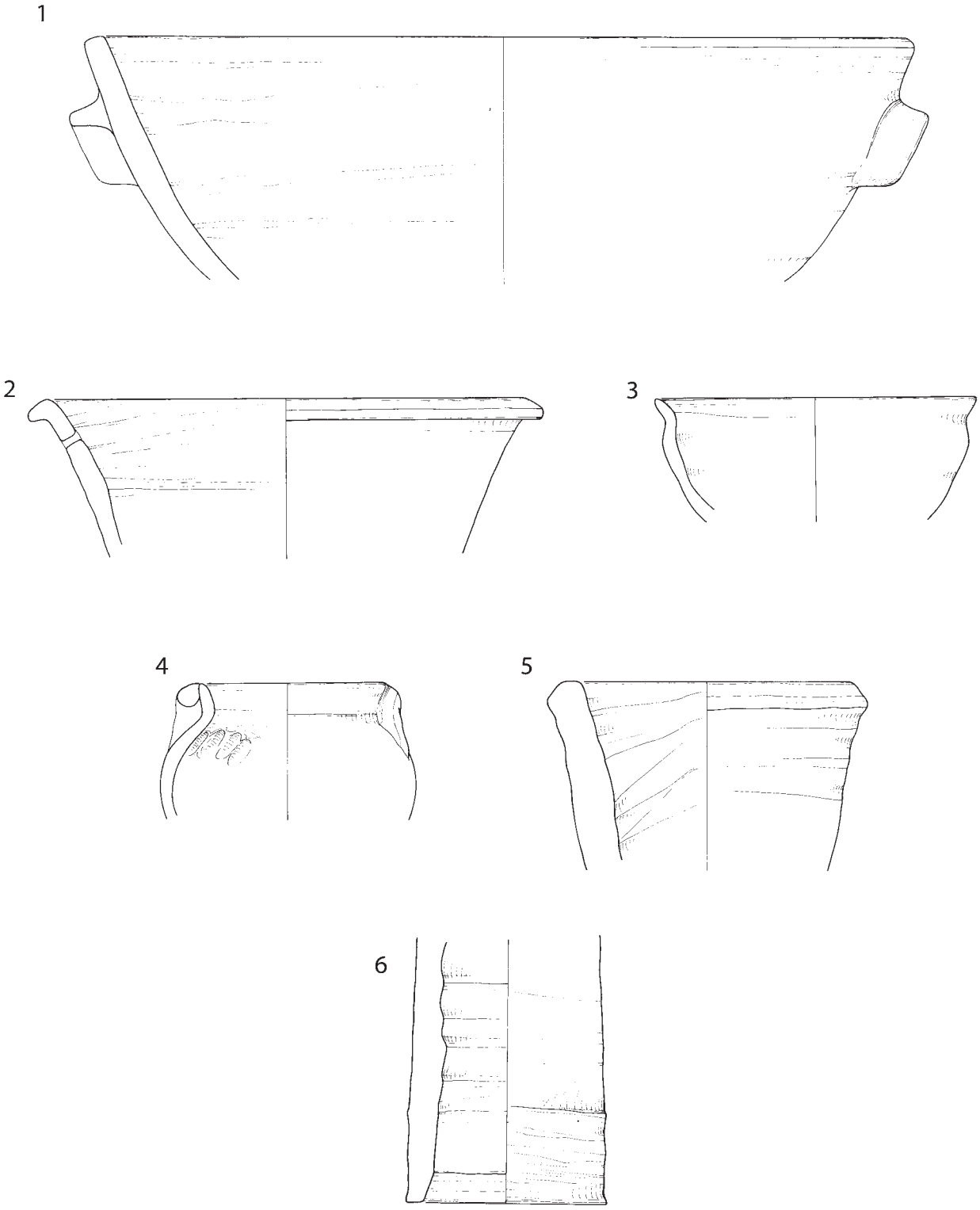


Fig. 14. Handmade plain wares (scale 1:3).

Fig. 15. A - mina'i sherd (Fig. 3, 2); B - lustreware sherd decorated with possible horse motif (Fig. 3, 7); C - green-glazed lamp found in situ in alcove (Fig. 6, 8); D - moulded sherd with face (Fig. 6, 12).

sented by only 6 fragments in total. The 112 pieces collected from Kūh-i Khāra, on the other hand, include 56 (proto-)stonepastes (the total absence of polychrome incised ware in this assemblage is also notable). Context 1027 has a relatively low proportion of glazed sherds (14.5%) while the Kūh-i Khāra pottery comprises more than half glazed sherds. This might partly be explained in terms of the collection strategy. Whether the surface scatter at Kūh-i Khāra does in fact include a higher proportion of Iranian glazed wares than elsewhere on the site, as was noted anecdotally above, cannot therefore be statistically demonstrated at this stage. A summary of the pottery from context 1027 must therefore suffice until such time as full recording of the Jām corpus, including the remaining collections from 2003 and any future excavated and/or completely sampled contexts, can be completed.

Graphs 1 and 2 present the pottery from context 1027, showing the relationship between fabric and ware; the data are summarised in tabular form below Graph 2. It can be seen from Graph 1 that less common wares have a close correlation with a single fabric, with glazed wares in particular showing high levels of uniformity. The more utilitarian ceramic wares unsurprisingly show greater diversity in terms of fabric, as does the moulded ware. None of the fabrics, as shown in Graph 2, was used for more than three wares (WF2 only), with most being used for two. Overall, the range of fabrics from Jām is fairly limited, and the assemblage has a comparatively high level of homogeneity. This may be the result of the presumed short occupation of the site (but see below), or it could relate to the way in which the settlement was supplied with ceramics and associated commodities. It is clear, however, that a larger dataset is needed before this analysis can be taken further.

V.2. Regional significance of the material

Although inevitably limited in scope, the analysis presented here does shed some light on patterns of pottery production and distribution in and around Jām, with the petrological groups being provisionally characterised as "local" or "non-local" in origin (see above). The presence of Iranian stonepaste wares in the assemblage, as well as the single celadon sherd (probably from the Yaozhou kilns, Shaanxi, more than 4000 km from its find spot), demonstrates that Jām was integrated into long-range trading networks, which in the light of the association of the site with the Ghurid summer capital of Fīrūzkūh, is as we might expect.

The origins of the majority of the assemblage, however, must be closer to home. An overview of the evidence for ceramic production across mediaeval Afghanistan indicates multiple disparate centres: Gardin apparently noted signs of pottery manufacture at a number of sites in the Kandahār and Herat regions (Bust, Kūshk-i Nakhūd, Takināhād in Kandahār; Ghūrīān, Sabzawār near Nishapur), as well as at Bāmiyān.[58] The compatibility between the clays of many of the sherds subjected to thin-section analysis, and the geology at Jām, provides good evidence for ceramic manufacture in the vicinity of the site. The kiln at Khar Khūj might be associated with ceramic production, and skilled craftsmen were clearly on site for the construction of the minaret; at the height of the settlement's prosperity, there would have been considerable artisanal expertise in the area. Local ceramic manufacture forms an interesting contrast with the preliminary analysis of animal bones from Jām, which indicated that it was very much a "consumer" site, bringing in much of what it needed from outside.[59] This may reflect different available resources in the region, which is suitable only for limited food production and today supports a tiny population. Possibly the needs of the potter were more easily locally supplied than those of the farmer.

Ethnographic work and archaeological studies are increasingly calling into question the view that only fine wares and transport jars travel any distance.[60] The evidence from Jām might imply both the importing of handmade cooking wares (petrological group 2/field fabric HF3) and the local production of glazed wares (petrological group 7/field fabric WF5). This would suggest a more complex situation than is sometimes assumed, and that the association of all handmade wares with domestic, local production needs to be revisited. Given the seasonal occupation of Fīrūzkūh by a semi-nomadic court, the presence of non-local coarsewares should not perhaps be surprising. Only further work on Afghan ceramics in general, and at Jām in particular, will clarify this situation.

V.3. Chronological significance of the material

The historical evidence linking Jām with Fīrūzkūh would indicate activity at the site broadly from the early to mid-twelfth century until the Mongol sack of the city in 1222. Fīrūzkūh was founded in 1146;[61] however, Hebrew-script tombstones from the site range in date from 1012 to 1220, and there was clearly a settlement at Jām prior to the foundation of the Ghurid capital, perhaps a trading centre of some kind.[62] The ceramics provide somewhat equivocal evidence for the presence of this early settlement: some sherds have been tentatively dated to the earlier end of the chronological range indicated by the tombstones, or even earlier, in particular some of the coarse wares dated by means of parallels with the Merv assemblage (although the perils of dating by these means are clear). Based on the glazed wares, however, parallels for which are more widely available than are those for coarse wares, the earlier occupation of Jām becomes more difficult to see. Of particular note are those wares that are absent, but commonly found on Central Asian, Iranian and Afghan sites such as Samarqand, Nishapur and Lashkarī Bāzār during the tenth and into the eleventh centuries, namely slip-painted wares: black on white, polychrome on white; polychrome on colour.[63] Negative evidence, however, is never conclusive, and the absence of these wares may reflect the nature of Jām's economic and cultural networks at this time, rather than chronological factors. More survey is required, in particular along the Jām Rūd valley to the south of the minaret, where the Jewish cemetery is located and where there

58 Gardin 1959: 29, n. 6; 1957: 228.

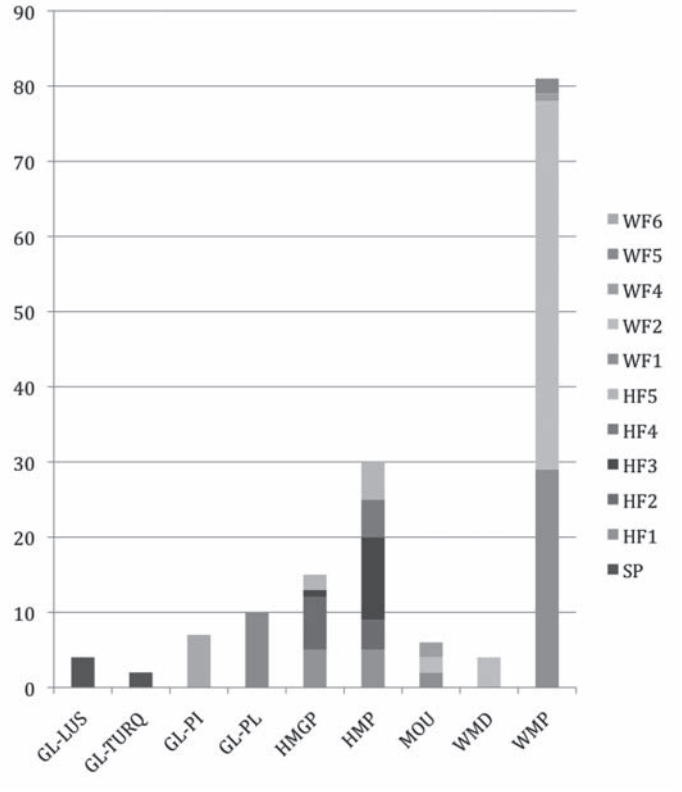
59 Holmes in Thomas *et al.* 2006.

60 E.g. Peacock 1982: 17–25, 75–89; Bridgman 2007.

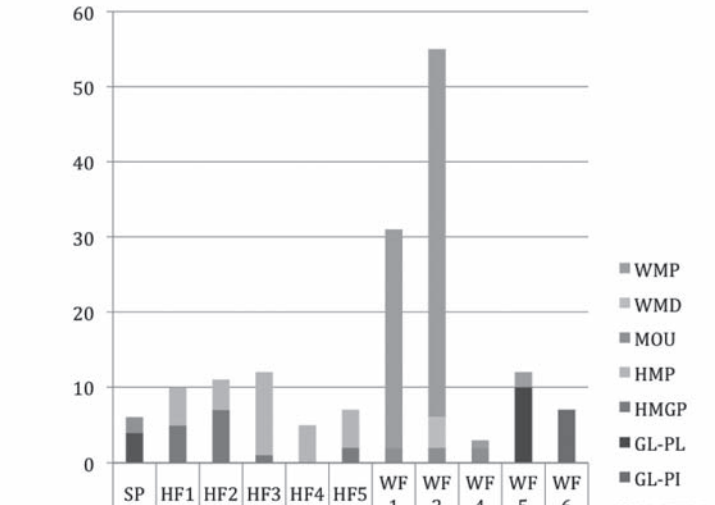
61 Vercellin 1976.

62 Hunter 2010: 82, n. 38; Herberg and Davary 1976: 65; see also Fischel 1965.

63 Wilkinson 1973: 90–178; Watson 2004: 205–45.



Graph 1. Wares from context 1027 broken down by number of sherds in each fabric; from left to right, glazed wares (GL-LUS: lustreware, GL-TURQ: turquoise moulded ware, GL-PI: polychrome incised ware and GL-PL: plain monochrome glazed wares); handmade wares (HMGP: geometrically painted and HMP: plain); moulded ware (MOU); and wheelmade wares (WMD: decorated (painted) and WMP: plain).



	SP	HF1	HF2	HF3	HF4	HF5	WF 1	WF 2	WF 4	WF 5	WF 6
WMP							29	49	1	2	
WMD								4			
MOU							2	2	2		
HMP		5	4	11	5	5					
HMGP		5	7	1		2					
GL-PL										10	
GL-PI											7
GL-TURQ	2										
GL-LUS	4										

Graph 2 (and data table). Fabrics from context 1027 broken down by number of sherds of each ware.

are substantial archaeological remains, and it may be that pottery recorded during future seasons will shed light on earlier activity in the area.

Even more vexed is the question of continued occupation at Jām after the Mongol conquests. The chronicler al-Jūzjānī, who grew up in Fīrūzkūh, and whose brother was there at or immediately before the first Mongol attack, described its fall in 1222, including the "martyrdom" of the people, and the destruction of the settlement.[64] It is clear that Fīrūzkūh's heyday was over by the time of this sack: the Ghurid elite were already favouring Herat by the late twelfth century,[65] but the events of 1222 removed the last traces of the status enjoyed by the site under the Ghurids, and most of its population. That some of those besieged at Fīrūzkūh did survive is evidenced by al-Jūzjānī's account of the evacuation of the upper fortress, the occupants of which then travelled to Herat.[66] A comparison with the taking of Herat, following which perhaps a quarter of the population was killed,[67] might indicate that the chances of surviving a brush with the Mongol armies following a successful siege were greater than is often stated. Furthermore, both sieges of Fīrūzkūh took place during the winter, when much of the population would have been elsewhere. Some form of continued occupation may be reflected in the ceramics, although again the evidence is far from clear. The underglaze-painted wares and the handmade geometrically painted wares, both common at Jām, are traditions that continued into the thirteenth and fourteenth centuries further west,[68] and indeed later, into the fifteenth century and even the Ottoman period.[69] Some form of activity at Jām may therefore have survived the Mongol conquest, as it did at Merv,[70] but considerably reduced in terms of population and wealth, and so perhaps less "visible" on the surface. Only the analysis of a body of ceramic material from stratified excavations, with particular concentration on the coarse wares, can clarify these chronological ambiguities.

The Mongol conquests complicate our understanding of the chronology of settlement in the area in a fundamental way. Archaeology has only in the last few decades outgrown the need to seek explanations for material changes in historical events, and the pre-war excavations and pottery publications relating to Afghanistan all consider the arrival of the Mongol armies as a key turning point in their ceramic typologies. Gardin cites the destruction of Bāmiyān in 1221 as a *terminus ante quem* for ceramic production on the site.[71] He additionally tries to pinpoint the probable start of the industry by reference to historical events of the twelfth century.[72] However, the disruption caused to ceramic production by the Mongol conquests is surely greatly overstated by Gardin in his study of the pottery from Sistan: "il n'existe toujours aucune céramique fabriquée dans les territoires aujourd'hui afghans que l'on puisse assigner à l'époque gengiskanide".[73] More recently, art-historical publications have considered the impact on the centres of the Iranian glazed industries, in particular Kāshān. Watson writes that "[t]he kilns of Kashan, highly productive up to about 1220, virtually cease production for some 40 years";[74] while Fehérvári, on the other hand, considers that "…Kashan was spared. Since Kashan was saved from Mongol destruction, pottery production continued there, almost without a break".[75] In the light of this uncertainty, how much more difficult is it for us to understand the chronology of less well known ceramic material for this critical period? While the actions of the Mongols clearly did rewrite the pattern of settlements across Central Asia and the Middle East, a more nuanced examination of the impact of these events in terms of ceramic production and distribution is long overdue. The majority of recent publications of Afghan ceramics,[76] have relied on dating by parallel with material from earlier studies. Such methods confirm, rather than question, well established chronological assumptions. It is thus hard even now to avoid self-reinforcing arguments based on the historical evidence regarding the impact of the Mongol conquests.

64 Al-Jūzjānī 1881: 1006–7, 1055–57.
65 Thomas 2007.
66 Al-Jūzjānī 1881: 1057.
67 May 2007: 122, 173 n. 25.
68 Johns 1998; also at Merv; David Gilbert pers. comm.
69 Brown 2006.
70 Herrmann *et al.* 1996: 4, 18; Herrmann *et al*. 1998: 72; Williams 2002.
71 Gardin 1957: 228, 242–43.
72 Gardin 1957: 243.
73 End of the thirteenth–fourteenth century: 1959: 37; see also 33: "Vient ensuite une période d'environ cent cinquante ans, pour laquelle on n'a encore trouvé sur le sol de l'Afghanistan aucune céramique distinctive".
74 Watson 2004: 373.
75 Fehérvári 2000: 148.
76 Including this one, but also Watson 2004; Fehérvári 2000; Morgan 1994b, *inter alia*.

TABLE 16. 2003 type series.

Type	Description under revised ceramic recording system
1	Mixed handmade and wheelmade wares, dominated by fabrics HF1, WF1, WF2, although other handmade fabrics were also present. Both open and closed forms were included, and surface treatment varied.
2	Mixed handmade and wheelmade wares, dominated by WF1, HF3, WF2. Mainly body sherds of large storage vessels, including some of those with both hand- and wheelmade sections.
3	Geometrically painted handmade cooking pots with red slip and black painted decoration on the exterior surfaces.
4	Wheelmade sherds, dominated by WF2 and WF1, with a cream firing surface or self-slip; many pieces of large storage jars.
5	Piece of a jar or jug of WF2, cream-slipped on the exterior and painted with swirls in both red and black paint.
6	Mixed handmade and wheelmade sherds, primarily HF2, WF1 and WF2, closed forms with cream-slipped and black painted exterior.
7	Variant of the geometrically painted handmade cooking pots but with all of the preserved exterior surface coated in black slip or paint.
8	Pieces of WF2, WF1 or WF4, uncoated and cream- or grey-fired, with incised or grooved decoration.
9a	Sherds of WF5, in addition to a few pieces of stonepaste, glazed in green, blue or turquoise.
9b	Sherds of WF6, cream-slipped and covered with clear glaze; related to polychrome incised ware, perhaps being the undecorated parts of those vessels.
9c	Polychrome incised ware, fabric WF6.
9d	Lustreware with stonepaste body.
9e	Stonepaste fabric, glazed turquoise inside and out.
10	Single sherd of HF5, overfired (from continued use over fire) to dark brown, and heavily sooted; from geometrically painted handmade cooking pot as type 3.
11a/b	Mixed handmade and wheelmade sherds with fabrics WF1 and HF3, being characterised by a cream slip or firing surface/self-slip.
12	Pieces of jugs and small jars with elaborate moulded decoration; fabrics WF1, WF2, WF4 and WF6.
13	Pieces of WF2 painted with red geometric pattern over a cream slip. Closed forms.
14	Sherd of WF4, light-grey fired, perhaps from a porous-bodied water jar.
15	Not seen.
16	Stonepaste with a decomposing silvery-white glaze.
17	Mixed WF4 and HF1, cream-fired or self-slipped.
18	Not seen.
19	WF2 with cream-fired or self-slipped exterior surfaces; one example has black painted decoration.
20	Uncoated coarse wares, the fabrics being WF5 and HF5.
21	Uncoated coarse wares of HF3.
22	HF2 or HF5 with cream slip and black painted decoration on exterior surfaces.
23	Characterised by dense fabrics firing to dark grey, pale grey or beige; includes pieces of WF4 in addition to sherds of "sphero-conical vessels" with their characteristic high-fired grey paste (Ghouchani and Adle 1992).
24	Not seen.
25	HF2 and HF3 with red-slipped exterior, as the geometrically painted cooking pots; these are patchily fired with beige areas.
26	Handmade cooking-pot pieces of HF2, interior roughness due to wet-wiping (with a brush?) during manufacture.
27	Not seen.

VI. CONCLUSION

In an ideal world, the ceramic analysis undertaken at Jām during 2005 would represent the start of a larger and more significant study, with the aim of gathering the data required to shed light on some of the issues outlined above. The next stage of the project should include the recording of the remaining sherds in store at Jām, in addition to the export of a larger sample of material from the corpus for scientific analysis. The conducting of further archaeological surveys in the area might allow a comparative ceramic research programme to be established, allowing the lifestyles, connections and nature of the population of mediaeval Jām to be drawn further into focus. Our understanding of ceramic production and chronology across Afghanistan as a whole needs to be addressed to allow proper understanding of the impact of the events of the early thirteenth century upon settlement and economic networks in the area. However, it is by no means clear when the political situation in Afghanistan will permit the fieldwork required to address these aims. The results gained to date are thus offered here, in full awareness of their limitations, and in the hope that it will soon be possible to build on them more significantly.

VII. APPENDIX: 2003 TYPE SERIES

During the 2003 field season, the ceramic material collected was divided into types, on the basis of a mixture of criteria, by the members of the small field team.[77] This was done as a preliminary step, and in the awareness that in Afghanistan more than elsewhere, there is no certainty that an archaeological field season will go ahead as planned. In 2005, the preliminary types listed during the 2003 season were re-examined, with a view to connecting them as far as possible with the new system (see Table 16). Unsurprisingly, given that they were drawn up by non-specialists, the types were of varying uniformity. In the case of rare types, few or no pieces were seen by the author, as sherds of each type were taken to Ghaznī for illustration at the end of the 2003 season, and were not available for study in 2005. [A.G.]

[77] Thomas *et al.* 2004: 112–15.

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