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Bc. Vendula Dědková

Typological and chronological evaluation of ceramics from the Darband Wall

Typologické a chronologické zhodnocení keramiky z Darbandské zdi

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Vedoucí práce: doc. PhDr. Ladislav Stančo, Ph.D.

Poděkování

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Vendula Dědková

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Abstract

This thesis presents the first complete publication and typological analysis of the ceramic assemblage recovered from the Darband Wall in southern Uzbekistan during the Czech–Uzbek archaeological expeditions of 2018 and 2022. The Darband Wall, part of the Iron Gates corridor between Bactria and Sogdiana, occupies a key strategic location within a broader network of frontier fortifications. The studied assemblage, derived entirely from systematic surface collection, includes diagnostic rims, bases, and occasional decorated body sherds from the wall's rampart, towers, and adjacent scatters.

The research applies a morphological classification adapted for unstratified, survey-derived ceramics, distinguishing vessel forms by orifice type, contour, and base morphology. Comparative analysis draws on well-published reference sequences from Uzundara, Kurganzol, Kampyrtepa, Old Termez, and other regional sites.

Due to the absence of stratigraphic context, only a small proportion of the material could be securely dated; most forms are placed within broad chronological brackets from the Hellenistic to Kushano–Sasanian periods. A detailed catalogue and full profile drawings are published in the supplementary section, ensuring the accessibility of the dataset for future comparative and technological studies. By integrating typological documentation with a complete open record of the material, the thesis establishes a reference point for the ceramic geography of the Bactro–Sogdian frontier and contributes to the broader understanding of the Darband Wall's historical context.

Abstrakt

Tato diplomová práce představuje první úplnou publikaci a typologickou analýzu keramického souboru získaného na Darbandské zdi v jižním Uzbekistánu během česko–uzbeckých archeologických expedic v letech 2018 a 2022. Darbandská zeď, součást průsmyku Železných vrat mezi Baktrií a Sogdianou, zaujímá klíčovou strategickou polohu v rámci širší sítě pohraničních opevnění. Zkoumaný soubor, pocházející výhradně ze systematického povrchového sběru, zahrnuje diagnostické okraje, dna a ojedinělé zdobené střepy z násypu zdi, věží a přilehlých rozptylů.

Výzkum uplatňuje morfologickou klasifikaci přizpůsobenou pro materiál z povrchových sběrů, která rozlišuje tvary podle typu hrdla, obrysu a morfologie dna. Komparativní analýza vychází z dobře publikovaných referenčních souborů z lokalit Uzundara, Kurganzol, Kampyrtepa, Starý Termez a dalších míst v regionu.

Vzhledem k absenci stratigrafického kontextu bylo možné jen malou část materiálu přesně datovat; většina tvarů je zařazena do širokých chronologických rámců od helénistického po kušánsko–sasánovské období. V přílohách je publikován podrobný katalog a úplné profilové kresby, které zajišťují dostupnost souboru pro budoucí srovnávací a technologické studie. Spojením typologické dokumentace s úplným otevřeným záznamem materiálu práce vytváří referenční bod pro keramickou geografii baktrsko–sogdiánského pohraničí a přispívá k širšímu poznání historického kontextu Darbandské zdi.

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1 Introduction

Situated in the Shurob-say gorge at the Iron Gates near modern Darband in southern Uzbekistan, the Darband Wall occupies a nodal position on the principal corridor between Sogdiana and Bactria. It was an impressive built: a stone wall running approximately 1.4–1.7 km[1] across the narrowest part of the gorge, across a constricted, seasonally volatile pass linking the Kashka Darya and Surkhan Darya basin. Its location gave it an enduring strategic role as gatekeeper of north–south movements—military, commercial, and administrative—from the Hellenistic period through Late Antiquity and beyond.

1.1 History of research

The modern history of the monument's investigation begins in the early Soviet period (A. Parfyonov's notice in 1930 is generally cited as the first explicit identification[2]), but it was only from the 1980s that systematic archaeological enquiry took shape under E. V. Rtveladze, who initially preferred a Kushan attribution.[3] In 1996–2001, targeted excavations by the Franco-Uzbek mission directed by Sh. Rakhmanov and C. Rapin opened new sections across the rampart and towers and, in concert with a reassessment of historical texts, argued for a Graeco-Bactrian foundation and a long, episodic history of refurbishment.[4] Subsequent campaigns refined the geological and geographical context of the pass and clarified that the wall exploits a naturally defensive topography created by the serpentine moraine and gypsum cap of Mount Susyztag, with the line closing the gorge at several chokepoints.[5]

In the last two decades, regional fieldwork has accelerated. Czech-Uzbek surveys (Ladislav Stančo et al.) in the Baysun and Kugitang piedmonts contextualised the wall within a broader frontier landscape of forts, watch-posts and settlements, and – crucially – emphasised that the area shows its first substantial settlement footprint in the Seleucid/Graeco-Bactrian era, not in the Achaemenid period.[6] A comprehensive synthesis of Hellenistic research in southern Uzbekistan (including work at Old Termez, Kampyrtepa, Kurganzol, Uzundara and sites proximate to Darband) has underscored both the density of investigation and the unevenness of the dataset (deep stratified soundings versus surface collections), which directly bears on how ceramic sequences are built and compared.[7]

Against this background, the chronology of the Darband Wall's primary construction remains debated. Rapin and colleagues favour an attribution to Euthydemus in the second half of the 3rd century BCE as a response to nomad pressure on northern Sogdiana; other readings – drawing on settlement sequencing and landscape control elsewhere in the Iron Gates system

[1] Rapin *et al.* 2022, 238; Stančo 2021a, 264.
[2] Stančo 2021a, 254
[3] Rapin *et al.* 2022, 247; Rtveladze 1986; Stančo 2021a, 254.
[4] Rapin *et al.* 2022 - esp. introduction and sections on the wall's history.
[5] Rapin *et al.* 2022, 235-237.
[6] Stančo 2021b, 82-83.
[7] Stančo 2021a, 251-254.

– have entertained an earlier Seleucid horizon (Antiochus I) for the inception of the fortified network.[8]

1.2 Aims and research questions

This thesis has three main interlinked aims:

1. To publish in full the diagnostic ceramic assemblage recovered by the Czech-Uzbek expedition in 2018 and in 2022 on and around the Darband Wall, providing illustrated catalogue.
2. To classify the assemblage typologically, with explicit, reproducible criteria for rim, base and body morphology, and to justify the chosen scheme for a surface-derived, context-poor dataset.
3. To compare the Darband corpus to well-dated reference sequences from the region – Uzundara, Kurganzol, Old Termez, Kampyrtepa, and, as needed, sites further afield – with the aim of proposing relative and absolute dating brackets for Darband types where possible.

These aims condense into the following research questions: (i) Which morphological and technological signatures in the Darband pottery best anchor it within known regional horizons? (ii) Do the Darband types cluster with Seleucid/early Graeco-Bactrian, "transitional nomad," Kushan, or Kushano-Sasanian suites – and with what confidence? (iii) What implications do the ceramic dates hold for the initial construction, maintenance and later re-use of the wall?

1.3 Scope, material and constraints

The ceramic assemblage from the Darband Wall derives from two field seasons of the Czech-Uzbek expedition, in 2018 and 2022. In both campaigns, the principal objective was a metal detector surface survey of the wall line and its environs; pottery was collected as a secondary objective, recorded systematically but without constituting the primary research focus. The ceramic material comes from the wall's stone-and-earth rampart, selected tower footings, and adjacent surface scatters, the latter likely originating from the exploitation, refurbishment, and later re-working of the line.

As with most surface assemblages, the dataset is spatially extensive but stratigraphically unanchored. Analytical emphasis is therefore placed on diagnostic rim and base fragments that lend themselves to inter-site comparison. The comparative framework privileges sites that either (a) possess robust ceramic phasing tied to coins or sealed archaeological contexts (e.g., Uzundara, Kurganzol), or (b) offer large, well-published corpora with internal relative phasing and a consistent typological vocabulary (e.g., Bactra).

[8] Rapin *et al.* 2022, 245 for attribution to Euthydemus; Stančo 2021b, 87 for Seleucid/Graeco-Bactrian onset.

1.4 Theoretical and methodological approach

Given the assemblage's surface origin, the thesis adopts a morphological (contour-based) approach centred on the orifice (restricted/unrestricted) and rim/body contour (simple, composite, inflected), supported by a coding system for rim profiles and base types. This follows practice developed for Central Asian survey ceramics[9] and explicitly engages with fuzzy classification concepts where fragments straddle multiple types.[10] Quantification is by rim-equivalent count and type frequency.

1.5 Comparative sites and justification

- **Uzundara**: a stone-built hilltop fortress on the Susyztag ridge; recent Russian-Uzbek excavations (from 2013) and earlier surface work argue for a Hellenistic origin and long use.[11]
- **Kurganzol**: a compact circular fort with undisturbed Hellenistic layers, invaluable as a ceramic control for early-mid 3rd to mid-2nd c. BCE.[12]
- **Old Termez**: deeply buried Hellenistic horizons beneath later Kushan and medieval levels with published sequences.[13]
- **Kampyrtepa**: a riverine garrison town with coin-tied phasing from Seleucid through early Kushan.[14]
- **Bactra (Balkh)**: large, well-studied corpora (esp. for fabrics, slips, shape families) with published chronology from Achaemenid/Iron Age through Kushano-Sasanian phases.[15]

1.6 Structure of the thesis

The thesis is organised to move from a broad contextual and historical frame into a detailed, data-driven analysis of the Darband Wall ceramic assemblage, ending with a synthesis that situates the results within the regional archaeological record. Chapter 2 begins by reconstructing the geographical and environmental context of the Iron Gates corridor in which the Darband Wall is set. This includes a discussion of the geological structure of the Susyztag and Sarymas ranges, the hydrology of the Machay Darya and Shurob-say valleys, and the physical constraints and opportunities that shaped human movement across the pass from antiquity to the modern era. The chapter also considers the wider microregional units showing how the Darband Wall occupies a strategic position within a network of communication routes between the Kashka Darya and Surkhan Darya basins. These geographical observations are not

[9] Kobierská 2016.
[10] Kobierská 2016, 34-44.
[11] Dvurechenskaya 2022; Dvurechenskaya 2023.
[12] Sverchkov 2008, Sverchkov 2013.
[13] Houal 2016; Houal 2023.
[14] Martínez Ferreras et al. 2016.
[15] Maxwell-Jones 2015.

treated as static background, but as active factors influencing settlement location, military strategy, and the placement of fortifications.

Building on this environmental framework, Chapter 3 provides a diachronic historical synthesis of the Darband Wall and its associated landscape. Beginning with the Achaemenid period, it outlines early indicators of frontier control and security installations before turning to the Hellenistic foundation of the wall—most often attributed to the Graeco-Bactrian ruler Euthydemus in the second half of the 3rd century BCE. The chapter traces the subsequent history of the monument through Kushan reinforcements, shifts in frontier policy under the Kangju, the construction of a small Hephthalite fortress, and the Timurid rebuilding that incorporated a customs post. Archaeological evidence from previous excavations is combined with relevant historical testimonies in order to illustrate the evolving strategic and economic role of the Iron Gates over more than two millennia.

Chapter 4 turns to the material at the centre of this thesis: the ceramic assemblage recovered during the 2018 and 2022 field seasons of the Czech-Uzbek expedition. Although both seasons were primarily dedicated to an intensive metal detector survey of the wall and its environs, all visible diagnostic pottery was systematically collected as a secondary objective. The resulting dataset includes diagnostic rim and base fragments, and occasional handles or decorated body sherds from the wall's stone-and-earth rampart, selected tower footings, and surrounding surface scatters, many of which likely derive from ancient use, repair, and later re-working of the wall line.

Chapter 5 then explains the analytical methodology in detail, setting out the typological framework, hierarchical coding scheme, fabric and surface treatment categories, measurement protocols, and decision rules for assigning types in a surface-derived, stratigraphically unanchored assemblage. It also justifies the selection of comparative sites, prioritising those with secure ceramic phasing from sealed contexts—such as Kampyrtepa and Kurganzol—and large published corpora with robust internal chronologies, such as Bactra.

Chapters 6 and 7 present the typological analysis itself: Chapter 6 examines rims in depth, organised into form groups and types, with descriptions, metric data, and parallels from the regional comparative corpus; Chapter 7 addresses bases, considering their morphological variability, potential functional implications, and chronological value. The final Chapter 8 synthesises the analytical results, integrating them with the comparative framework to propose a chronological placement for the Darband assemblage and to reflect on its significance for understanding the Darband Wall within the Bactro-Sogdian frontier system.

1.7 Significance and expected contribution

By publishing and analysing the 2018 and 2022 Darband corpus, the thesis contributes (i) a new datapoint to the ceramic geography of the Iron Gates system; (ii) a typological scheme adapted to survey-derived assemblages that is portable to adjacent Czech–Uzbek collections in the Darband hinterland; and (iii) a comparative argument for situating the Darband Wall within regional ceramic horizons.

2 Geography of the Darband Wall and Its Environs

The region of the Iron Gates, situated near the village of Darband (formerly spelt Derbent) in southern Uzbekistan, represents a strategic passage through the Hissar mountain range and has served as a crucial geographical and political boundary in Central Asia across various historical epochs. Known as the Darband Wall, this defensive structure has historically controlled one of the key communication corridors linking northern and southern Central Asia, notably the ancient route between Bactra (modern Balkh) and Samarkand. Its strategic value is as much geological as topographical, defined by a complex of mountain ridges, river basins, and gorges that converge to form a natural chokepoint within a broader landscape of plateaux, steppes, and oases.

Fig. 2.1: View of the Darband Wall from the north (Rapin et al. 2023, 238; modified by the author).

2.1 Regional Setting

The Darband corridor lies within the Hissar mountain range, which stretches across southern Uzbekistan and forms a formidable geological barrier between the Surkhan Darya and Kashka Darya basins. This region is characterised by a sequence of Jurassic limestone anticlines rising up to 2,500 metres, interspersed with deep gorges and narrow valleys. The Iron Gates are

formed at the point where the Kugitang-Susyztag ridge dips north-westward, exposing Late Jurassic and Early Neocomian strata of gypsum, red argillite, and sandstone.[16]

The Darband corridor does not constitute a singular pass but rather a 22-kilometre-wide stretch extending between the villages of Darband and Akrabat. It has historically functioned as a road junction connecting routes to Shahr-i Sabz, Darband, and Guzar. Even today, the site of Akrabat preserves remnants of a 19th-century Russian postal fortress, underscoring the continuing logistical importance of the area up until the modern period.[17]

2.2 Landscape of Darband

The village of Darband is located within an oasis framed by the Susyztag and Sarymas mountains, forming a transitional zone between the Hissar and Kugitang ranges. Two tributaries feed into the oasis: the Machay Darya, which approaches from the north via a deep gorge, and the Shurob-say, flowing from the west. The confluence of these tributaries gives rise to the Sherabad Darya, which exits the mountainous terrain and eventually joins the Amu Darya further south.[18]

The Shurob-say valley in particular plays a central role in the defensive topography of the region. It cuts through gypsum ridges and includes a serpentine moraine capped by the prominent hill of Sher-Khoja. Rising 130 metres above the riverbed, this elevation was strategically significant, providing a commanding view of the surrounding area and serving as a natural bastion.[19]

The Machay Gorge could have functioned as an alternative route bypassing the main defile at the Darband Wall. To control this route, a settlement was established at the site of Kapchigay, located in the northernmost part of modern Darband village on a low hill overlooking the entrance to the gorge. Its position allowed effective monitoring of north–south movement through the Machay corridor. Although only a very limited number of coins have been recovered from the site to date, the ceramic assemblage[20] points to occupation during the second half of the 3rd century BC. The settlement was likely fortified and formed part of a broader defensive and administrative system operating in parallel with the Darband Wall.[21]

To the west of Darband lies the Buzghala-khana gorge, which was historically identified by some as the actual "Iron Gates."[22] However, modern analyses argue against this interpretation due to its accessibility and bypassability. The real fortification efforts were focused further east, where the Shurob-say valley becomes narrower and more defensible.[23]

Hydrologically, the area is marked by a seasonal regime. The streams feeding into the Sherabad Darya exhibit high variability, especially during snowmelt and spring floods. These

[16] Rapin *et al.* 2022, 235.
[17] Rapin *et al.* 2022, 235.
[18] Rapin *et al.* 2022, 236-237.
[19] Rapin *et al.* 2022, 237–238.
[20] Sverchkov 2005, 13–14; Stančo *et al.* 2022, 100–106.
[21] Stančo 2021a, 265; Stančo 2021b, 72-73.
[22] Rtveladze 1986, 38.
[23] Rapin *et al.* 2022, 236-237.

conditions made certain sections of the gorge impassable at times, further reinforcing the strategic utility of the wall.[24]

The geography of the Iron Gates near Darband is defined by a unique combination of natural and strategic features: mountain ridges, river valleys, confluences, and seasonal hydrological variations. This landscape, while not completely impassable, channelled movement and conditioned the construction and evolution of one of Central Asia's most enduring frontier systems. The Iron Gates' role as both a barrier and a conduit underscores the complexity of defining "natural borders" in antiquity and highlights the importance of geography in the historical development of regional political, military, and economic systems.

[24] Rapin *et al.* 2022, 238.

3 The Darband Wall Through the Ages

3.1 Achaemenid Era Background and Alexander the Great

The early history of the Iron Gates region is still being pieced together, but it appears that prior to Hellenistic times the area was only sparsely inhabited. During the Achaemenid Persian Empire (6th–4th centuries BCE), Sogdiana and Bactria were both part of the imperial domain, and the Sherabad/Baysun mountains lay on the borderland between these satrapies. There is scant archaeological evidence of an Achaemenid military presence in the pass itself; recent surveys found only a very few surface artifacts possibly dating to the 5th–4th centuries BCE in the Iron Gates vicinity, suggesting at most ephemeral usage.[25] If anything, the rugged defile itself was a sufficient natural obstacle that needed only minimal guarding in that era.

Alexander the Great's campaign in 329–327 BCE dramatically transformed the political landscape, yet the historicity of his connection to the Iron Gates is a matter of historiographic debate. Classical sources do record Alexander pursuing Bactria's rebel satrap Bessus across the Oxus and through mountains and passes, however, no concrete locations can be connected to this[26] and modern archaeological surveys have found no evidence of Macedonian fortifications at Darband dating to Alexander's immediate post-conquest period.[27] It appears that Alexander marched through these parts without leaving a permanent garrison. Nevertheless, Alexander's expedition might have alerted subsequent rulers to the strategic importance of this corridor, and his exploits in Sogdiana set the stage for the turbulent era that followed, when the Iron Gates would finally be walled and militarized.

3.2 Hellenistic Period

The origins of the Darband Wall lie in the early Hellenistic period, specifically within the reign of Antiochus I Soter (r. 281–261 BCE), son of Seleucus I and governor of Bactria before his accession to the throne. While earlier scholarship had tentatively linked the construction of the fortification system to the reign of Antiochus III and his eastern campaign around 206 BCE[28], more recent archaeological research provides compelling evidence for a significantly earlier date – the Darband Wall and the contemporaneous fortress of Uzundara were most probably established during the reign of Antiochus I.[29]

This dating is supported by numismatic evidence: coins of Antiochus I have been recovered at multiple key sites in the region, including Uzundara, Kurganzol, Daganajam, and the Darband Wall itself.[30] Stančo argues that these finds cannot merely be explained by the long

[25] Stančo 2021b, 82-83.

[26] Although some scholars (e. g. Rapin *et al.* 2022, 240-241, Rtveladze 2002, 94-116) try to link specific locations with names mentioned in ancient sources, there is no solid evidence for this. As Sverchkov said – the route of Greek army beyond Oxus cannot be reconstructed in detail, we cannot even be sure if he went through the Iron Gates or if he chose another route. (Sverchkov 2013, 122.)

[27] Stančo 2021b, 84-85.

[28] Stančo 2020a, 262.

[29] Martinez-Séve 2017, 291–292; Stančo 2021b, 85.

[30] Stančo 2021b, 86.

circulation life of Seleucid coinage but rather indicate the presence of Seleucid garrisons and active occupation. Furthermore, this construction fits well with known Seleucid policies aimed at securing key communication corridors and integrating new urban settlements into a fortified network along the empire's frontier. The location of the Darband Wall across the Shurob valley – one of the very few natural passes in this area – confirms its role in overseeing a strategically vital corridor. The erection of a linear barrier in this location was likely intended not just as a military measure but also to assert imperial control over population movement and trade between the two major cultural zones.

This reinterpretation shifts the narrative away from a reactive defence against nomadic threats during the reign of Euthydemus I[31], and instead places the foundation of the wall within a proactive phase of territorial consolidation under Antiochus I.

Crucially, the wall did not stand alone but was rather a part of a larger network of fortifications in the surrounding highlands. Foremost among these is the fortress of Uzundara, situated about 7 km north of the Darband Wall on a hill of the Susiztag ridge overlooking an alternate mountain path.[32] Uzundara was a stone-built fort whose precise role within the Darband defensive system remains a subject of debate. Although traditionally interpreted as part of the frontier network aimed at controlling the Iron Gates pass during periods of limited Greek authority in Samarkand, alternative perspectives question this straightforward defensive reading. The fortress's unusual placement – overlooking the eastern steppe rather than oriented defensively toward the west – suggests it may have faced threats from the east, contrary to earlier assumptions. This challenges the notion that Uzundara was intended to defend against northern. Instead, it is plausible that it functioned as a or that its primary role may have been to monitor and protect the important communications in the Sherabad Darya plain.[33] Another possibility is, that it was used as a base for Euthydemos I during his campaigns against the Diodotid dynasty in Bactria.[34] Ultimately, while clearly Greek in construction, Uzundara's exact political alignment and military function may have shifted over time, reflecting the complex and fluid power dynamics.

Another key site is Kurganzol, a small mudbrick fort located on a hill at the periphery of the Iron Gates system. Excavations in the 2000s revealed Kurganzol's round fortress (ca. 60 m diameter) was founded in the late 4th century BCE, shortly after Alexander's conquest, and underwent several phases until it was abandoned by the mid-2nd century BCE.[35] Notably, Kurganzol's earliest strata show a Hellenistic character with no Achaemenid remains, indicating it was a new foundation likely built by Alexander's successors around the 320s–300s

[31] Rapin *et. al.* 2022, 241.
[32] Stančo 2021a, 262.
[33] Rapin *et al.* 2022, 245.
[34] Stančo 2021a, 265-266.
[35] Sverchkov 2008, 127-165. Later Sverchkov revisited this dating and claimed, that the fortress was in use only in the 4th c. BCE (Sverchkov 2013, 113-116), but recent findings support a longer use of the site (Lyonnet – Fontugne 2021, 359-366; Stančo 2021b, 74).

BCE.[36] However, given its small size and peripheral location, Kurganzol hardly played any important role once the larger Iron Gates fortifications were in place.

In addition to these forts, the system likely included other smaller works and settlements. Several stone towers and traces of long stone ramparts have been identified on the eastern slopes near Uzundara, thought to be part of a fortification system shielding the settled valley from incursions out of Sogdiana.[37] Another possible fortified settlement at the site of Kapchigay is already mentioned in the previous chapter.

In sum, by the mid-3rd century BCE the previously quiet Baysun piedmont had transformed into a landscape of walls, forts, and garrisons. However, both the exact chronology of these defensive installations and the motives behind their construction remain subjects of ongoing scholarly debate.

3.3 Nomadic Invasions and the Yuezhi

The second century BCE marked a turning point for the Greco-Bactrian kingdom, culminating in the loss of its northern territories and the disintegration of its frontier system, including the Darband Wall. Coinage evidence indicates that the use of Greco-Bactrian currency in the region ceased with the death of Eucratides I around 144 BCE, signalling the abandonment of the right bank of the Oxus at that time.[38] The appearance of high numbers of imitative issues of Heliocles I after this point further suggests a collapse of effective Greek political control in the region.

The identity of the first nomadic groups to cross into the Iron Gates zone remains uncertain. Ancient sources are fragmentary and inconsistent, amalgamating various incursions and ethnic labels—Sacaraucae, Asiani, and Tochari—under broad terms such as "Scythians." Some may have been Saka groups originating in the Zeravshan valley, as suggested by the funerary customs visible in local kurgans, while others arrived later from the steppes to the north or east. By the time the Yuezhi appeared on the bank of the Oxus around 130 BCE, the Darband line seems already to have functioned as a newly established frontier between the soon-to-be Kushan Tokharistan to the east and the Kangju confederation to the west.[39] The Iron Gates had now lost its original defenders, yet its story was far from over – under new masters, the old frontier would acquire new roles.

3.4 Kushan Era

The Yuezhi migrants who settled Bactria in the late 2nd century BCE gradually transitioned from nomadic to a settled style of life, culminating in the formation of the Kushan Empire. Under Kushan rule, this region underwent a transformation: the Iron Gates, previously

[36] Sverchkov 2008, 123. Lyonnet – Fontugne 2021 however disagree with this and point out that both the circular shape of the fort and some of the pottery found in the earliest strata are typical for earlier Achaemenid period (Lyonnet – Fontugne 2021, 363-365).

[37] Stančo 2021a, 265; Beľsh 2020, 373-381.

[38] Rapin *et al.* 2022, 246.

[39] Rapin *et al.* 2022, 246.

a symbolic and loosely monitored zone, became a defined imperial border between Kushan Tokharistan[40] and the Kangju confederation.

Archaeological evidence shows that the Darband Wall was reoccupied and underwent major rebuilding beginning in the 1st century BCE, following a period of abandonment after the fall of the Greco-Bactrian kingdom. The new construction included three phases of mudbrick masonry and a series of watchtowers projecting outward from the wall.[41] Despite extensive excavation, no gateway has been identified along the preserved stretch of the wall, leaving uncertainty about the precise location, one possibility being that the entrance was through the Shurob gorge.[42]

3.5 Late Antiquity and early Middle Ages

In the centuries following the Kushan period, the Darband Wall and the surrounding region retained their strategic importance despite the transformation of political regimes. During Late Antiquity, the area remained a significant frontier zone, but control over it passed through a series of ephemeral powers. Archaeological traces suggest continued occupation and reconfiguration during the Hephthalite and Turkic periods.[43]

A small early medieval fort was constructed near the northern foot of Sher-Khoja. Built of rectangular mudbricks and organised around an irregular plan, the structure stood on two levels and included a trapezoidal courtyard with adjoining rooms, possibly used for garrison or administrative purposes.[44]

At approximately the same time, a passageway through the wall was opened slightly north of the fort. This route provided access across the Iron Gates without entering the Shurob canyon. Archaeological layers along this crossing show continuous use from Late Antiquity into the Early Middle Ages, perhaps dating as early as the Chionite or Kidarite periods.[45] The passage was protected by a wall pierced by a gateway, although no fully preserved gate has been identified.

The ultimate decline of these installations likely came in the wake of the Arab conquests in the early 8th century, which disrupted the political landscape of the region. However, the symbolic and strategic value of the Iron Gates persisted well into the Middle Ages, as reflected by many travellers' accounts and Gates later reactivation under Tamerlane in the 14th century.

3.6 Timurid Period

During the Timurid period, Amir Timur (Tamerlane) re-established the strategic use of the Iron Gates, not as a military frontier, but as a controlled economic passage. Rather than

[40] Tokharistan = „the name that the Oxus basin was given after the replacement of the Sogdian and Bactrian names after the fall of the Graeco-Bactrian kingdom." Rapin *et al.* 2022, 251.
[41] Rapin *et al.* 2022, 250.
[42] Rapin *et al.* 2022, 246.
[43] Rapin *et al.* 2022, 252.
[44] Rapin *et al.* 2022, 252-254.
[45] Rapin *et al.* 2022, 254-255.

functioning as a border demarcating political authority, the corridor was repurposed to regulate and tax trade travelling northward from the southern regions of his empire.[46] To enforce this control, Timur is believed to have fortified the ancient route with a substantial stone wall oriented eastward, designed to guard and monitor the flow of goods. Architectural evidence of this intervention includes a walkway built along the base of the wall's eastern façade, facing toward Samarkand[47]—indicating both surveillance and ceremonial function.

This activity is corroborated by the Spanish ambassador to Tamerlane's court Ruy González de Clavijo, who passed through the region in 1404. He describes spending the night of 25–26 August in a richly decorated residence situated on the eastern side of the pass, likely intended for the reception of distinguished travellers or the supervision of the gate's operations. As Clavijo proceeded through the Shurob-say and Buzghala-khana canyons toward Timur's court, he was told a local tale about ancient iron-plated gates that once blocked the pass[48] – an enduring legend also encountered by the Chinese pilgrim Xuanzang in the 7th century CE[49], reflecting the mythical and symbolic aura that surrounded this natural chokepoint throughout history.

Another interesting account of travel from that time period is the 1414 journey of the Ming envoy Chen Cheng, who passed through the region on his way to Herat. His detailed itinerary includes a record of the Iron Gates pass (likely the Shurob corridor), which he refers to difficult yet symbolically resonant stages of the route through Central Asia.[50]

3.7 Legacy of the Darband Iron Gates

The Darband Wall and Iron Gates corridor stand as a rare example of long-term strategic infrastructure in Central Asia, whose function and meaning were continually reshaped by successive empires over the course of more than a millennium. From its Hellenistic origins to its Timurid revival, the wall's history reflects both regional power dynamics and evolving conceptions of borders, mobility, and control.

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[46] Golombek – Wilber 1988, 23-24; As Clavijo describes it: *„The mountain range beyond this place is very lofty and the pass that traverses it is a narrow cleft where the passage seems to have been cut through by the hand of man, with the mountain wall on either side rising vertical to an immense height. The roadway itself is quite level, passing deep down in the cleft. Here in the midst of surrounding heights stands a village, and the place is known as the Iron Gates. In the whole length of this mountain range there is no other pass to cross it, save this one, which is thus the Guard House of the Imperial city of Samarqand. It is only by this one pass that all who travel up to Samarqand from India the Less can come: nor can those who go down from the Imperial City voyaging to India travel by any other route. The lord Timur is sole master of these Iron Gates, and the revenue is considerable to the state from the customs imposed on all merchants who come from India going to the city of Samarqand and to the regions beyond."* Clavijo, 204-205.

[47] Rapin *et al.* 2022, 255.

[48] *"We were told that in times past there were actually great barrier gates, cased in iron, which closed the passage way between the mountain cliffs, whereby none could pass without a permit [but no gates were there when we came through]."* Clavijo, 206.

[49] Rapin *et al.* 2022, 235, 255

[50] Fan 2023, 846-847. *„…there stands a big mountain, dividing the south and the north. In the middle [of the mountain] there is a rocky gorge, connecting the east and the west. The precipitous rock faces and sheer cliffs are tens of zhang tall, as if cut cleanly by an axe. The road extends to two or three li before it goes out of the gorge. At the mouth, there is a pass, namely the "Iron Gate Pass" (Tiemen guan 鐵門關).*

In the Hellenistic period, the wall was constructed as a defensive fortification to secure the vital corridor between Bactra and Samarkand, serving both military and economic purposes. Its alignment across the Shurob defile enabled the Seleucid and later Greco-Bactrian authorities to control one of the principal transregional routes, simultaneously protecting local populations and facilitating administrative oversight.

Following the collapse of Greco-Bactrian power, the Saca and Yuezhi migrations brought significant upheaval to the region. During this transitional phase, the Darband Wall appears to have been briefly abandoned or left without a military function. While the wall's exact use at this time remains uncertain, there is no indication of major repairs or fortification efforts.

Under the Kushan Empire, the wall was revived and used as a formal state boundary and as such underwent substantial rebuilding. Reinforced with mudbrick structures and additional towers, it assumed a military role – this time demarcating the northern edge of Kushan-controlled Tokharistan. The presence of Kushan coinage and architectural standardisation signals its integration into a broader imperial frontier system.

In the Late Antique and early medieval periods, the overall significance of the Darband Wall appears to have diminished. However, the continued relevance of the pass is suggested by the construction of a small early medieval fort at the foot of the Sher-Khoja. The structure likely served as a localised garrison or checkpoint, indicating that while the wall itself may have lost its earlier frontier function, limited defensive or administrative activity persisted.

The wall's role was once more transformed in the Timurid period, when it became a tax-collecting station and administrative checkpoint controlling the only viable route between Samarkand and the regions of India and Afghanistan. New construction activity and historical accounts attest to the continued relevance of the Iron Gates as a geopolitical chokepoint.

Across all these periods, the Darband Wall served not only as a defensive barrier but also as a dynamic instrument of territorial governance, adapting to changing regimes and economic imperatives. Its enduring presence in the landscape highlights the long-term importance of the Iron Gates as a fixed corridor of power, mobility, and control in Central Asian history.

4 Darband Wall Pottery Assemblage

The ceramic assemblage from the Darband Wall was collected during two seasons of fieldwork, in 2018 and 2022, as a supplementary component of a broader metal-detector survey. The primary aim of the survey was the recovery of metallic artefacts, above all coins, in the vicinity of the Wall; ceramic finds were gathered incidentally during the same operations. The collection strategy was thus non-systematic and highly selective: only morphologically diagnostic sherds noticed on the ground surface were picked up. This procedure has inevitably created a bias towards visually distinctive or "attractive" fragments, omitting less conspicuous pieces that might nevertheless have been significant for reconstructing the full ceramic spectrum of the site.

The surveyed section of the Wall was subdivided into three sectors, each assigned a numerical code: **21** – Darband North, **22** – Darband Centre, and **23** – Darband South. The recovery rate varied between these sectors: Sector 21 yielded **93 fragments**, Sector 22 **55 fragments**, and Sector 23 **177 fragments**, giving a total of **325 diagnostic sherds**. The marked numerical predominance of the southern sector may reflect a combination of factors, including differences in visibility of finds, density of occupational debris, and fieldwork intensity.

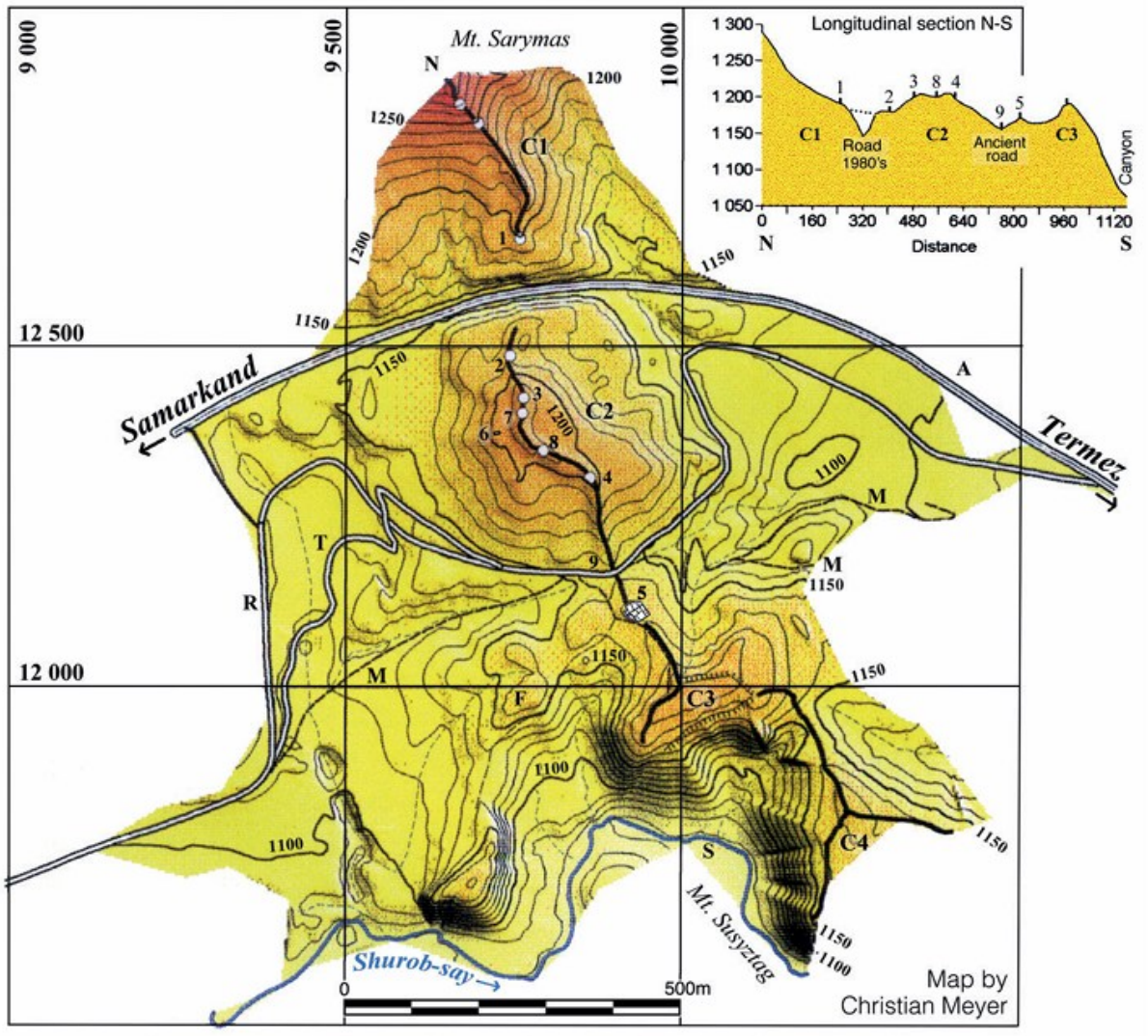
Name	Site code	Modern place	Latitude	Longitude	Elevation (m.a.s.l.)
Darband Wall North	BA5_21	Darband	38.213075	66.972561	1217
Darband Wall Center	BA5_22	Darband	38.208658	66.973709	1200
Darband Wall South	BA5_23	Darband	38.208658	66.976333	1170

Tab. 4.1: Overview of the Darband Wall sections (after Stančo 2021b, 76-77).

In the 2018 season, sherds were labelled in the field following the scheme *BA5_xx_yyy*, where *xx* denotes the sector code (21–23) and *yyy* the sequential number within that sector. In 2022, no such coding was applied on site; the finds were retrospectively sorted by the author during a visit to Uzbekistan in 2024, when the assemblage was re-examined. Sadly, the other half of the material was already moved to the depositories of the Archaeological Museum of Termez, which at that time were undergoing reconstruction, restricting access to the 2018 material. Consequently, a portion of the assemblage has never been inspected in person by the author, who has instead relied on existing drawings and an incomplete photographic record.

The quality of this documentation varies considerably. Drawings are the work of several different individuals, resulting in differences in style, accuracy, and level of detail.

Photographic images likewise differ in resolution and lighting conditions, and are lacking altogether for some items. For the 2018 season, the recorded metric data consisted solely of rim or base diameters; the 2022 season added estimated vessel equivalents (EVE), but no further technological or macroscopic fabric observations were made. Surface treatments, colours, and inclusions were not recorded systematically, and for many items even the most basic descriptive fields are absent.



1-9: trenches (**5**, "Castle": coordinates: 38°12'25"N / 66°58'29"E). **F**: empty graves?
N-S: longitudinal section of the wall. **C1**: Mount Sarymas; **C2**: Central Hill; **C3-C4**: Sher-Khoja.
M, **T**, **R**, **A**: roads. **M**: early roads. **T**: 19th century. **R**: 20th century. **A**: 1980's (today highway).

Fig. 4.1: Topographical plan and section of the Darband Wall (map by Chr. Meyer, with additions by C. Rapin – RAPIN et al. 2022, 240). Sector C1 equals our sector 21, C2 is 22 and C3 and C4 are our 23.

Quantification of the assemblage, based on the part of the vessel preserved, shows a consistent dominance of rim fragments across all sectors:

Sector 21 (93 sherds): rims 76 (81.7%), bases 9 (9.7%), bodies 3 (3.2%), handles 2 (2.2%), undetermined 3 (3.2%).

Sector 22 (55 sherds): rims 43 (78.2%), bases 8 (14.5%), bodies 2 (3.6%), handles 1 (1.8%), undetermined 1 (1.8%).

Sector 23 (177 sherds): rims 147 (83.1%), bases 12 (6.8%), bodies 8 (4.5%), body with handle 2 (1.1%), body with carination 1 (0.6%), handles 1 (0.6%), rim with handle 1 (0.6%), undetermined 5 (2.8%).

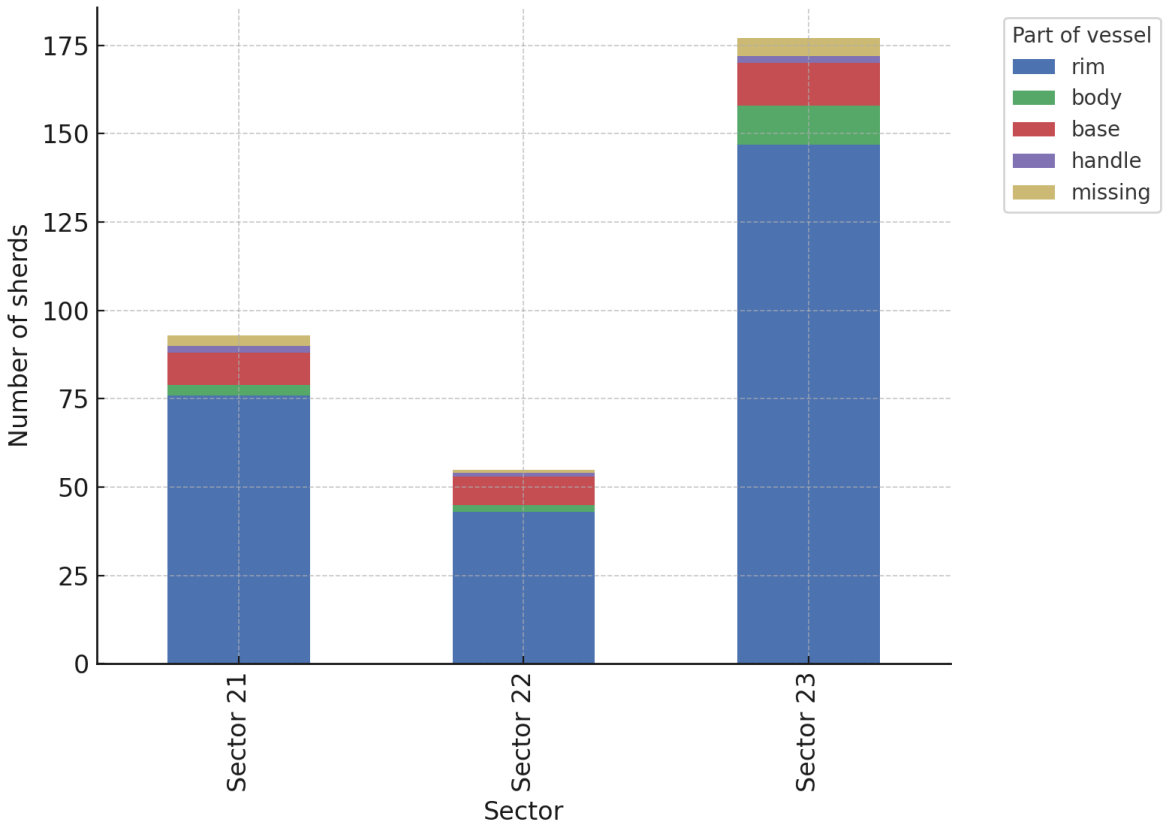


Fig. 4.2: Distribution of vessel parts by sector – Darband Wall assemblage

Rims consistently form between 78% and 83% of the diagnostic material, followed at a considerable distance by bases (7–15%). Body sherds are rare; decorated examples or pieces preserving distinctive technological features are exceptional. Complete profiles are entirely absent. This pattern mirrors the circumstances of collection: because selection in the field was based primarily on ease of recognition, larger and more informative body sherds without rims or bases may have been overlooked.

Table 4.2 summarises the distribution of vessel parts across the three sectors of the Darband Wall survey area. In all sectors, rims constitute the overwhelming majority of diagnostic finds (78–83%), followed by bases, which form 7–15% of the assemblage. Body sherds account for less than 7% in any sector, and handles are consistently rare. The “missing” category includes fragments numbered in the original sherd description but later not

documented in photography nor drawing or sherds which got lost in the documentation process. This dominance of rim sherds reflects the collection strategy, which prioritised morphologically distinctive fragments, and does not necessarily correspond to the true proportions of vessel parts present on the site.

Sector	Rim	Body	Base	Handle	Missing
Sector 21	76 (81.7%)	3 (3.2%)	9 (9.7%)	2 (2.2%)	3 (3.2%)
Sector 22	43 (78.2%)	2 (3.6%)	8 (14.5%)	1 (1.8%)	1 (1.8%)
Sector 23	147 (83.1%)	11 (6.2%)	12 (6.8%)	2 (1.1%)	5 (2.8%)

Table 4.2: Summary of the distribution of vessel parts across the three sectors of the Darband Wall.

The dataset's interpretive potential is constrained by several factors: the absence of stratigraphic context; the unknown relationship of the sherds to any architectural or depositional features; the prolonged exposure of the material to surface weathering, which has resulted in pronounced fragmentation and surface erosion; and the inconsistency of the recording procedures. While the quantification by part of vessel provides a useful descriptive overview, it cannot be used to reconstruct vessel inventories or calculate reliable functional ratios. Similarly, the lack of fabric and surface-treatment data limits technological interpretation, and the absence of systematic spatial recording within each sector prevents fine-scale distributional analysis.

Given these limitations, the primary aim of the present study is to produce the first comprehensive publication of this assemblage, organising it into a coherent typological framework. Where parallels can be identified with published corpora from other sites in the region, tentative chronological attributions will be made. These attributions must, however, be treated as provisional, reflecting the highly fragmentary nature of the dataset and the biases inherent in its collection. The publication is intended not only to place this material into the broader discussion of regional ceramic development, but also to preserve the record of an assemblage that, given its current state of storage and documentation, may otherwise be at risk of remaining inaccessible to further research.

5 Pottery analysis

Ceramic artefacts are a ubiquitous find on archaeological sites, and their study (ceramic analysis) provides insights into chronology, technology, trade, and daily life. Over decades, archaeologists have developed a range of analytical approaches to extract information from pottery assemblages. Broadly, these approaches can be categorised into: (a) **form and typology** – examining the shape and style of vessels; (b) **fabric and technology** – investigating the clay composition and manufacturing techniques; (c) **decoration** – analysing surface treatments and motifs; (d) **quantitative methods** – applying statistical analyses to ceramic datasets; (e) **chronological analysis** – using pottery to build relative or absolute timelines; and (f) **contextual and functional interpretation** – understanding how ceramics were used and deposited in past contexts.

In this chapter, each of these facets is reviewed to provide a theoretical overview of ceramic analysis in archaeology, with an emphasis on methodologies relevant to the Darband Wall ceramics. Special attention is given to standardised terminology for vessel parts, as consistent definitions are crucial for clear communication. The chapter concludes by explaining why a primarily morphological typological approach is adopted for the Darband Wall ceramic assemblage, given the nature of the material and data available.

5.1 Ceramic Terminology: Vessel Parts and Definitions

Consistent terminology is fundamental in pottery analysis. Vessels are typically described by referencing their constituent parts, each of which has a standard definition in archaeological usage.

The **rim** denotes the edge of the vessel's orifice (mouth); the term *lip* may refer to the rim's outermost edge or thickness. Just below the rim, many vessels have a **neck**, a constricted section that may connect to the broader body. The **shoulder** is the point of maximum width or the transition between the neck and the main **body** of the vessel. The body (or **wall** when referring to a specific cross-section) constitutes the principal container portion of the vessel. At the bottom is the **base**, which can take forms such as a flat base, ring foot, or pedestal foot, and is the portion on which the vessel would originally sit. Vessels often have **handles** or **lugs** (small loop or knob attachments) affixed to the body or neck, which are termed *appendages* or *functional applications*.

Other descriptive terms commonly used include **orifice or rim diameter** (the width of the opening at the rim) and profile descriptors like *open* versus *closed* forms – an "open" vessel (e.g. a bowl or dish) has a mouth as wide as or wider than its height, while a "closed" vessel (e.g. a jar or amphora) has a narrower mouth relative to its body. Features such as **carination** refer to a sharp angle or change in curvature on the vessel profile (often where the shoulder transitions to the body), and terms like *articulated rim* (a rim with a distinct protruding band or thickening) or *plain rim* are used to characterise rim shapes. By employing this standardised vocabulary, researchers ensure that descriptions of ceramics are precise and comparable across studies. The Darband Wall ceramic survey similarly utilises these terms to describe sherds,

noting, for example, whether a fragment represents a rim, a handle, a body sherd, or a base. Clear definition of vessel parts underpins all further typological and morphological analysis presented in this chapter.

5.2 Typological and Morphological Analysis

One core approach in ceramic analysis is typology – the systematic classification of pottery into types based on observable characteristics. A ceramic typology groups sherds or vessels sharing a set of attributes (such as shape, size, or decoration) into defined types, which can then be used for comparison and interpretation. A closely related concept is morphological analysis, which focuses specifically on the form and shape attributes of vessels (the morphology) as the basis for classification. In practice, typological and morphological methods often overlap: many typologies are fundamentally based on vessel morphology.

Typological analysis usually begins by examining form attributes of the ceramics. Researchers identify diagnostic pieces – typically rims, bases, or decorated body sherds – and note attributes like rim shape (e.g. everted, direct, or inverted), lip form (rounded, squared, bevelled, etc.), presence or absence of a neck, body contour (globular, carinated, straight-walled), and base type (flat, ring foot, pedestal). By sorting sherds according to these attributes, preliminary groupings emerge. For example, in her study of Bactrian pottery, Maxwell-Jones initially separated vessels into broad groups of "closed" vs. "open" forms and those with vertical walls, then further subdivided them by presence of a neck, neck shape, rim form, and lip form.[51]

Once initial types are defined, archaeologists often refine the typology by comparing more specimens and checking for consistency or gradations between types. It is common to adjust the groupings by merging overly fine distinctions or splitting types that show internal variability. A type should ideally represent a meaningful group that might correspond to a particular vessel shape or function.[52] In refining types, analysts may also incorporate additional attributes (beyond shape) such as fabric or decoration to ensure types are internally consistent. However, during the purely morphological stage, shape is paramount. Maxwell-Jones, for instance, established an initial set of 177 rim/upper-part types and 40 base/lower-part types in her Bactra study – having very few whole vessels, she created separate typologies for rims and bases (essentially a "top-down" and "bottom-up" classification).[53]

Typological and morphological methods allow archaeologists to manage the often-large quantities of pottery by summarising them into a more tractable number of types. Typologies facilitate comparison between sites or layers (e.g. one can compare the proportion of certain pottery types across different contexts). They also form the backbone of ceramic chronology – types can serve as time markers if they have known date ranges. However, defining types inevitably simplifies variation; in reality, pottery exists on a continuum of forms.[54] Despite

[51] Maxwell-Jones 2015.

1. [52] Orton 1980, 33; Orton – Hughes 2013, 190-191.

[53] Maxwell-Jones 2015, 120-121.

[54] Rice 2005, 285-288.

these caveats, a well-constructed typology is immensely useful. For the Darband Wall ceramics, the morphological typological approach serves as the analytical backbone, given the fragmentary nature of the assemblage and the lack of complete profiles or detailed fabric data.

5.3 Fabric and Technological Analysis

Beyond shape, archaeologists examine the fabric of pottery – that is, the clay body and its inclusions – to understand technology and production. Fabric analysis involves identifying the composition and properties of the ceramic material, often through visual inspection (macroscopic analysis) and sometimes with microscopes or chemical techniques for greater precision. Important attributes include the clay's colour (both at the surface and in the core of a sherd, which can inform on firing conditions), the inclusions or temper (non-clay particles such as sand, grog, mica, etc. added or naturally present in the clay), the texture and hardness of the paste, and features like voids (air pockets) or fissures in the cross-section.[55] Technological analysis also encompasses how the pot was made – forming techniques (wheel-thrown or hand-built), surface finishing (burnishing, smoothing), and firing method and atmosphere.

In a preliminary stage, analysts usually perform macroscopic identification of fabric characteristics. For large assemblages or when lab facilities are limited, visual examination with the naked eye and a hand lens is the primary tool.[56] For example, Maxwell-Jones describes using macroscopic techniques to record the colour of a sherd's paste (both surface and core), the size/shape/frequency of inclusions visible, the presence of voids, and characteristic break patterns.[57] These observations can suggest the general clay type and the kind of temper used. Macroscopic fabric study, while less definitive than laboratory analyses, is invaluable for surveying large quantities of pottery quickly.

A standard approach is to sort a representative sample of sherds by fabric. One might separate sherds into coarse and fine wares, then subdivide by the dominant colour of surfaces and core using a Munsell chart for consistency.[58] After initial sorting, each fabric group is examined under magnification to record inclusion types, abundance, sorting, grain shape, voids, and break characteristics.[59] Paste hardness can be assessed by simple scratch tests by a nail or an iron object.[60] The resulting fabric descriptions usually include paste colour, inclusion type, inclusion sorting and shape, and notable manufacturing marks. Standardised charts for estimating grain size and percentage help reduce subjectivity.[61]

It is also useful to distinguish between the terms **fabric** and **ware**. *Fabric* refers strictly to the clay and inclusions; *ware* encompasses fabric plus typical surface treatments and forms.[62]

[55]Orton – Hughes 2013, 71-77.
[56] Orton – Hughes 2013, 71-72.
[57] Maxwell-Jones 2015, 35-37.
[58] Maxwell-Jones 2015, 36.
[59] Orton – Hughes 2013, 72.
[60] Čapek *et al.* 2022, 208.
[61] Orton – Hughes 2013, 159.
[62] Maxwell-Jones 2015, 109.

While macroscopic analysis sets the stage, more fine-grained techniques such as *petrographic analysis* and *chemical compositional analysis* can greatly enhance understanding of pottery technology.[63] These techniques are now standard in many projects but require laboratory facilities and sometimes destructive sampling. In the Darband Wall project, no such analyses were carried out; as for a macroscopically visible traits, given that it was not possible for the author to examine all the pottery fragments, and that there are not photographs of all the sherds (and the quality of those that exist is very variable), no fabric types or colours were recorded.

5.4 Decorative Analysis

The study of decoration in pottery analysis addresses both the technical and stylistic aspects of surface treatment. Decoration includes any deliberate modification of the vessel's surface beyond the basic shaping and firing, and may serve functional, aesthetic, or symbolic purposes. From an analytical perspective, it is important to document decorative techniques systematically so they can be compared within and between assemblages.

Broadly, decorative techniques can be divided into categories based on how they are applied[64]:

- **Additive techniques** involve adding material to the vessel surface, such as applied clay strips, knobs, or slip painting before firing.
- **Subtractive techniques** involve removing material from the surface, including incision, carving, and impressin.
- **Surface modification** without adding or removing material includes burnishing, polishing, or combing to alter texture and lustre.
- **Colour alteration** can be achieved through slips, washes, paints, or glazes applied before or after firing, sometimes combined with controlled firing atmospheres to produce specific colour effects.

Decorative analysis can help identify cultural affiliations, as certain motifs and techniques are characteristic of particular traditions or time periods. However, in the Darband Wall assemblage, the absence of systematic colour records[65] and the variability in photographic quality limit the extent to which decorative details can be analysed confidently.

5.5 Quantitative and Statistical Approaches

While decorative attributes offer important cultural and functional clues, quantitative and statistical approaches allow archaeologists to evaluate pottery assemblages in terms of measurable patterns and proportions, adding a further analytical dimension to typological, morphological, and technological studies.

[63] Orton – Hughes 2013, 162.
[64] Orton – Hughes 2013, 86-90; Rice, 2015, pp. 144-152.
[65] Colour should be described using standard charts, such as Munsell Soil Color Charts, to reduce subjective variation – but no such chart was used on this pottery assemblage.

Quantitative analysis begins with basic counts: the number of sherds, diagnostic pieces, or identifiable vessel types within an assemblage. These counts are often standardised into metrics such as *Minimum Number of Vessels* (MNV) or *Estimated Vessel Equivalents* (EVE). MNV seeks to establish the smallest possible number of complete vessels represented by the sherds, based on non-overlapping diagnostic fragments. EVE, by contrast, uses rim circumference measurements to estimate the proportion of a complete vessel preserved. [66]

More advanced methods apply statistical analysis to explore the relationships between types, fabrics, or contexts. Correspondence analysis, for example, can identify associations between vessel types and stratigraphic layers, while cluster analysis groups similar assemblages together based on attribute frequencies.[67] Quantitative data can also be used to model production, consumption, and discard patterns, providing insight into the organisation of ceramic industries and the economic behaviour of communities.[68]

In the case of the Darband Wall ceramics, the high fragmentation of the sherds limits certain quantitative measures. Rim diameter measurement, for example, is often impossible due to incomplete curvature. Nevertheless, counts of diagnostic rim, base, and decorated body sherds will be recorded, and proportional representation of different morphological categories will be used to characterise the assemblage.

5.6 Chronological Methods

Ceramics have long been used as a basis for relative dating because their forms and decorative styles tend to change over time in recognisable ways. Chronological methods in ceramic analysis can be divided into typological sequencing and seriation. Typological sequencing places vessel forms into a chronological order based on changes in style, fabric, or decoration; this often relies on cross-dating with securely dated assemblages from other sites.[69]

Seriation involves arranging types or attribute frequencies into a sequence such that similar assemblages are placed adjacent to each other, producing patterns that reflect chronological change. This method works best when styles change gradually and when the assemblages being compared are from broadly similar contexts. [70]

Absolute dating of ceramics is more difficult, as it requires association with independently dated materials, such as coins, inscriptions, or radiocarbon-dated organics in the same context. In some cases, archaeometric techniques, such as thermoluminescence dating, can be applied directly to ceramic material, though these are rarely used for bulk assemblage dating.[71]

For the Darband Wall assemblage, chronological interpretation, when possible, will rely on comparison with published typologies from nearby regions, given the absence of stratified contexts or associated datable material.

[66] Orton – Hughes 2013, 21-22, 210.
[67] Orton – Hughes 2013, 178-180.
[68] Orton – Hughes 2013, 236-238.
[69] Orton – Hughes 2013, 219-220.
[70] Orton – Hughes 2013, 226-232.
[71] Rice 2005, 440-443.

5.7 Contextual and Functional Interpretation

Understanding how ceramics were used and deposited requires integrating morphological, technological, decorative, and quantitative data with archaeological context. Functional interpretation can draw on vessel form (capacity, stability, thermal properties), wear patterns, and residues to suggest uses such as storage, cooking, serving, or transport.[72] Experimental archaeology has demonstrated how certain forms perform in specific tasks, allowing for more confident functional assignments.

Contextual analysis examines the archaeological setting in which ceramics are found: domestic structures, refuse pits, storage facilities, or funerary contexts may each reflect different usage and deposition patterns. At a site level, spatial analysis of pottery distribution can reveal activity zones, while at a regional scale, comparative assemblage analysis can illuminate patterns of exchange or cultural influence.[73]

In the Darband Wall survey, all of the pottery was recovered from surface scatters without associated features, limiting the scope for contextual interpretation. Because functional categories can be misleading when based on incomplete or non-contextualised material, no formal functional classification will be attempted.

5.8 Justification for Morphological Approach

The choice of analytical method for the Darband Wall ceramics is dictated by the nature of the assemblage and the limitations of available data. The material is highly fragmentary, with no complete vessel profiles and over all the assemblage is very small. Many fragments lack sufficient curvature to allow accurate rim diameter measurement or are preserved much below the rim to allow for more precise shape recognition.

No fabric analysis – whether macroscopic grouping, petrography, or chemical composition – has been undertaken for the assemblage. The absence of thin-section or compositional data precludes technological or provenance studies, while the lack of Munsell colour readings in the original documentation makes colour-based typology unreliable.

In addition, the photographic record suffers from **inconsistent lighting and resolution**, making it difficult to assess surface treatments accurately. Functional interpretation is further constrained by the absence of archaeological context: most finds come from surface scatters without associated features or stratigraphic control. Because functional categories can be misleading when based on incomplete or non-contextualised material, no formal functional classification will be attempted. Where vessel use is discussed, it will be framed cautiously and grounded in morphological comparison rather than assigned to rigid functional types.

Given these constraints, the most appropriate analytical strategy is a morphological typological approach. This involves the systematic recording and classification of diagnostic sherds — primarily rims, bases, and handles — using standardised terminology for vessel parts and

[72] Rice 2005, 236-240.
[73] Orton – Hughes 2013, 206.

profiles. The resulting morphological types will be compared with published parallels from neighbouring regions to identify possible chronological affiliations. While this approach cannot provide detailed technological, provenance, or functional reconstructions, it offers a coherent framework for describing the assemblage, facilitates comparison with other ceramic datasets, and allows for cautious placement within the broader regional sequence.

6 Rim typology

The ceramic material recovered from the Darband Wall represents a heterogeneous assemblage, comprising a range of functional classes from storage jars to fine table vessels. In order to impose a coherent analytical framework on this corpus, this study applies Anna O. Shepard's restricted–unrestricted forms approach[74], a morphological classification system grounded in geometric principles of vessel structure. The system offers an advantage over typologies based on culturally specific "type" names: its criteria are measurable, universally applicable, and can be applied to incomplete vessels, which is of particular importance given the fragmentary nature of the Darband Wall finds.

The decision to employ this approach was influenced by the methodology adopted by Markéta Kobierská in her study of ceramics from the Sherobod Oasis.[75] Like the present work, her dataset derived exclusively from surveys rather than controlled excavation, meaning that stratified contexts—and the chronological control they afford—were absent. In both cases, the ceramic material was highly fragmentary, with very few sherds preserving more than the rim and a small portion of the upper body. Under such conditions, a typological system grounded in measurable geometric features, rather than complete profiles or decorative schemes, offers the most reliable and reproducible framework for classification.

6.1 Principles of the Method

The restricted–unrestricted typology begins with the determination of a vessel's structural class—whether it is unrestricted or restricted—based on the relationship between the orifice diameter and the vessel's maximum diameter.[76]

- Unrestricted forms: Orifice diameter is equal to or greater than the maximum diameter, with rim tangents vertical or inclined outward. These forms permit unobstructed access to the interior, favouring activities such as food preparation or serving and display of food or liquids.
- Restricted forms: Orifice diameter is smaller than the maximum diameter. These are subdivided into:
    - Simple restricted – no neck; restriction formed by the body's curvature above the maximum diameter.
    - Dependent restricted – restriction is defined by a corner point in the profile, above which the vessel wall slopes inward.
    - Independent restricted – presence of a neck separated from the body by an inflection or corner point, often associated with pouring or controlled dispensing, storage and transport of liquids.[77]

[74] Shepard 1985, 224-255.
[75] Kobierská 2016.
[76] Shepard 1985, 228-230.
[77] Shepard 1985, 230-232.

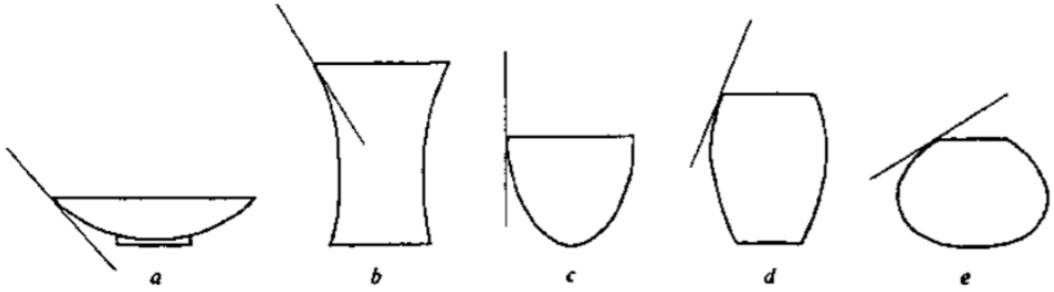


Fig. 6.1: Unrestricted (a-c) and simple restricted (d-e) vessels (Shepard 1985, 229, fig. 21).

6.1.1 Contour Types

After the structural class is determined, vessels are further categorised by contour type—a refinement that captures the complexity of the vessel's outline[78]:

- Simple contours – continuous curves without corner or inflection points.
- Composite contours – profile consists of two or more straight or curved segments meeting at a distinct corner point.
- Inflected contours – a smooth reversal from concave to convex (or vice versa) without an angular break.
- Complex contours – multiple corners and/or inflection points, producing elaborate profiles.

This distinction is essential because the location and type of profile change determines whether a restricted form is classed as dependent or independent restricted.

6.1.2 Geometric Shapes in Vessel Description

Shepard's system also employs geometric shapes as reference models for vessel description.[79] Common forms include:

- Sphere – basis for globular vessels; unrestricted if cut through or below the equator, restricted if cut above.
- Ellipsoid – elongated version of the sphere; common in jars and storage vessels.
- Ovaloid – intermediate between ellipsoid and cylinder; frequently seen in amphora-like bodies.
- Cylinder – often used for straight-sided storage jars.
- Cone – typically forming the lower portions of beakers or conical cups.
- Hyperboloid – concave-sided form, often in neck or foot sections.

Comparisons to these geometric norms provide a standardised vocabulary for vessel morphology, facilitating comparison with other assemblages.

[78] Shepard 1985, 230-232.
[79] Shepard 1985, 233-236; Orton – Hughes 2013, 196-197.

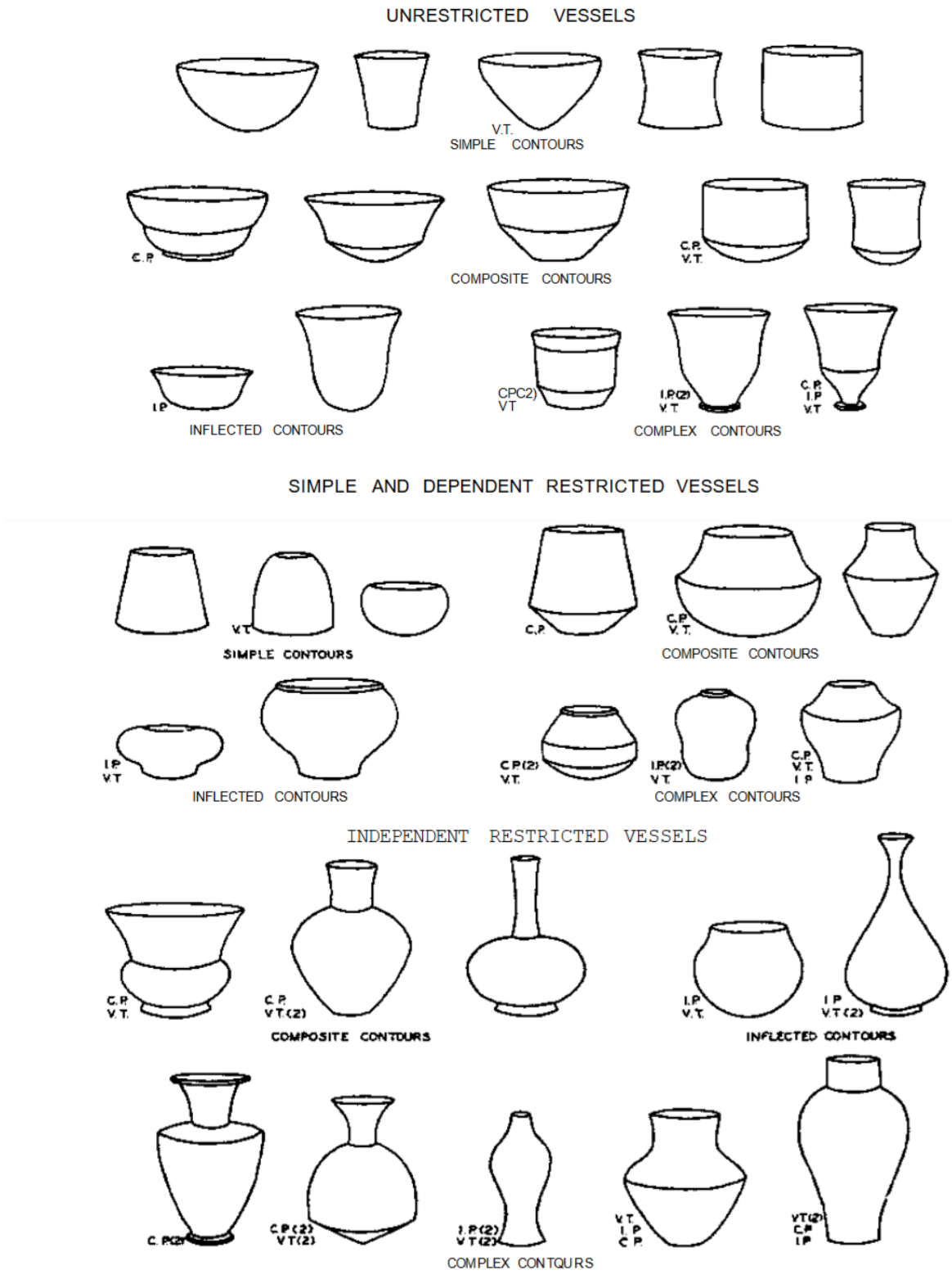


Fig. 6.2: General system of shape classification (Shepard 1985, 231, fig. 22).

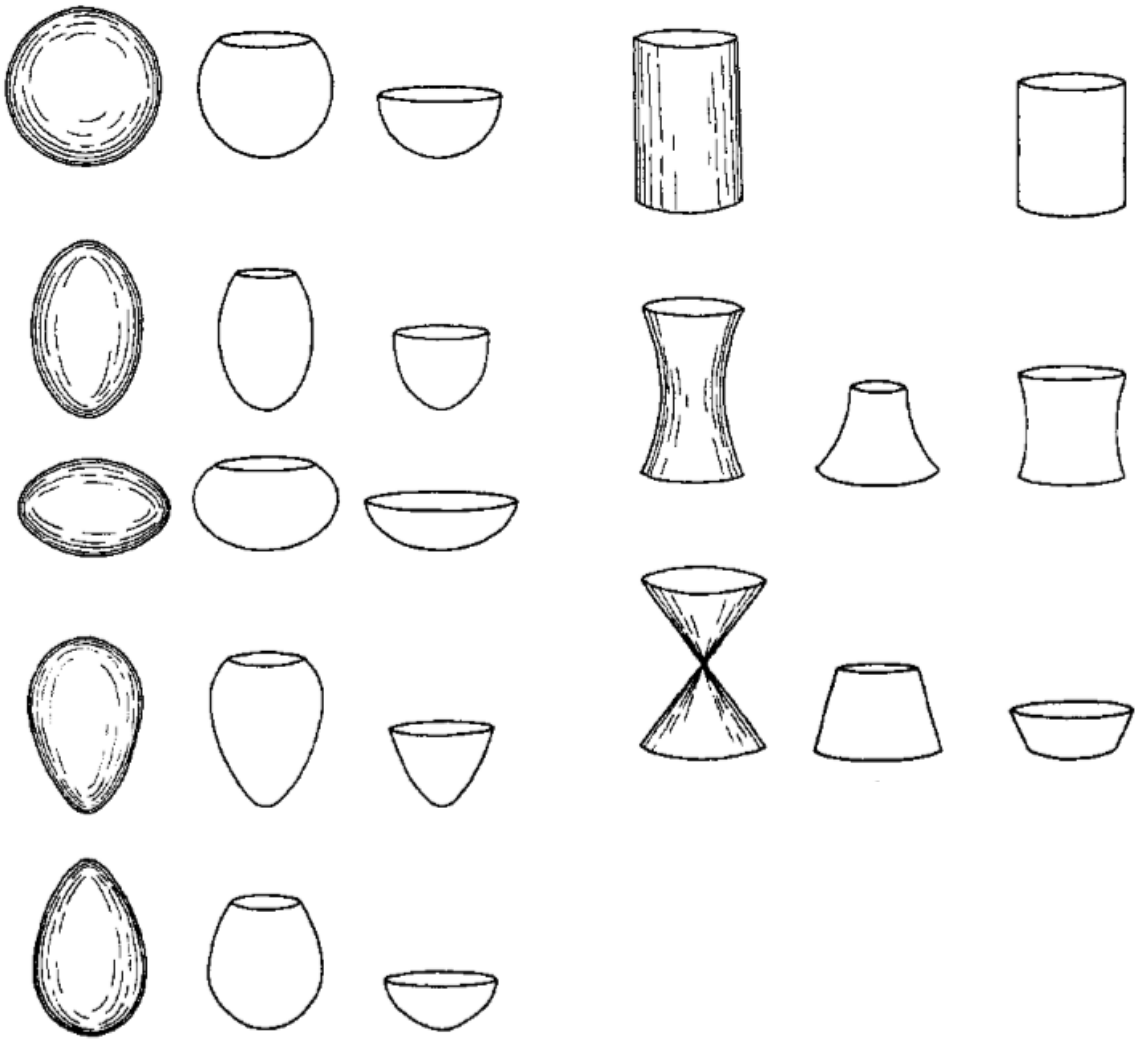


Fig. 6.3: Geometric shapes used for vessel shape description – sphere, ellipsoid, ovaloid, cylinder, hyperboloid and cone (Shepard 1985, 234-235, figs. 23 and 24).

6.2 Adaptation for the Darband Wall Assemblage

The Darband Wall assemblage presents significant methodological challenges. Surface collections have produced almost exclusively rim and upper-body sherds; with only a few bases (which will be described in more detail in the next chapter), handles and decorated body sherds; complete profiles are absent.

This extreme fragmentation is especially problematic for necked vessels (restricted independent forms). If only a portion of the neck survives, the defining inflection or corner below the break may be missing, increasing the risk of misclassification. And in case of very small rim fragments, even their restrictiveness is sometimes unclear.

Misclassification can distort functional interpretations. If for example necked storage jars are mistaken for unrestricted bowls, analyses might wrongly suggest a predominance of serving vessels in areas actually used for storage.

However, trying to "complete" missing vessel profiles is an even greater danger. Forced reconstructions rely on parallels from other sites or assumed vessel morphologies, introducing subjectivity and potentially introducing shapes not present in the Darband dataset. Such speculative reconstructions risk creating artificial typological homogeneity or misleading chronological signals. Shepard's framework avoids these pitfalls by grounding classification strictly in observable evidence.

For this project, incomplete profiles that lack decisive morphological markers are recorded as "undetermined" rather than forced into a structural class.

Despite the challenges posed by extreme fragmentation and the absence of stratified contexts, the restricted–unrestricted approach, adapted from both Shepard's original formulation and Kobierská's successful application in the Sherobod Oasis, offers a robust and transparent framework for classifying the Darband Wall pottery. It minimises speculative reconstruction, limits subjectivity, and produces a dataset that is internally consistent, comparable, and suitable for future functional, spatial, and chronological analyses.

6.3 Coding System for Rim Classification

In order to ensure consistency in the classification of rim fragments from the Darband Wall assemblage, a coding system has been developed that integrates the restricted–unrestricted framework of Anna O. Shepard with the practical needs of survey-derived, highly fragmentary datasets.

Each rim type is assigned a three-part alphanumeric code composed of:

1. **Structural Class Abbreviation** – based on Shepard's categories:
    - **U** = Unrestricted
    - **R** = Restricted
2. **Contour Type Abbreviation** – reflecting the outline of the profile:
    - **S** = Simple
    - **C** = Composite
    - **I** = Inflected
    - **X** = Complex
3. **Geometric shape** – for purposes of the Darband Wall assemblage all spherical, ellipsoid and ovaloid shapes will be grouped together under the spherical shapes, as the high fragmentation (very often only a very small part of the body is preserved) does not allow for more exact shape determination.
    - S = spherical
    - Y = cylindrical
    - H = hyperboloid

- C = conical

For example, the code **R-I-H** denotes a Restricted vessel with an Inflected contour and a Hyperboloid shape.

Each coded type is accompanied a number of fragments, number of recognized types, frequency of each type, known parallels from other sites, a measurement range for rim diameter, and any relevant notes on distinguishing features. Fabric and decoration are not recorded in this step, ensuring that the typology remains purely morphological.

This coding system is self-explanatory, expandable, and transparent, allowing newly identified rim shapes to be integrated without renumbering the entire corpus.

6.4 Unrestricted Vessels = U

Unrestricted vessels, characterised by an orifice diameter equal to or greater than the vessel's maximum diameter and with rim tangents vertical or inclined outward, form slightly over a half of the Darband Wall ceramic assemblage rims (total of 140 rim fragments). Within this category, **simple contours** are the best represented, providing a sufficient number of diagnostic sherds to allow for a more detailed subdivision based on their underlying geometric form. Four geometric categories are distinguished:

1. **Spherical, ellipsoid and ovaloid** – rounded profiles, including hemispherical bowls and globular open forms.
2. **Cylindrical** – straight-sided walls with little or no curvature.
3. **Hyperboloid** – inwardly concave walls, often narrowing towards the base.
4. **Conical** – outwardly tapering profiles with straight or slightly curved sides.

In contrast, unrestricted vessels with **composite** and **inflected** contours are represented by too few examples to permit meaningful further division. All such specimens are therefore grouped into two broad categories—composite unrestricted and inflected unrestricted—without internal subdivision.

This arrangement ensures that where sufficient material exists, a more refined geometry-based classification is applied, while maintaining a practical and transparent system for less well-represented forms.

6.4.1 Group U-S-S = Unrestricted Simple-Contoured Spherical Fragments

Number of fragments in this group: 39

Sector 21: 11

Sector 22: 12

Sector 23: 16

Number of types:

Frequency: multiple occurrences of types 2 (4x), 3 (2x), 6 (3x), 8 (2x), 9 (4x), 10 (4x), 11 (4x), 12 (7x) and 13 (4x)

Rim diameter range: 11-28 cm (average 16.51 cm, median 15 cm). There are a few fragments with uncertain diameter and one with an unknown diameter (BA5_21_40).

Parallels: 1: Houal 2016, fig. 2.2; Martínez Ferreras et al. 2016, 739, tab. 1, KPT-10

2: Dvurechenskaya 2023, 154, рис. 8.4; Kobierská 2016, 68, fig. 5.7j (RI.11); Zavyalov 2008, 165, рис.74.17 (uncertain)

4: Kobierská 2016, 66, fig. 5.6j (RI. 10)

8: Kobierská 2016, 70, fig. 5.8e (RI.12); Martínez Ferreras et al. 2016, 741, tab. 1, KPT-22 (uncertain); Maxwell-Jones 2015, 333, fig. 422 (R167)

9: Dvurechenskaya 2023, 157, рис. 9.4 (uncertain); Kobierská 2016, 68, fig. 5.7a (RI.11)

10: Maxwell-Jones 2015, 328, fig. 414 (R142)

12: Dvurechenskaya 2022, 15, fig. 2.14-19

13: Dvurechenskaya 2023, 146, рис. 1.9 (uncertain)

Notes: Types 8–13 are very similar. Types 8 and 9 both represent longer, oval bowls, but type 8 is distinguished by a slightly outward-slanting rim end. Types 10–13 represent more rounded bowls, which differ from one another only in the shape of the rim: type 10 has a rim narrowed at the end, type 11 has a rim slightly widened at the end, type 12 has a rim set vertically upwards, and type 13 consists of semicircular bowls whose rim neither widens nor narrows.

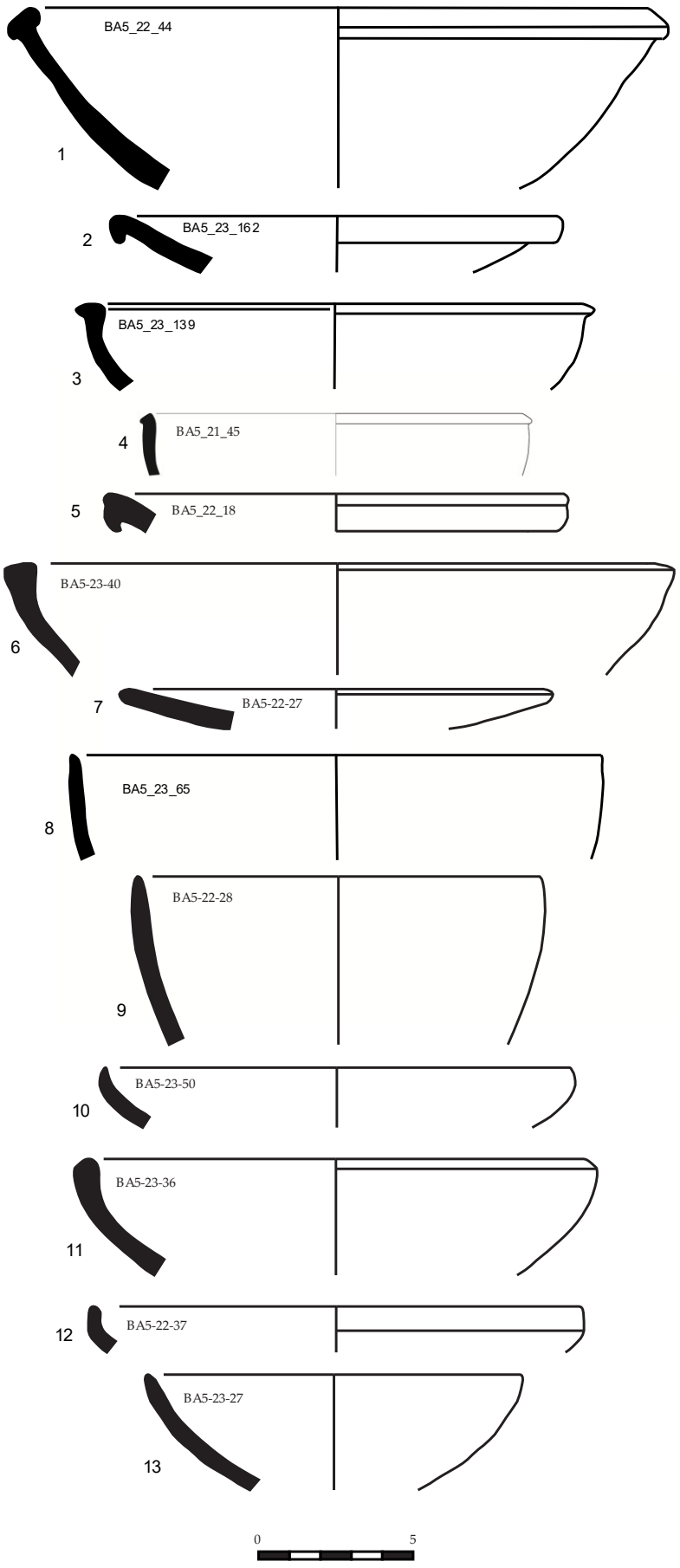


Fig. 6.4: Unrestricted simple spherical types (U-S-S).

6.4.2 Group U-S-Y = Unrestricted Simple-Contoured Cylindrical Fragments

Number of fragments in this group: 23

Sector 21: 7

Sector 22: 3

Sector 23: 13

Number of types: 18

Frequency: multiple occurrences of types 2 (2x), 7 (4x), 8 (2x)

Rim diameter range: 3-28 cm (average 13.14 cm, median 12 cm).

Parallels: 2: Dvurechenskaya 2023, 159, рис. 12.3; Martínez Ferreras et al. 2016, 740, tab. 1, KPT-13; Sverchkov 2013, 52, рис. 44.20-24 and 85, рис.73.13.

7: Dvurechenskaya 2023, 163, рис. 12.3; Houal 2016, fig. 3.6.

9: Maxwell-Jones 2015, 219 (R92) (uncertain)

15: Zavyalov 2008, 162, рис.74, тип IIa.

16: Kobierská 2016, 72: RI.13a

Notes: It is quite probable that type 1 = type 2

Types 6 and 10 are very similar.

Types 7, 8 and 9 are very similar.

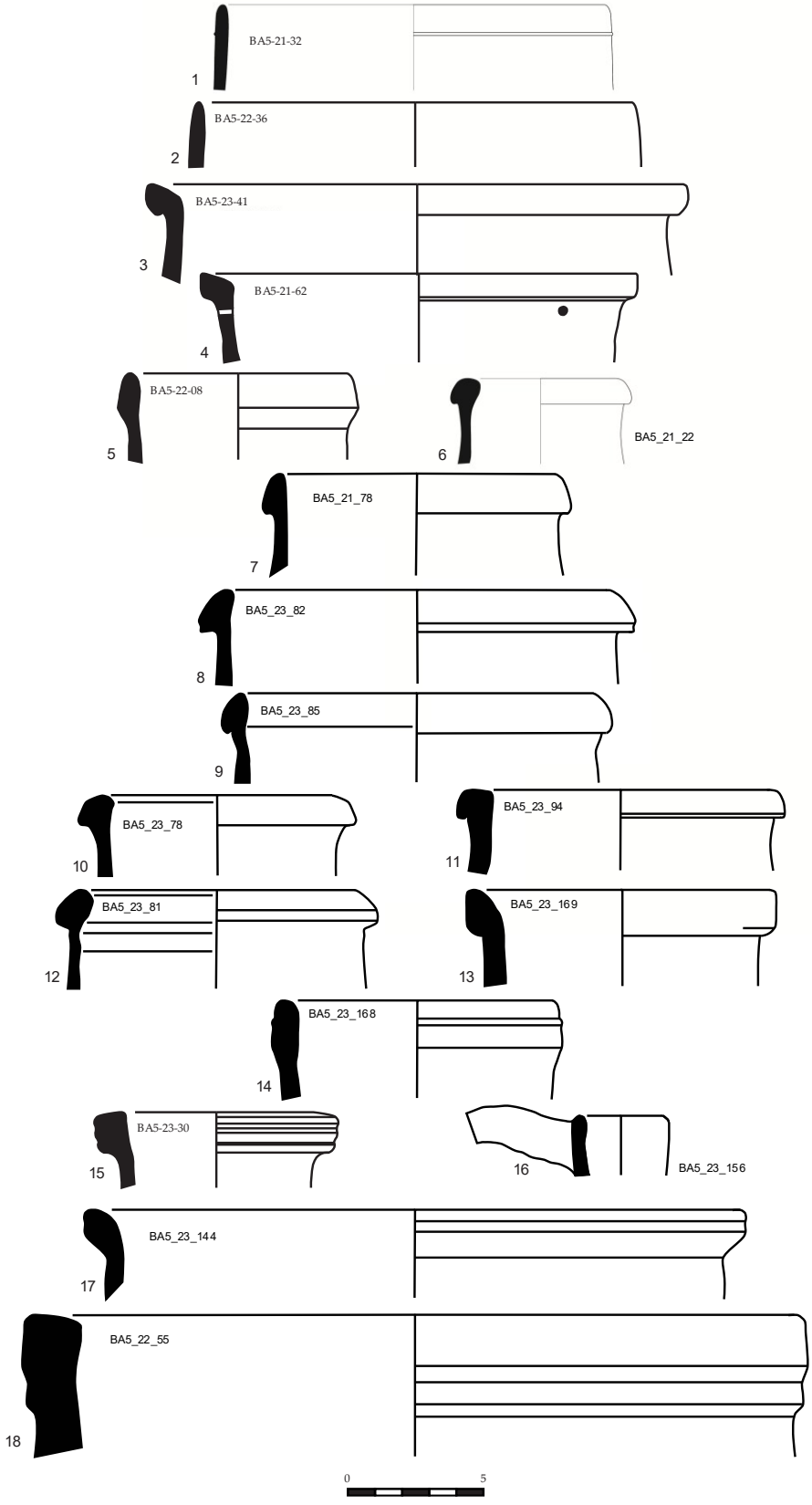


Fig. 6.5: Unrestricted simple cylindrical types (U-S-Y).

6.4.3 Group U-S-H = Unrestricted Simple-Contoured Hyperboloid Fragments

Number of fragments in this group: 26

Sector 21: 10

Sector 22: 2

Sector 23: 14

Number of types: 17

Frequency: multiple occurrences of types 2 (5x), 3 (2x), 7 (2x), 8 (2x), 14 (2x) and 16 (2x)

Rim diameter range: 3-20 cm (average 11.11 cm, median 11 cm)

Parallels:

2: Dvurechenskaya 2023, 147, рис. 2.8

4: Dvurechenskaya 2023, 147, рис. 2.7

6: Dvurechenskaya 2023, 147, рис. 2.10 and 152, рис.6.5

7: Kobierská 2016, 74: RI.14a; Zavyalov 2008, 169, рис.82.26 (uncertain)

14: Houal 2016, 478, fig. 5.4; Kobierská 2016, 74: RI.14o

15: Dvurechenskaya 2022, 16, fig. 21.1

17: Kobierská 2016, 74: RI.14m; Maxwell-Jones 2015, 144, fig. 155 (R15); Zavyalov 2008, 168, рис.81.11 (uncertain)

Notes:

Types 2 and 3 are very similar.

Types 7 and 8 are very similar.

The U-S-H series of types may correspond to the R-S-H types, differing only in that a smaller portion of the body below the rim is preserved here. As a result, the vessels have a smaller maximum diameter, which automatically classifies them as unrestricted forms.

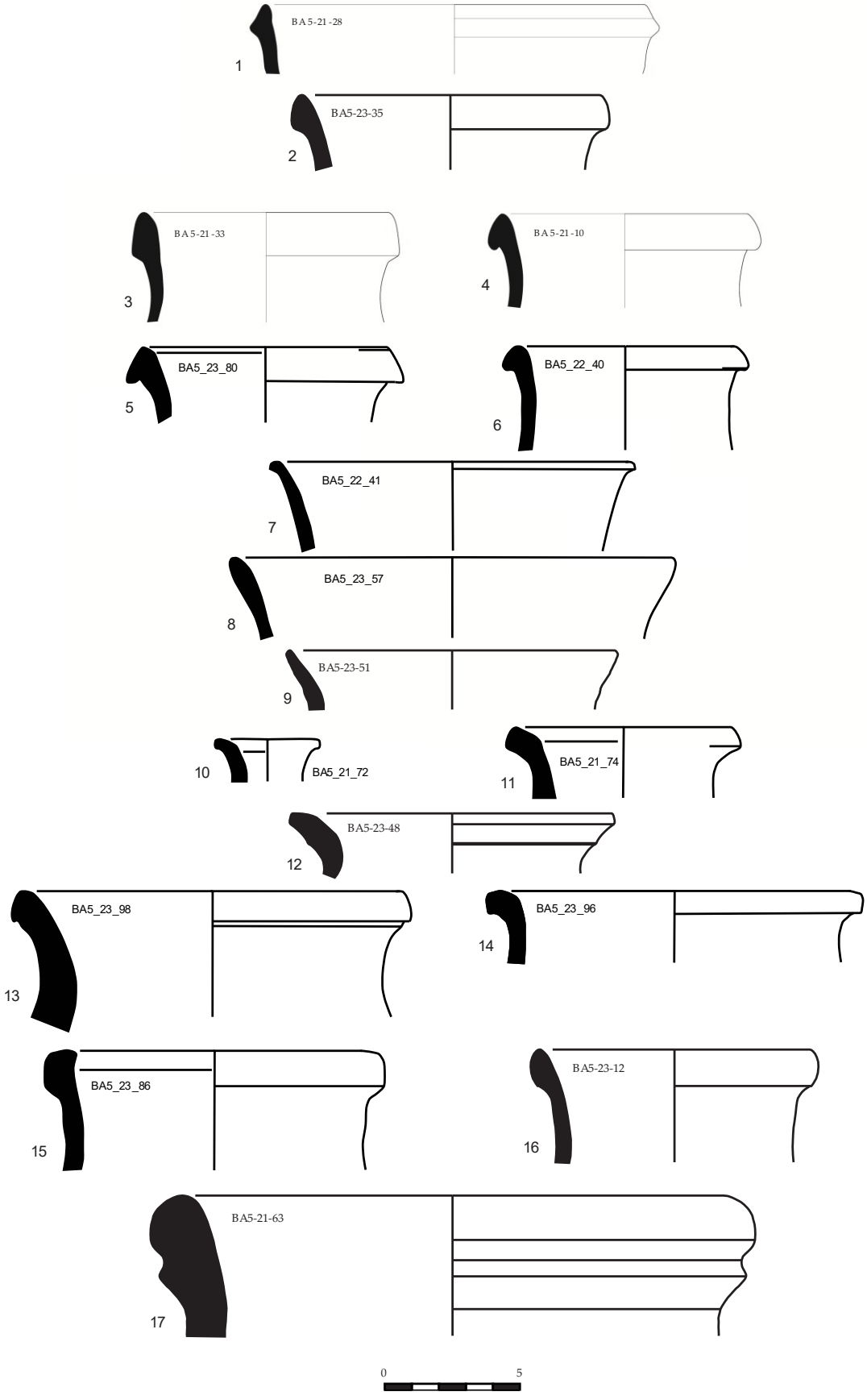


Fig. 6.6: Unrestricted simple hyperboloid types (U-S-H).

6.4.4 Group U-S-C = Unrestricted Simple-Contoured Conical Fragments

Number of fragments in this group: 38

Sector 21: 10

Sector 22: 4

Sector 23: 24

Number of types: 16

Frequency: multiple occurrences of types 1 (2x), 3 (2x), 6 (4x), 9 (4x), 10 (3x), 14 (4x), 15 (5x) and 16 (5x)

Rim diameter range: 10-28 cm (average 16.25 cm, median 16 cm); couple fragments with uncertain diameter. There are a few fragments with uncertain diameter and one with an unknown diameter (BA5_23_142).

Parallels:

1: Dvurechenskaya 2023, 158, рис. 11.2; Kobierská 2016, 76: RI.15ae (uncertain)

2: Dvurechenskaya 2023, 158, рис. 11.1; Kobierská 2016, 76: RI.15ae (uncertain); Maxwell-Jones 2015, 352, fig. 455 (R157)

3: Dvurechenskaya 2023, 158, рис. 11.3; Maxwell-Jones 2015, 352, fig. 456 (R157)

4: Houal 2023, 4, fig. 3.2

6: Martínez-Ferreras 2016, 742, tab. 1.KPT-40

7: Kobierská 2016, 78: RI.15bi; Tsantini et al., 39, tab. 1.KT2

8: Dvurechenskaya 2022, 16, fig. 21.16

9: Dvurechenskaya 2022, 7, fig. 8.15; Dvurechenskaya 2023, 158, рис. 10.3; Martínez-Ferreras 2018, 1047, fig. 3.K6

11: Dvurechenskaya 2023, 146, рис. 1.23 (uncertain)

13: Sverchkov 2013, 86, рис. 74.1, 3

14: Dvurechenskaya 2022, 11, fig. 14.6, 7; Houal 2016, fig. 2.6

15: Houal 2016, fig. 4.1

16: Dvurechenskaya 2023, 163, рис. 14.11; Houal 2023, 10, fig. 7.2

Notes: Types 1, 2, and 3 are very similar in shape, but type 2 is made of grey fabric, whereas types 1 and 3 are made of pinkish clay. Type 1 has the same wall thickness along its entire preserved length, while type 3 tapers slightly towards the rim.

Types 8 and 9 have a similar shape, but they differ significantly in a rim diameter and wall thickness.

Types 13–16 are very similar in shape, but type 14 is deeper than the other types. Types 13, 15, and 16 differ in the inclination of the lip of the rim: in type 13 it slopes downwards away from the body, in type 15 it slopes straight down, and in type 16 it slopes downwards towards the body.

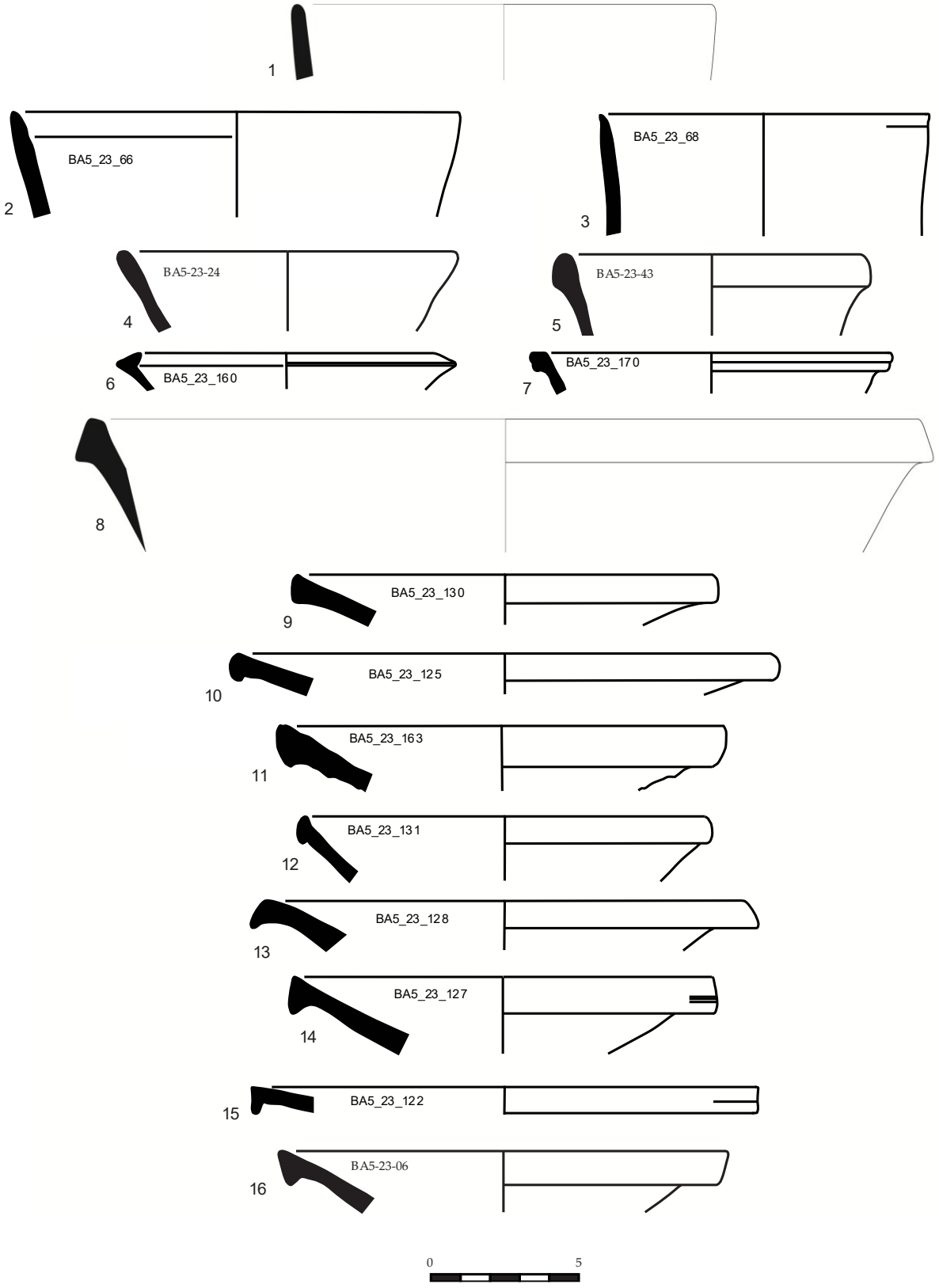


Fig. 6.7: Unrestricted simple conical types (U-S-C).

6.4.5 Group U-C- = Unrestricted Composite-Contoured Fragments

Number of fragments in this group: 9

Sector 21: 3

Sector 22: 0

Sector 23: 6

Number of types: 7

Frequency: multiple occurrences of type 4 (3x)

Rim diameter range: 13-35 cm (average 18.86 cm, median 16 cm); one fragment with unknown diameter (BA5-21-65)

Parallels: 3: Maxwell-Jones 2015, 292, fig. 357 (R122)

4: Dvurechenskaya 2023, 151, рис. 5.1 and 163, рис. 14.1; Martínez-Ferreras 2016, 740, tab. 1.KPT-13; Maxwell-Jones 2015, 360, fig. 468 and 469 (R172)

5: Dvurechenskaya 2023, 157, рис. 9.10 (uncertain)

Notes: Types 6 and 7 are very similar in shape, but type 7 has a more open rim. Type 6 is decorated.

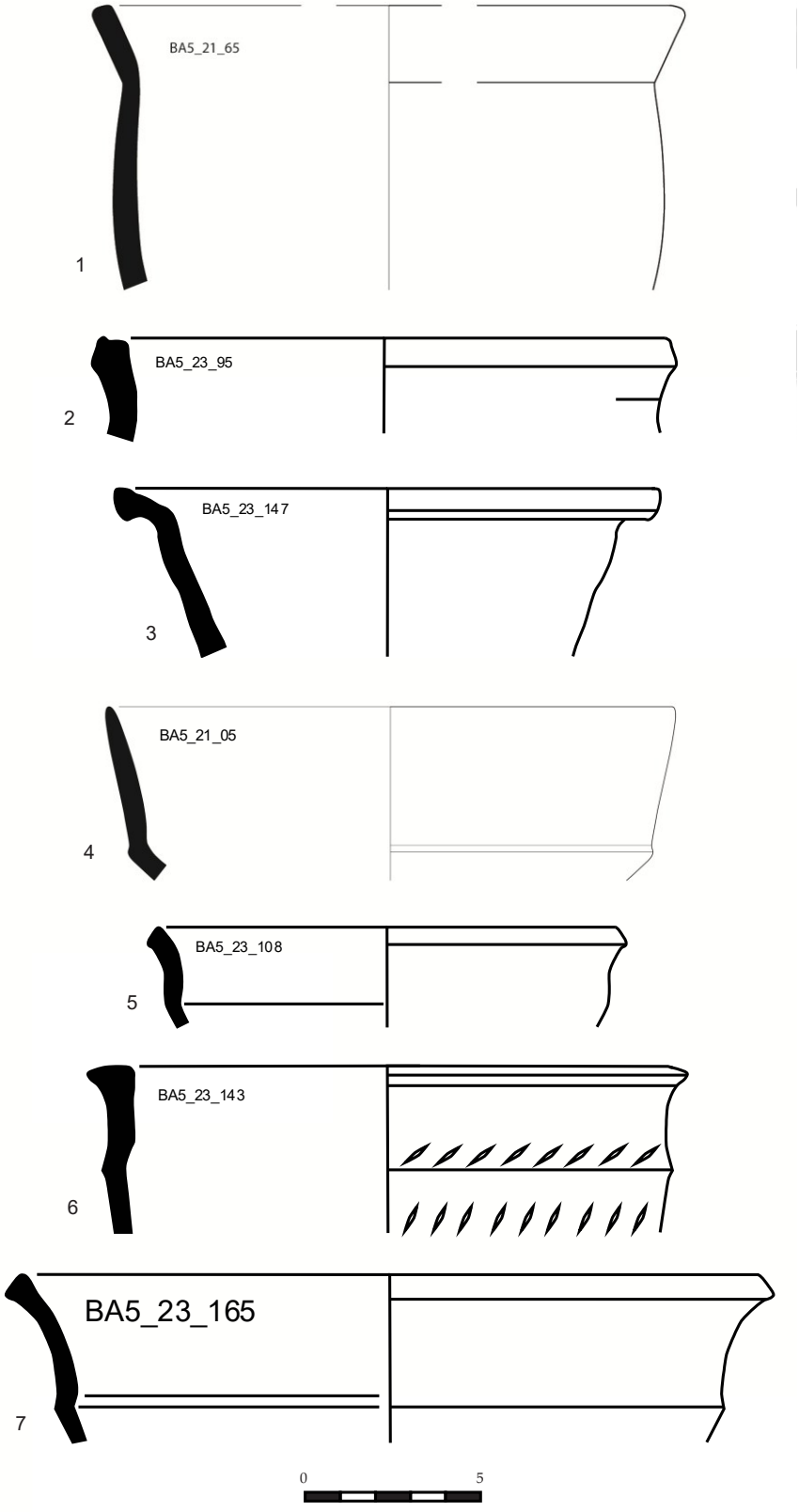


Fig. 6.8: Unrestricted composite-contoured types (U-C-).

6.4.6 Group U-I- = Unrestricted Inflected-Contoured Fragments

Number of fragments in this group: 5

Sector 21: 2

Sector 22: 0

Sector 23: 3

Number of types: 4

Frequency: multiple occurrences of type 4 (2x)

Rim diameter range: 15-24 cm (average 18.40 cm, median 17 cm)

Parallels: 1: Dvurechenskaya 2022, 7, fig. 8.33; Martínez-Ferreras 2016, 742, tab. 1.KPT-40

3: Houal 2016, fig. 2.2 (uncertain); Maxwell-Jones 2015, 320, fig. 403 (R139)

Notes: U-I- type 1 might be the same as U-S-C type 6, only with a bigger part of the upper body preserved.

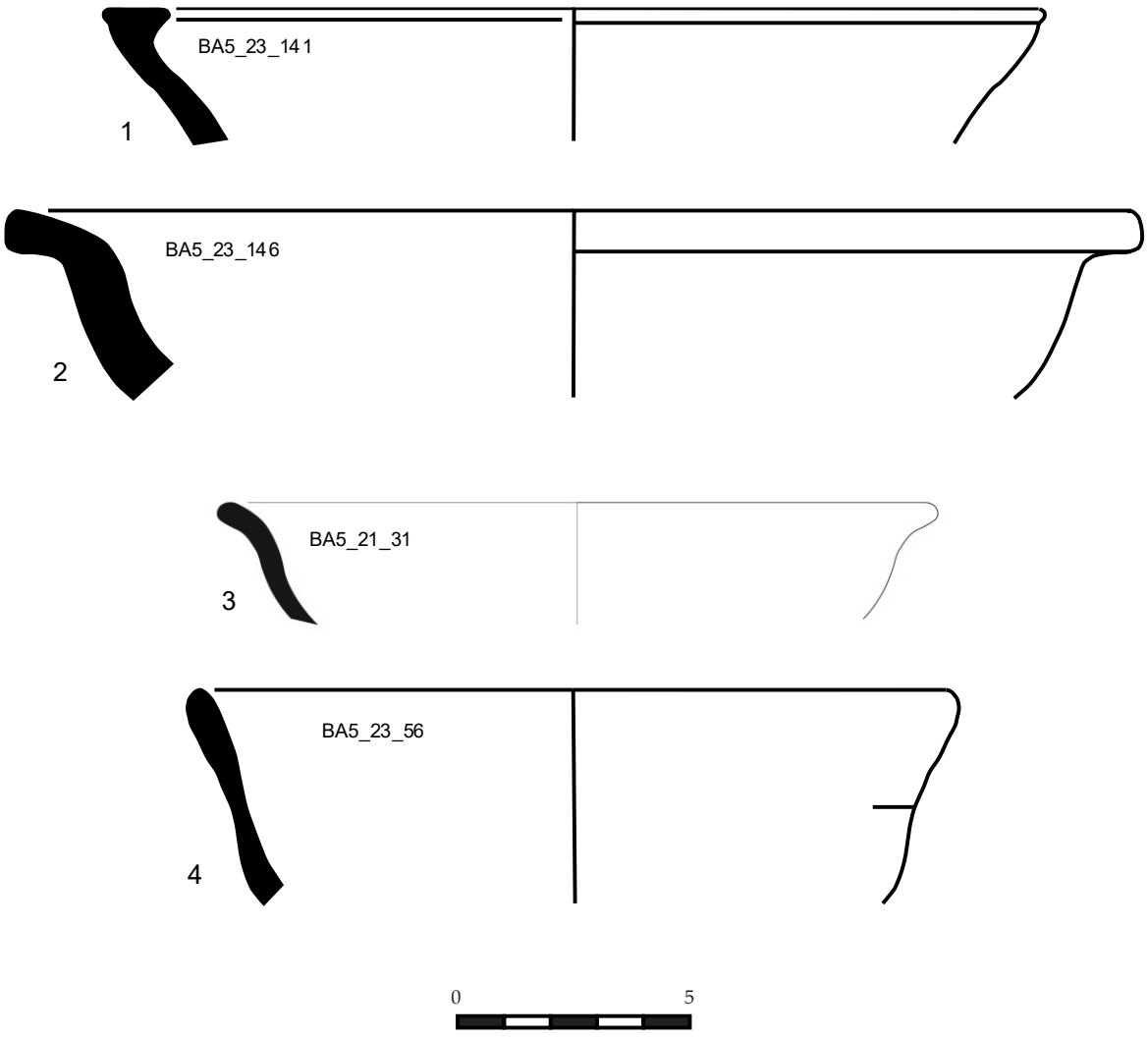


Fig. 6.9: Unrestricted inflected-contoured types (U-I-).

6.5 Restricted Vessels = R

Restricted vessels, defined by an orifice diameter smaller than the vessel's maximum diameter and with rim tangents inclined inward, comprise little bit less than a half of the Darband Wall rims (total of 117 rim fragments). The inward restriction of the opening is often functionally linked to the containment of liquids or small solids, and morphologically it produces a wide range of neck and shoulder configurations.

As with unrestricted forms, the classification begins with those vessels preserving simple contours, where the wall curvature follows a single, continuous geometric profile. In this category, three main geometric groups are recognised:

- Spherical, ellipsoid and ovaloid – rounded profiles in which the curvature extends from rim to base without pronounced angular transitions. In restricted forms, these usually represent globular jars or closed bowls with relatively short necks.
- Hyperboloid – walls that are concave in the upper section, narrowing towards the orifice before expanding again into the shoulder and body. This contour creates a more pronounced restriction than in spherical forms, often enhancing containment and control when pouring.
- Conical – upper walls sloping inward in a straight or slightly convex line from shoulder to rim, producing a sharply defined restriction. These forms can range from sharply tapering necks to more gradual inward slopes, but all retain a clearly conical geometry in the restricted section.

Restricted vessels with composite or inflected contours—where profile lines change curvature abruptly or incorporate multiple arcs—are less common in the assemblage. These include, for example, sharply carinated jars and necked vessels with angular shoulders. Due to their limited representation, such forms are grouped into two broad categories: composite restricted and inflected restricted, without finer subdivision.

This system balances detail with practicality: where sample size allows, vessels are placed into specific geometric categories; where evidence is sparse, broader groupings are maintained.

6.5.1 Group R-S-S = Restricted Simple-Contoured Spherical Fragments

Number of fragments in this group: 64

Sector 21: 21

Sector 22: 10

Sector 23: 33

Number of types:

Frequency: multiple occurrences of types 1 (17x), 3 (7x), 4 (2x), 8 (7x), 13 (2x), 15 (5x), 16 (2x), 17 (5x) and 18 (8x)

Rim diameter range: 10-26 cm (average 16.23 cm, median 16 cm). There are a few fragments with uncertain diameter and three with an unknown diameter (BA5_21_19, BA5_21_57 and BA5_21_60).

Parallels: 1: Dvurechenskaya 2023, 151, рис. 5.19 (uncertain); Houal 2016, fig. 2.2; Kobierská 2016, 90, fig. 5.20g (RII.12); Maxwell-Jones 2015, 332, fig. 421 (R152)

6: Dvurechenskaya 2023, 151, рис. 5.21

8: Kobierská 2016, 90, fig. 5.20p (RII.12); Houal 2023, 9, fig. 6.14; Maxwell-Jones 2015, 333, fig. 422 (R167); Zavyalov 2008, 165, рис.78.6

13: Kobierská 2016, 90, fig. 5.20q (RII.12)

15: Houal 2016, fig. 5.6; Kobierská 2016, 88, fig. 5.19i (RII.11)

17: Kobierská 2016, 86, fig. 5.18a (RII.10); Včelicová 2015, 33, fig. 8.1; Zavyalov 2008, 163, рис.76.1 (uncertain)

18: Maxwell-Jones 2015, 328, fig. 413 (R142); Včelicová 2015, 32, fig. 7.1

Notes: Types 1 and 2 have the same shape and differ only in decoration – an incised line on the body in type 2, while type 1 is undecorated.

Types 3–5 are very similar, but type 4 is larger in size than the others, while type 5 differs in having a rim much more curved inwards than in the other types.

Types 14 and 15 differ only in the lip: type 15 has a simple undecorated rim, whereas type 14 has an incised line on the edge of the rim.

Types 16, 17, and 18 differ in rim thickness – in type 16 the rim widens towards the end, in type 17 it remains the same, and in type 18 it tapers slightly towards the end.

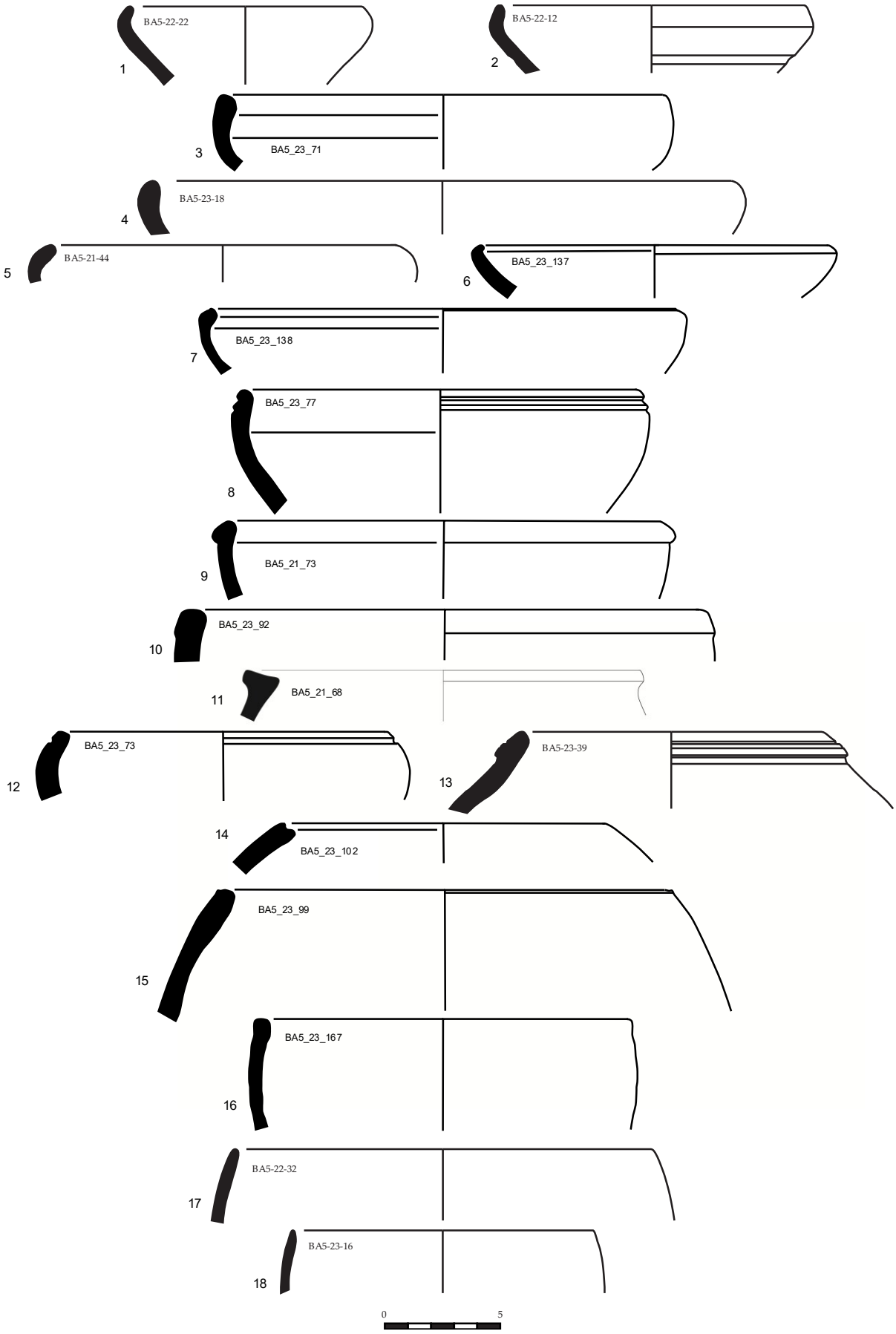


Fig. 6.10: Restricted simple spherical types (R-S-S).

6.5.2 Group R-S-H = Restricted Simple-Contoured Hyperboloid Fragments

Number of fragments in this group: 25

Sector 21: 7

Sector 22: 2

Sector 23: 16

Number of types: 13

Frequency: multiple occurrences of types 1(4x), 2 (3x), 3 (2x), 6 (2x), 10 (3x) and 14 (2x)

Rim diameter range: 5-37 cm (average 15.79 cm, median 13.5 cm). There are a few fragments with uncertain diameter and one with an unknown diameter (BA5_23_152).

Parallels: 13: Dvurechenskaya 2022, 9, fig. 10.3

14: Dvurechenskaya 2022, 9, fig. 10.2

15: Kobierská 2016, 95, fig. 5.22bl (RII.14) (uncertain); Zavyalov 2008, 184, , рис. 97.7

Notes: Types 2, 13, and 14 have a very similar shape, differing only in the rim design – type 2 has a rim ending with a spout-like projection directed almost vertically downwards, with a groove beneath it. Type 13 has a spout-like projection without the groove, slightly tilted outwards, while type 14 has a rounded rim.

Types 1 and 5 might be from the same shape, with a larger portion preserved in type 5, which makes it appear slightly different.

The R-S-H series of types may correspond to the U-S-H types, differing only in that a larger portion of the body below the rim is preserved here. As a result, the vessels have a larger maximum diameter, which automatically classifies them as restricted forms.

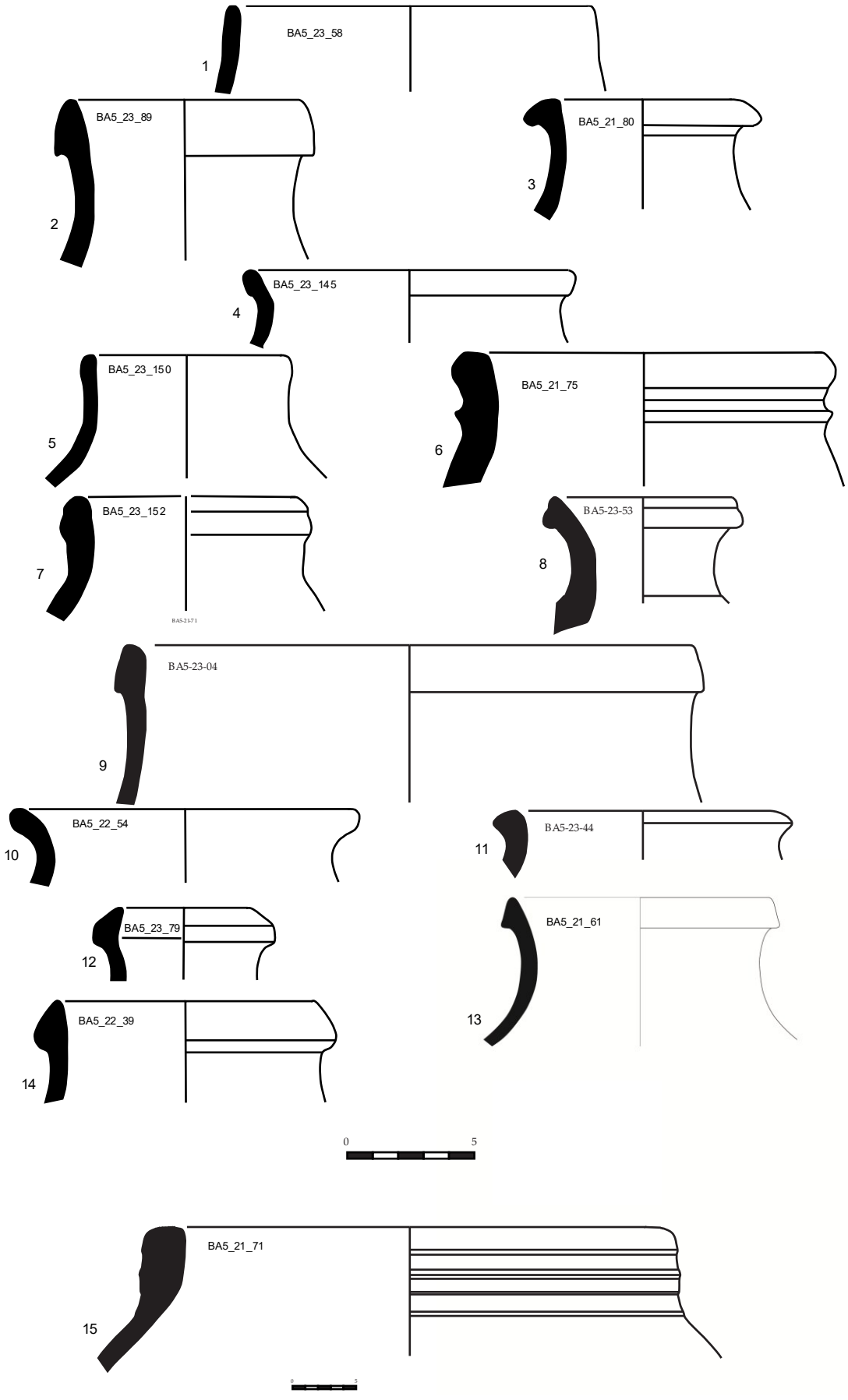


Fig. 6.11: Restricted simple hyperboloid types (R-S-H).

6.5.3 Group R-S-C = Restricted Simple-Contoured Conical Fragments

Number of fragments in this group: 9

Sector 21: 4

Sector 22: 1

Sector 23: 4

Number of types: 6

Frequency: multiple occurrences of types 1 (3x) and 2 (2x)

Rim diameter range: 7-20 cm (average 14 cm, median 14 cm). There are a few fragments with uncertain diameter and one with uncertain inclination.

Parallels: 1: Dvurechenskaya 2023, 158, рис. 11.3; Maxwell-Jones 2015, 352, fig. 456 (R157)

2: Dvurechenskaya 2023, 158, рис. 11.2; Kobierská 2016, 76: RI.15ae (uncertain)

3: Kobierská 2016, 96, fig. 5.23a (RII.15); Zavyalov 2008, 186, рис. 99.5 (uncertain)

4: Kobierská 2016, 96, fig. 5.23b (RII.15); Maxwell-Jones 2015, 361, fig. 470 (R173)

Notes: R-S-C type 1 might be the same as U-S-C type 3.

R-S-C type 2 might be the same as U-S-C type 1.

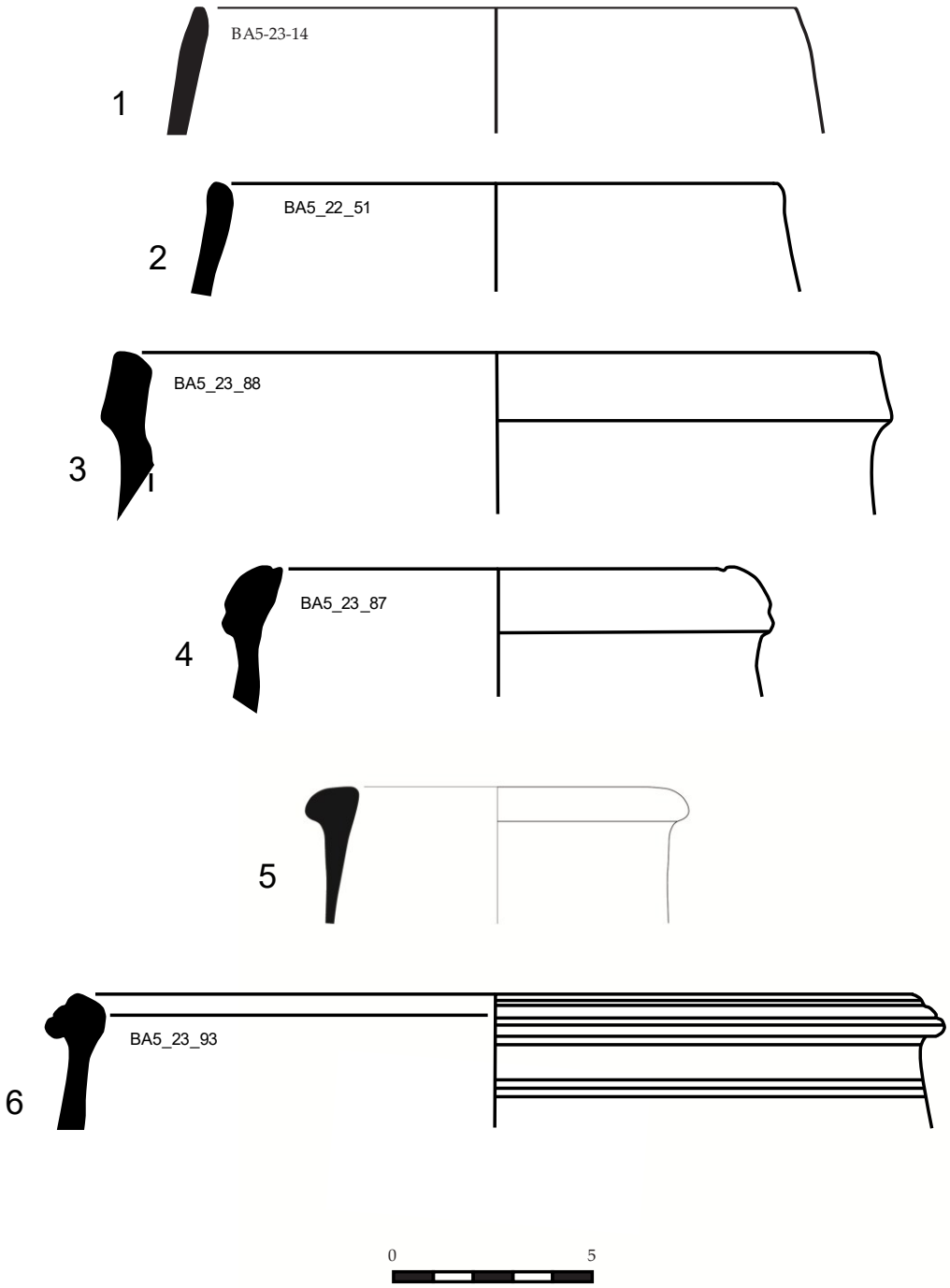


Fig. 6.12: Restricted simple conical types (R-S-C).

6.5.4 Group R-C- = Restricted Composite-Contoured Fragments

Number of fragments in this group: 9

Sector 21: 0

Sector 22: 3

Sector 23: 6

Number of types: 9

Frequency: no multiple occurrences

Rim diameter range: 9-18 cm (average 12.83 cm, median 13 cm). There are a few fragments with uncertain diameter and three with an unknown diameter (BA5_22_21, BA5_23_69 and BA5_23_148).

Parallels: 1: Kobierská 2016, 98, fig. 5.24a (RII.23); Zavyalov 2008, 160, рис. 71.1

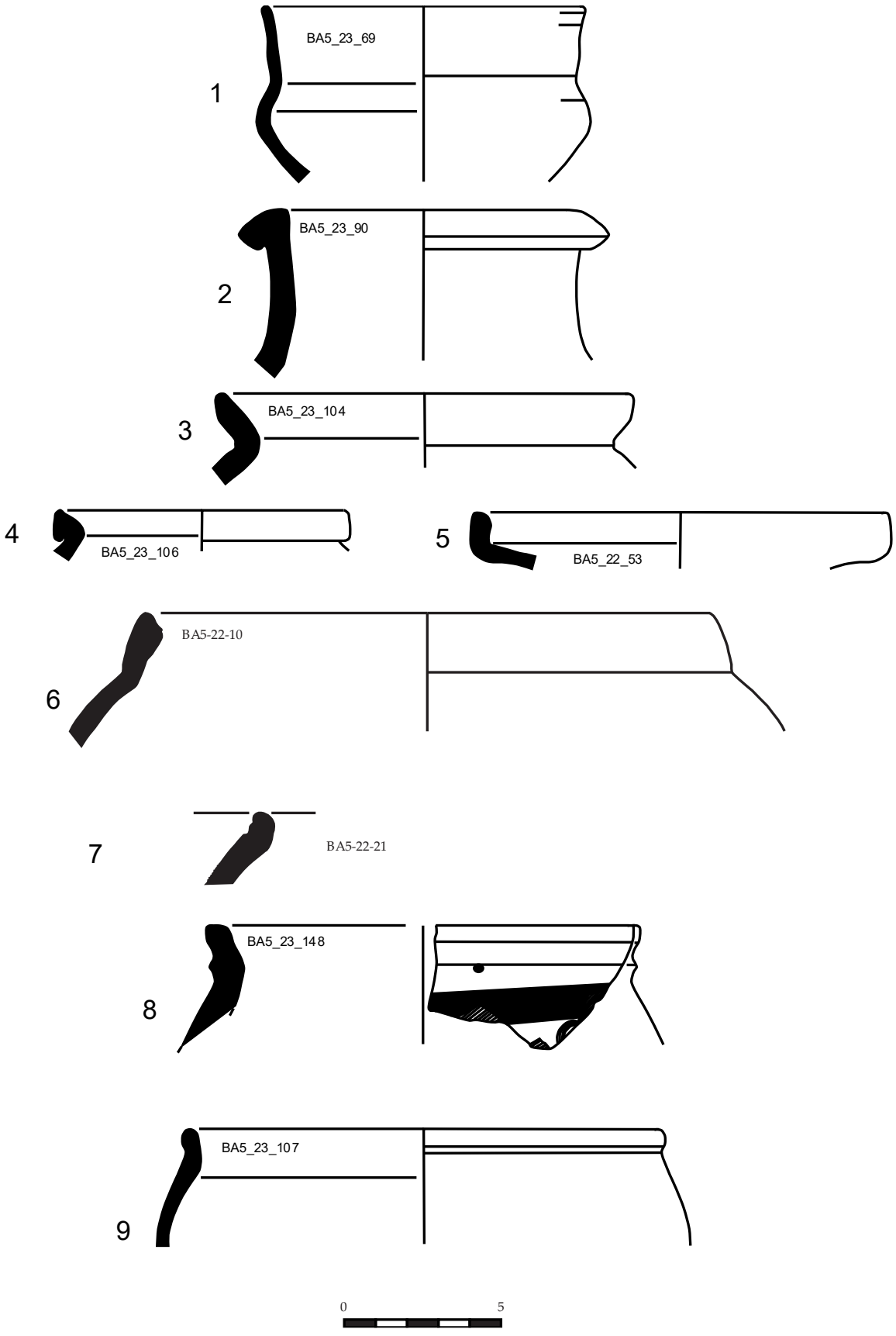


Fig. 6.13: Restricted composite-contoured types (R-C-).

6.5.4 Group R-I- = Restricted Inflected-Contoured Fragments

Number of fragments in this group: 10

Sector 21: 0

Sector 22: 1

Sector 23: 9

Number of types: 7

Frequency: multiple occurrences of types 2 (3x) and 3 (2x)

Rim diameter range: 12-22 cm (average 16.2 cm, median 16 cm). There is one fragments with uncertain diameter.

Parallels: 3: Maxwell-Jones 2015, 328, fig. 413 (R142); Včelicová 2015, 32, fig. 7.1

Notes: R-I- type 3 might be the same as R-S-S type 18.

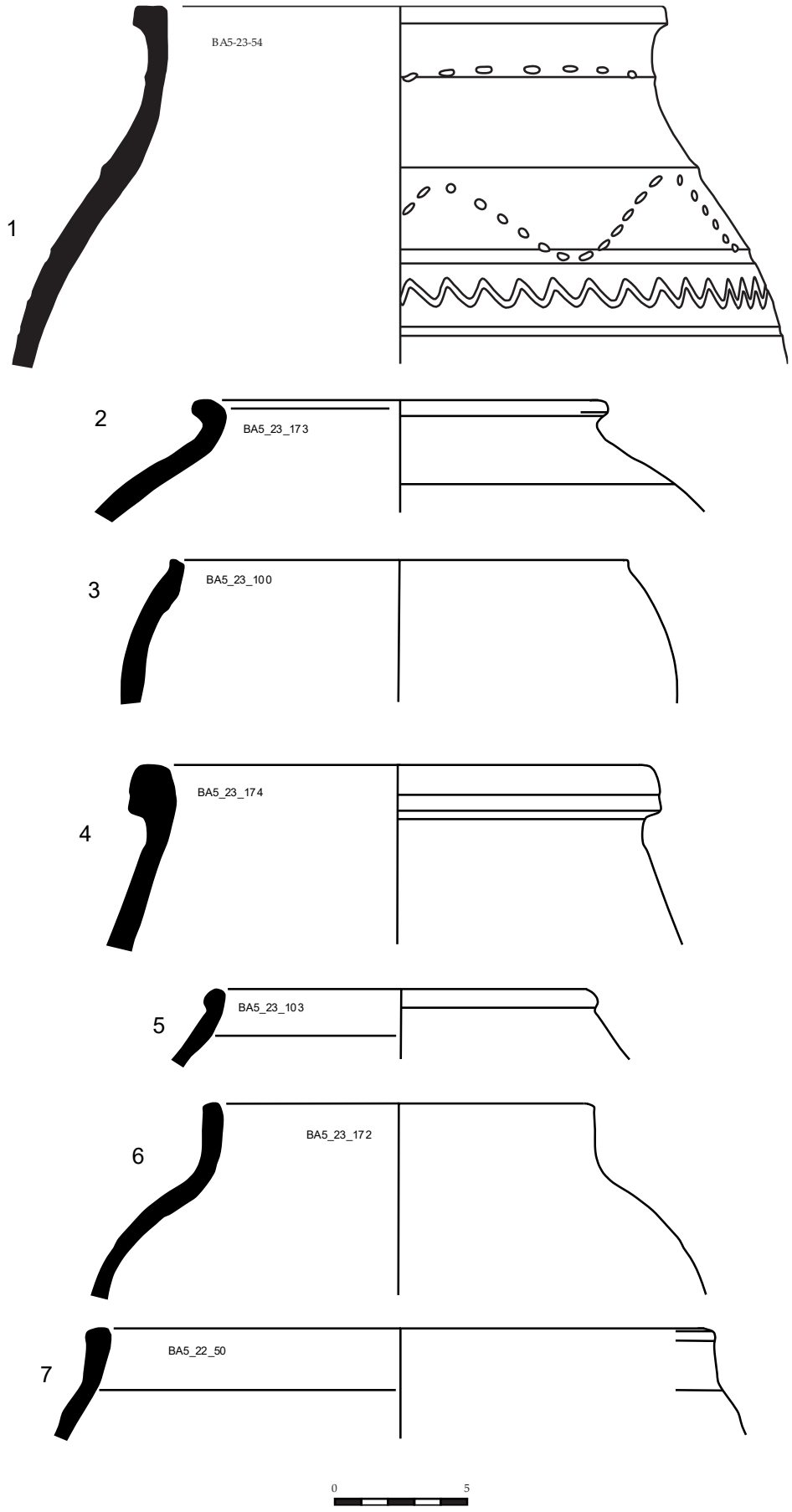


Fig. 6.14: Restricted inflected-contoured types (R-I-).

7 Base Typology

In ceramic studies, the form and finish of vessel bases constitute one of several morphological attributes that may aid typological and chronological assessment. However, their diagnostic potential is generally more limited than that of rims or certain body profiles, particularly in assemblages where preservation is fragmentary and base representation is sparse. In the Darband Wall corpus, the number of preserved bases is small, and the degree of variation in their morphology is correspondingly restricted. For this reason, the present analysis adopts a simplified typological framework, dividing bases into two primary categories: **plain** and **articulated**.

This approach follows a pragmatic rationale. In larger, well-preserved ceramic assemblages, base typologies can be differentiated into a greater number of subtypes, based on variables such as wall angle, base thickness, articulation form, or foot treatment. In the Darband material, such subdivisions would not be statistically meaningful, nor would they offer substantial chronological resolution. By contrast, a binary division allows for consistent categorisation without overinterpretation, while still enabling comparison with published corpora from neighbouring sites and regions.

The distinction between plain and articulated bases rests on the degree to which the junction between the vessel's wall and its resting surface is marked by a deliberate shaping. Plain bases comprise simple terminations, whether flat, rounded, or slightly convex, in which the wall and base merge with minimal change in angle or thickness. Articulated bases, by contrast, exhibit a distinct change in profile—such as a pronounced angle, ridge, or foot-ring—clearly demarcating the vessel's resting point. This articulation often reflects functional or aesthetic considerations, including stability, ease of lifting, or conformity to specific vessel forms.

While base morphology can occasionally assist in distinguishing functional categories—such as tableware with ring-footed bases or storage jars with thick, plain bases—it is not, in the Darband assemblage, a primary chronological marker. The typology presented here therefore serves a supplementary role within the overall classification, offering a concise record of the preserved material and a basis for future comparative work should additional examples be recovered.

7.1 Plain bases

Number of fragments in this group: 17

Sector 21: 6

Sector 22: 4

Sector 23: 7

Plain bases in the Darband Wall assemblage comprise simple, unarticulated terminations of the vessel wall, with no deliberate change in angle, profile, or thickness to distinguish the resting surface from the lower body. Surviving examples are generally flat or gently rounded, sometimes with slightly convex undersides, and are without moulded or stepped features. Where preserved, the junction between wall and base is smoothly continuous, producing a stable yet visually unobtrusive support. In the present corpus, such bases occur across both coarse utilitarian and finer table wares, but their form is not strongly correlated with vessel type or chronological phase. This lack of formal distinction underlines their limited diagnostic value for typological or chronological purposes.

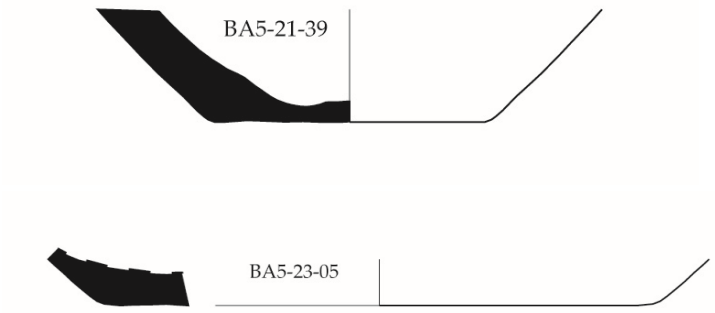


Fig. 7.1: Examples of plain bases.

7.2 Articulated bases

Number of fragments in this group: 12

Sector 21: 3

Sector 22: 4

Sector 23: 5

Articulated bases are defined by a distinct morphological separation between the vessel's wall and its point of contact with the supporting surface. This may take the form of a marked angle,

a slight inset, a ridge, or a low foot-ring, creating a clear visual and functional demarcation. In the Darband Wall material, preserved examples suggest that such bases were more common on table vessels than on storage or transport shapes. The articulation could assist in stability, lifting, or aesthetic emphasis, but given the small sample size and incomplete profiles, functional interpretation remains tentative. As with the plain bases, their occurrence in the assemblage does not appear to provide fine chronological resolution, though they remain relevant for formal comparisons with published corpora from neighbouring regions.

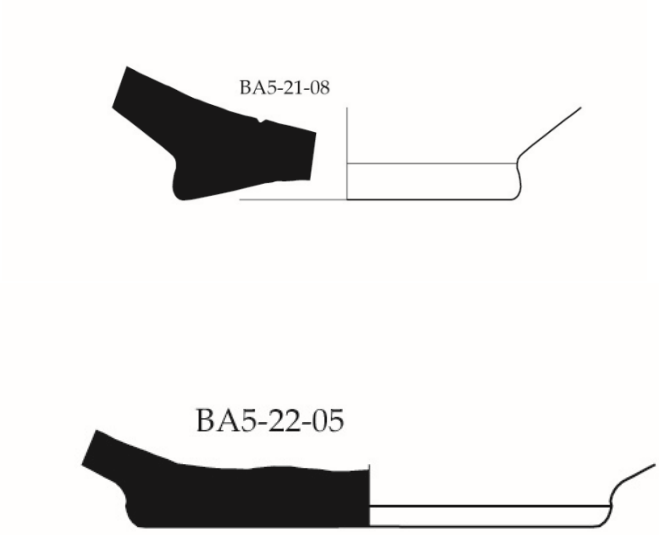


Fig. 7.2: Examples of articulated bases.

8 Supplementary Catalogue and Illustrations: Structure and Use

The ceramic material from the Darband Wall is presented in full in two Supplementa appended to this thesis. Their inclusion reflects the primary aim of this study – to make the assemblage permanently accessible for future research – and to provide a transparent record of all diagnostic fragments recorded during the 2018 and 2022 Czech-Uzbek field seasons. The supplements constitute both a research tool for specialists and a long-term archive of the dataset, enabling verification of typological assignments, quantitative observations, and comparative analysis with other collections from southern Uzbekistan and beyond.

Given the unstratified, surface-derived nature of the Darband assemblage, the complete publication of every diagnostic rim and base fragment is especially important. In contexts where secure archaeological stratigraphy is absent, the integrity of the dataset depends on thorough documentation of all measurable and classifiable specimens, regardless of perceived chronological or morphological significance at the time of study. By providing a catalogue table and a full set of scale drawings, the present thesis offers a level of transparency that allows other researchers to replicate, refine, or challenge the typological and chronological observations made in the analytical chapters.

8.1 Supplementum I – Tabular Catalogue

The first supplement takes the form of a detailed table in which each catalogue entry corresponds to an individual diagnostic sherd. Entries are ordered by a catalogue number.

1. **Catalogue number** – A unique identifier used throughout the thesis, cross-referenced in the plates of Supplementum II.
2. **Part of the vessel** – rim, base, handle or body
3. **Typological code** – The hierarchical code for rim or base form (e.g., U-S-S-01 for an unrestricted, simple-contoured, spherical profile of type 01).
4. **Preserved dimensions** – Rim diameter, preserved height, wall thickness; for bases, base diameter and form description (plain, ring, articulated).
5. **EVE** – percentage of rim/base preserved
6. **Other information** – any relevant information left by the person doing the primary documentation

This structure allows the table to serve not only as a static record but also as a dataset that can be sorted, filtered, and statistically analysed. For example, frequency distributions of rim diameters can be generated directly from the catalogue without returning to the original material.

8.2 Supplementum II – Drawings

The second supplement presents scaled profile drawings of each rim and base, produced according to standard archaeological illustration conventions. All drawings were executed at 1:1 scale on graph paper from direct measurement of the sherds, then reduced to 1:2 for publication unless otherwise noted. The following conventions were applied:

- Solid lines for preserved edges
- Section hatching to indicate the break surface and wall thickness.
- Where relevant, decoration was reproduced
- Exterior and interior outlines shown where morphology and preservation allowed.

Drawings are arranged by the catalogue number to facilitate easier searching.

8.3 Reading the Supplements in Conjunction with the Text

The supplements are designed for integrated use with the typological discussion in Chapters 6 and 7. Catalogue numbers cited in the text lead directly to the relevant table entry and to the corresponding illustration in Supplementum II. This arrangement ensures that the reader can move seamlessly from morphological description to visual representation, an essential process in ceramic studies where the precision of terminology must be anchored in accurate depiction.

For researchers working on parallels, the plates serve as the primary comparative medium, while the table provides the supporting metric and contextual data. This dual approach mirrors established best practice in Central Asian ceramic publication, as seen in the corpora from Uzundara, Kurganzol, and Kampyrtepa.

Beyond their immediate role in supporting the analysis presented here, the two supplements have wider applicability:

- **Comparative typology** – The clear delineation of rim and base forms, with associated measurements, facilitates direct comparison with published corpora from other sites in the Iron Gates system and the Bactro–Sogdian frontier.
- **Statistical and quantitative studies** – The tabular data can be re-analysed for frequency distributions, clustering analyses, or fabric-based studies.
- **Teaching and training** – The complete set of illustrations offers a compact teaching resource for ceramic typology in Central Asian archaeology.

8.4 Limitations and Prospects

The limitations of the supplementary dataset are inherent to its formation and context of recovery. All ceramic fragments derive from surface collections, a circumstance which necessarily precludes their association with secure, stratified archaeological contexts and thus constrains chronological precision. The absence of stratigraphic control means that vertical

relationships between finds cannot be established, and any typological inferences must remain tentative. Furthermore, the assemblage is markedly fragmentary: diagnostic elements such as rims, bases, or handles are incomplete, reducing the reliability of morphological reconstruction. Although photographic documentation of individual specimens and fabrics was undertaken during processing, these records are not reproduced in the present study, because not all the sherds were photographed or rather some of the photographs got lost.

Methodological refinement in future work could address several of these constraints. At the micro-analytical scale, the addition of high-resolution microphotography or thin-section petrography would allow for precise characterisation of fabrics, identification of temper sources, and assessment of technological choices in paste preparation and firing regimes. Three-dimensional scanning of selected complete profiles and rim sherds would permit morphometric analysis, facilitate virtual reconstruction, and enable direct comparison with typologically parallel assemblages. At the spatial scale, the incorporation of geospatial mapping—ideally through GPS-based recording of findspot coordinates within the Darband Wall complex—would permit the plotting of ceramic distributions against architectural and topographic features, opening avenues for spatial-statistical analysis of activity zones, depositional patterns, and potential functional differentiation.

As ongoing archaeological survey and excavation in the Darband hinterland, including projects in the Baysun and Kugitang piedmonts, continue to enlarge the comparative ceramic dataset, these supplements can be progressively augmented. Over time, they could form part of a broader, region-wide reference corpus integrated with material from well-stratified sites across the Bactro-Sogdian borderlands. Such a corpus, combining both surface and excavated material, would significantly enhance the robustness of typological frameworks and improve chronological resolution, while also supporting broader research into production, exchange, and consumption patterns in this strategically significant frontier zone.

9 Conclusion

The present study has provided the first comprehensive publication and typological analysis of the ceramic assemblage recovered from the Darband Wall during the Czech–Uzbek field seasons of 2018 and 2022. The corpus, although derived from surface collection and thus lacking secure stratigraphic contexts, has been systematically described and classified according to morphological criteria adapted to the specific conditions of the dataset. By applying a reproducible rim- and base-based typology, it has been possible to create a comparative framework that situates the Darband material within broader regional ceramic traditions of southern Uzbekistan and adjacent territories.

The results show that the assemblage encompasses a range of forms and fabrics paralleled at well-dated sites in the Bactro-Sogdian borderlands, including Uzundara, Kurganzol, Kampyrtepa, and Old Termez. Nevertheless, the fragmentary and context-poor nature of the material imposes serious constraints on chronological resolution. Only a small proportion of the sherds could be securely dated through close typological parallels or association with well-defined regional phases, leaving the majority assignable only to broad temporal brackets. It must suffice to remark here that chronological conclusions remain necessarily cautious, and many questions require further targeted excavation for resolution.

Despite these limitations, the study demonstrates the value of integrating surface finds into regional research when supported by morphological classification and comparative analysis. The Darband Wall assemblage, modest in size but rich in diagnostic forms, provides new evidence for the ceramic traditions circulating in a strategically crucial sector of the Iron Gates corridor. The material indicates that the wall and its environs were part of an interconnected frontier system, drawing on both local ceramic repertoires and wider Bactrian-Sogdian production traditions.

Above all, this thesis represents the first full publication of the Darband Wall ceramic material. By making this dataset accessible in a documented and illustrated form, it establishes a foundation for future studies – whether aimed at refining typologies, exploring production and distribution networks, or reassessing the chronology of the wall's construction and reuse. As additional fieldwork in the Darband microregion proceeds, the present work will serve as a reference point against which new finds can be compared, helping to integrate the Darband Wall more firmly into the archaeological and historical narrative of the Bactro-Sogdian frontier.

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