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PREFACE

In the 1990s, the idea was born to tap into the rich natural gas and oil reserves of the Caspian Sea and transport them to the international energy markets. The idea was closely followed by the public throughout the decade which followed. This historic project is aiming to transport 50 million tons of crude oil in a year, mainly Azerbaijani, along a pipeline 1774 km in length. The pipeline starts in Baku and ends at the newly-constructed sea terminal in Ceyhan, from which it will be delivered to the world markets by tankers. The Baku-Tbilisi-Ceyhan Crude Oil Pipeline Project will consolidate Turkey's geopolitical power in the region, and provide a strong and safe "East-West Energy Corridor" which will connect the southern Caucasus and Central Asia to Turkey and the Mediterranean Sea. The project falls within the scope of an Inter-Governmental Agreement, signed by the Presidents of Azerbaijan, Georgia and Turkey. The agreement was signed at the last OSCE summit held in İstanbul on 18 November 1999, and witnessed by the President of the USA. This was followed up by the "Turn-Key Contracting Agreement" with BOTAŞ on 19 October 2000, which allowed for construction of the BTC Crude Oil Pipeline to begin.

The 1076 km-long section of the pipeline in Turkey passes through the provinces of Ardahan, Kars, Erzurum, Erzincan, Sivas, Kayseri, Kahramanmaraş and Adana. The pipeline enters Turkey from Posof, and passes over the Erzurum-Kars Plateau before entering the tectonic depressions near Horasan. The pipeline continues over the Erzurum Plain, through Tercan, Çayırlı, Erzincan. From the mountainous areas and plateaus north of Refahiye, the pipeline crosses the North Anatolian Fault and reaches Central Anatolia from south of Kızıldağ (Kızıl Mountain) (3025 m), the source of the Kızılırmak River. From here, the pipeline extends southwest, drawing a large arc from north of the Tecer Mountains range (southeast of the Sivas Basin) and entering Uzunyayla Plateau from Ulaş Basin and Altınyayla. Continuing past Zamantı Brook, the pipeline climbs over the Tahtalı Mountains at the northeast corner of the Middle Taurus Mountains from east of Pınarbaşı and follows the Sarız Brook Valley. Turning south from the valley, the pipeline passes through the high threshold between the Dibek Mountains (2230 m) and the Binboğa Mountains (2957 m) and reaches the Göksun Brook Valley. Passing through the mountain and high plateaus between Göksun and Andırın, it descends south of Kadirli to the east of the Çukurova Plain (in the Ceylan Plain section) and reaches the Mediterranean Sea.

The Baku-Tbilisi-Ceyhan Crude Oil Pipeline Project is an exemplary project in that it applied advanced technological standards, gave priority to health and safety, and was sensitive to natural, social and historical assets in the pipeline's path. In these aspects, this project was a "first" in Turkey. The project undertook many measures to protect flora and fauna and to restore the land once construction was complete. The project has also applied the most sophisticated mitigation techniques in salvaging and protecting historical assets. Within the framework of the Cultural Heritage Management

Plan, all historical assets, both under and above ground, have been identified using survey techniques which conform to nationally- and internationally-recognized standards and preserved through re-routing or archaeological excavation. Assimilating the data and placing salvaged artefacts in appropriate regional museums have made an enormous contribution to Turkey's and the world's cultural and natural heritages. By publishing the results of each excavation, the project has made a large contribution to Anatolian archaeology in particular.

BOTAŞ, the main contractor for the Turkish section of the pipeline, signed a protocol with the Turkish Ministry of Culture on 12 March 2002, aimed at protecting historical assets in the pipeline corridor. Furthermore, the United Nations conventions, particularly the UNESCO Convention for Protection of the World Cultural and Natural Heritage, Valetta convention, IFA-Archaeological Observation, Site Evaluation, Excavation Work Standard and Guiding Provisions, and the World Bank standards and other recognized international standards were taken into consideration in the protocol, created as Law no. 2863 on the Protection of Cultural and Natural Assets. The Cultural Heritage Management Plan (CHMP) included in the Environmental Impact Assessment (EIA) Report prepared in accordance with all of the above, formed the framework for the Archaeological Salvage Excavations under the BTC Crude Oil Pipeline Project.

Archaeological salvage excavations were carried out between 15 March 2003 and 20 November 2003 in ten sites where re-routing was not possible for various reasons. During that time, 125 archaeologists, art historians, antique age historians, anthropologists, geomorphology experts, geophysicists, surveyors, restorers and approximately 800 workers were employed. They operated under the supervision and consultancy of 25 academicians attached to the Gazi University Research Centre for Archaeology. A total of 17 separate excavations were carried out, including seven sites that emerged in 2004 as "random finds."

The integrated execution of the archaeological survey and salvage works along the pipeline was of course the result of broad cooperation. The most important cooperation was with the Turkish Ministry of Culture (later the Ministry of Culture and Tourism), the BOTAŞ BTC Crude Oil Pipeline Project Directorate and the Gazi University Rectorate.

Prof. Dr. Rıza AYHAN, former Rector of Gazi University, made important contributions for the achieving and execution of the project. Prof. Dr. Kadri YAMAÇ, Rector of Gazi University, contributed immensely during the publication stage. Prof. Dr. Ahmet AKSOY and Prof. Dr. Metin AKTAŞ, former vice-rectors of Gazi University, Prof. Dr. Cemil YILDIZ, Dean of the Faculty of Arts and Science, Prof. Dr. E. Semih YALÇIN, former Head of the History Department and the pipeline's Archaeological Salvage Excavations Project Assistant Director, have made significant contributions and provided selfless supports to the execution of the project.

Mr. Orhan DÜZGÜN, Cultural Assets and Museums General Director of the Ministry of Culture and Tourism and Mr. Nadir AVCI, former Cultural Assets and Museums General Director of the Ministry of Culture and Tourism, Mr. İlhan KAYMAZ, Deputy General Director, have made enormous contributions.

Mr. Gökhan BİLDACI, former General Manager of BOTAŞ, who helped to bring the pipeline project to Turkey, and provided the infrastructure required for managing the archaeological assets of the project, Mr. M. Takiyüddin BİLGİÇ, former General Manager of BOTAŞ, Mr. Salih PAŞAOĞLU, former General Manager of BOTAŞ and BOTAŞ Genaral Manager Rıza ÇİFTÇİ, who were generous with their supports at the later stages. Former BTC Crude Oil Pipeline Project Directors Mr. Hüseyin ERSOY, Mr. H. Doğan ŞİRİKÇİ and Mr. Osman Zühtü GÖKSEL, BTC Crude Oil Pipeline Project Director, and Gökmen ÇÖLOĞLU, Deputy Director, and the pipeline Project Site Maneger Mr. Burçin YANDIMATA have contributed greatly to execution of the project. Furthermore, Mr. Özgür ARARAT, Manager of the Environmental Department of the pipeline Project Directorate and Miss. Ebru DEMİREKLER, former Manager of the Environmental Department of the pipeline Project Directorate, and all employees of the Cultural Heritage Management Unit, Mr. Gökhan MUSTAFAOĞLU, Mr. H. Uğur DAĞ, Mr. Kılıçhan SEVMEN, Mr. Murat YAZGI, Miss. Özgür GÖKDEMİR and GIS expert Mrs. Çiğdem GÜVERCİN ORHAN, have worked selflessly in executing this project.

BTC Co., the owner of the BTC Crude Oil Pipeline Project, has made big contributions to both Anatolian and the world cultural heritage. Becoming the protector of archaeological assets in the pipeline corridor in Turkey and extending financial support to this end, BTC Co. has of course made the largest contribution. The BTC Co. Turkish Section Environmental Department Manager Mr. Paul SUTHERLAND has been instrumental in the realization of the goal. Dr. Hugh ELTON, Director of the British Institute of Archaeology at Ankara and the archaeological consultant of BTC Co., has always been encouraging and supportive.

On this occasion, we cordially thank all entities and individuals who were involved in and contributed to the field and publication activities of the BTC Crude Oil Pipeline Project Archaeological Salvage Excavations Project executed by the Gazi University Research Centre for Archaeology.

Asst. Prof. Dr. S.Yücel ŞENYURT
Baku-Tbilisi-Ceyhan Crude Oil Pipeline
Archaeological Salvage Excavations Project Director

INTRODUCTION

This paper contains the scientific results of the salvage excavation that have been carried out by Gazi University Research Center for Archaeology (GÜ-ARÇED) at Güllüdere settlement and ancient cemetery, which is located to the 1 km north of Güllüdere village of Aşkale town of Erzurum, within Baku-Tibilisi-Ceyhan Crude Oil Pipeline Archeologic Salvage Excavations Project.

Güllüdere settlement was first identified during the surveys carried out by Gazi University Archaeological Heritage Management and Implementation Unit - in 2002, within Basic and Detailed Engineering Study Phases of BTC Crude Oil Pipeline Project[1]. Güllüdere salvage excavations have been carried out between July 2, 2003 and October 25, 2003 together with the excavation team gathered by Gazi University Research Center for Archaeology (GÜ-ARÇED), with the financial support of BTC Crude Oil Pipeline Project Directorate and by the permission of the Cultural Assets and Museums General Directorate of Ministry of Culture and Tourism - within BTC Crude Oil Pipeline Archeologic Salvage Excavations Project. Güllüdere salvage excavations were carried out under the leadership of Mustafa Erkmen, Director of Erzurum Museum. Prof. Dr. Hakkı Acun, History of Arts instructor at Gazi Üniversity Faculty of Science and Literature, was scientifically responsible for the excavation and directed the site works. Serdar Okur, an archaeologist from Elazığ Museum and Mehtap Ateş, an archaeologist from Aydın Museum were the representatives of Ministry of Culture and Tourism during the excavations; Research Assistants Hakan Yılmaz and Ayşen Açıkkol form Ankara University department of Anthropology, Cartography Engineer (M.S.) and Instructor Gülşah Beyazoğlu from Gazi University, Asst.Prof.Dr. Nurşen Özkul Fındık from Gazi University department of History of Arts, Research Assistants Hakan Çetin, H. Kamil Biçici, Esra Yıldız, Serkan Sunay and Murat Çerkez, archaeologists Atakan Akçay, Resul İbiş, Hamza Ekmen, Mahmut Polat, Filiz Azeroğlu, Zeynep Yılmaz, Yalçın Çelik, Ersoy Köse, Cüneyt Has, Ruşen Taşdöğen, Erdem Güngör, Gürbüz Beydiz, Serkan Erdoğan, Murat Ateş and restorator Şirin Kaya from Gazi University Research Center for Archaeology (GÜ-ARÇED) have also participated in the excavations.

Gülldere pottery and potsherds were evaluated by Resul İbiş, Hamza Ekmen, Atakan Akçay and Yalçın Kamış, in terms of their technical characteristics and forms. Architectural drawings and drawings of small finds have been accomplished by Hamza Ekmen, Resul İbiş and Emsal Koçerdin; photography and computer arrangements have

[1] The scientific results of surveys are being prepared for publication by GÜ-ARÇED.

been carried out by Emrah Karakurum and Ahmet Okur; Atakan Akçay, Yalçın Kamış and Yalçın Kamış have participated in archive and catalogue studies.

Salvage excavations were carried out in the 28 x 280 m sized pipeline corridor, which is located on the 510 x 775 m sized archaeologically important Güllüdere Settlement, which was identified by survey studies.

Graves, fireplaces, stone pavements and remains of big stone basements with square and rectangular shapes, though quite disordered, were revealed during the excavations. Potsherds and small findings, having Late Iron Age and Mediaeval Age characteristics, were discovered in and around of graves and architectural elements.

Archeologic data that have been acquired as the result of Güllüdere excavations provided considerable contributions to our limited knowledge on Eastern Anatolian Early Iron Age and Mediaeval Age. Especially the settlements and grave sites of Late Iron Age have not yet been fully explained by archaelogical excavations in the northern part of Eastern Anatolia.

The results of this salvage excavation study, which was confined within a very limited area, are not enough to evaluate the settlement as a whole. Besides the future wider area excavation studies, which might be carried out in Güllüdere, survey studies aiming to identify the presence of other settlements (in which similar settlement strategy had been employed) in the mountainous areas of Eastern Anatolia and its vicinity will enable the data presented in this book to be evaluated more comprehensively.

PART I
GÜLLÜDERE EXCAVATIONS

Güllüdere flat settlement and necropolis area are located on a natural terrace, in an area overlooking the plains, on the northern trails of Kızıldağ where Kızıldağ meets the plains, 500m to the northwest of Güllüdere village which is located 7 km away to the southeast of Aşkale town of Erzurum. This terrace has a slight inclination starting from 1806 m of altitude, which is its highest spot in the west end, to a stream at an altitude of 1.975 m in the east. This settlement was first identified during BTC HPBH archaeological surveys and it covers an area size of about 300 x 200 m Pırtın creeks are located to the west of the site; to the south there is the modern Güllüdere village; to the north is the ancient road reaching form west to Kandilli; Güllüdere stream bed and Karadağ hill are located to the east of the site.

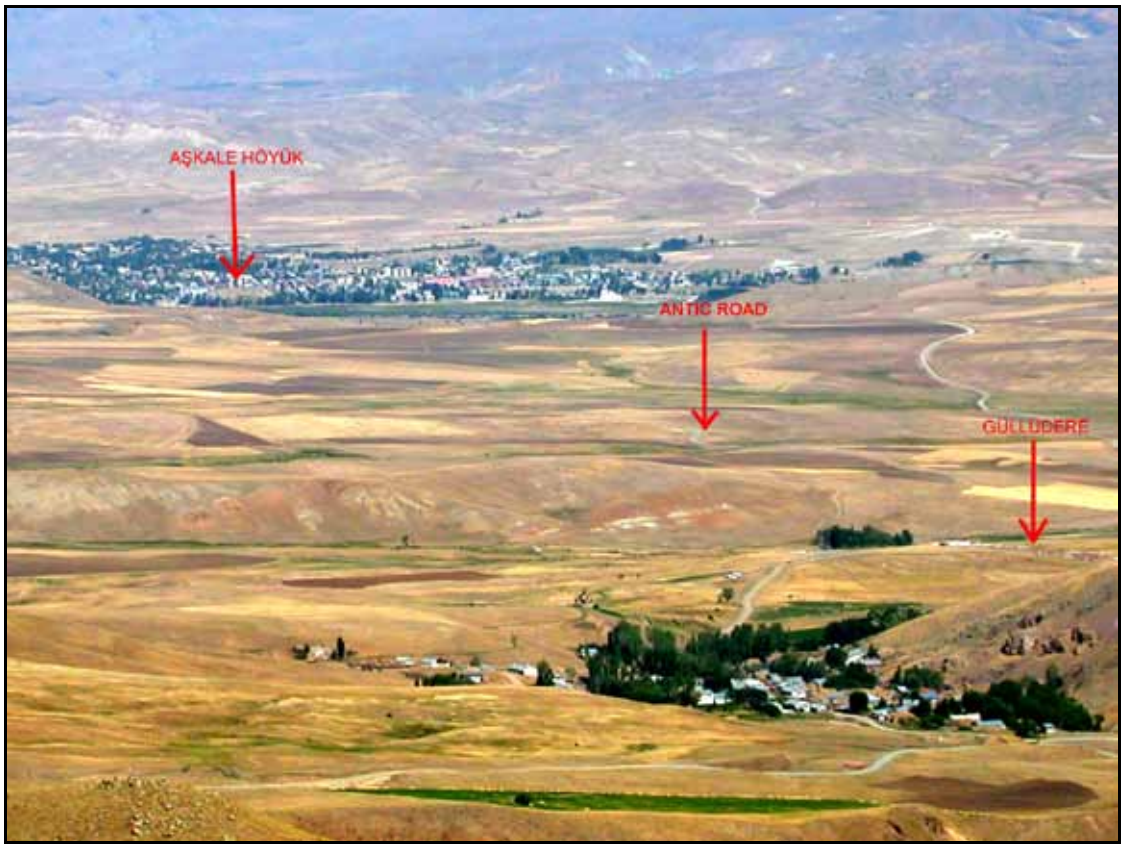


Figure 1: A sight of excavation site and Aşkale from the south of Güllüdere village

Aşkale Höyük[2] dated 3. and 2. millennium BC is located to the northwest of necropolis of Güllüdere settlement **(Figure 1)**, and Mağaratepe settlement, which was registered during the 2002 surveys of BTC Crude Oil Pipeline, is located to the west. To the south of Güllüdere is the Pırtın Fortress[3], which is thought to be used during Urartian and Byzantine periods. It is located to the southeast of Güllüdere village and overlooks a vast piece of land including Aşkale passage **(Figure 2)**.

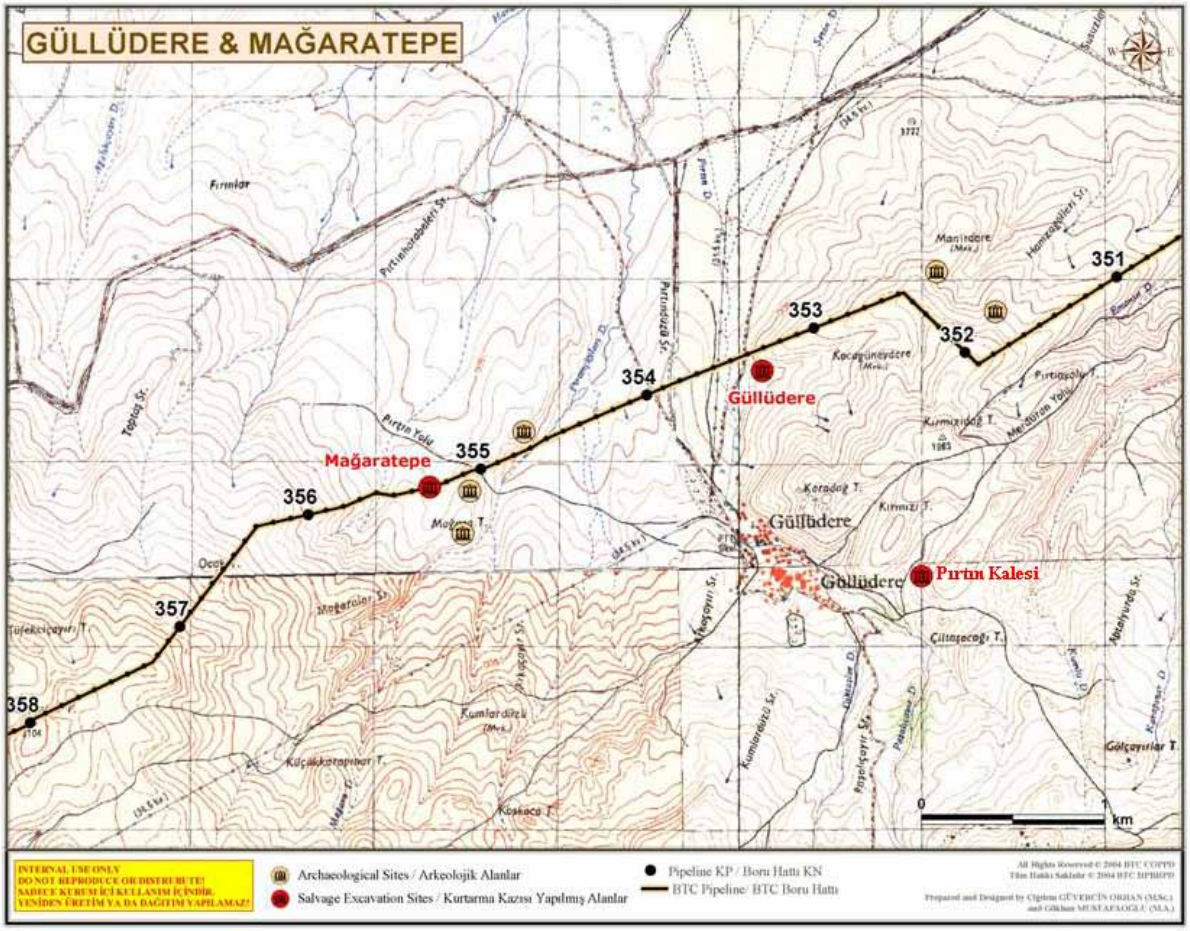


Figure 2: 1:25.000 scale map of Güllüdere and its vicinity.

[2] Koçhan et al. 2005: 6.
[3] Başgelen, 1987: 18, Res. 8; Koçhan et al. 2005: 10.

Güllüdere excavations were carried out within the 28 m wide expropriated corridor through which the pipeline will pass. Excavations are carried out in 3 different partitions within the 290m x 28 m area along the pipeline, by taking the previous surveys into consideration. These partitions are named as A, B and C. Trenches in partitions A and B are divided into grids of sizes 10 x 10 m; trenches in partition C are divided into grids of sizes 10 x 8 m. Trenches in partition B, through which the pipeline will pass, were prioritised for excavations. Güllüdere excavations were carried out in a total of 29 trenches, 25 of which were of 10 x 10 m size and 4 of which were of 4 x 10 m size **(Figure 3-4)**. Besides these, 4 x 2 m B-26 and 4 x 10 m B-28 soundings were opened in order to identify the eastern borders of the archaeological site.

Figure 3: Sight of Güllüdere excavation site from Karadağ Hill.

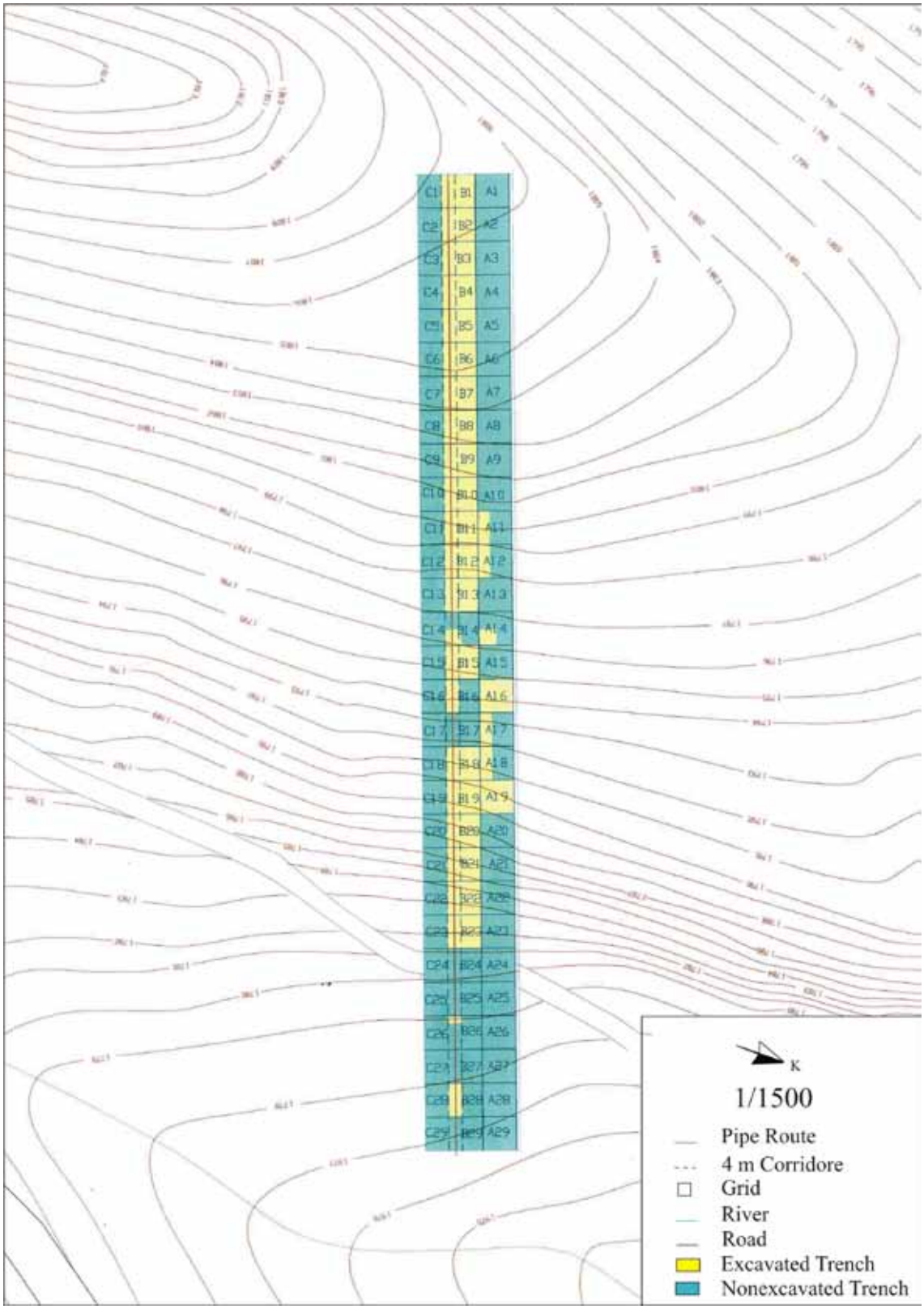


Figure 4: Güllüdere excavation grid and topographical map.

Excavations first started in B-1, B-2, B-3, B-4 and B-5 trenches. Except for the very few amorphous ceramic pieces gathered from the surface soil of B-1 and B-2

trenches, no more archaeological findings were encountered. A deep sounding was opened in a 2.5 x 2.5 m size area within the 7-8/h-j plan grids of B-2 trench, and main rock was reached at an approximate depth of 1.20 m below the surface. Studies that had been carried out in B-1 and B-2 trenches identified the western border of Güllüdere archaeological site.

Although no archaeological findings were encountered during the B-3, B-4 and B-5 trench excavations, many potsherds and a bronze spatula in B-4 trench were found **(Figure 42)**. At an approximate 60cm depth from the surface in the 2-4/g-j plan grids of trench B-3 many potsherds and animal bone pieces together with an irregularly placed pile of stones were encountered. This area does not have a specific layout and it must have been used as a waste pit **(Figure 5)**.

Figure 5: Pile of potsherds and bone pieces in B-3 trench.

Many graves were encountered starting from B-6 trench. These are simple earth graves and 13 of them belong to Mediaeval Ages. These graves are oriented from west to east and are supported by stones. Wood remains and flat stone plates were encountered on most of the Mediaeval graves **(Figure 6)**. The grave named M 16, which was found in B-6 trench, is different than other Mediaeval graves in terms of its orientation and lying position. Burial in M 16 grave is oriented from east to west and it was laid on its left side with legs half-pulled up to stomach in a *nim hocker* position.

Upper part of the body above the waist was not preserved. No grave findings were found other than skeleton pieces. This grave shows similarities with the Iron Age graves found in other trenches. This site had been used as an extramural cemetery in both two periods because there are no level differences between the graves of two different periods. Except for the ones found in the graves, very few potsherds were found in B-6 trench.

Figure 6: B-6 trench; flat stone plates used for covering Mediaeval graves.

Figure 7: B-7 trench, mediaeval grave.

The mediaeval graves that were found in trench B-6 continued to exist in trench B-7 **(Figure 7)**. 18 mediaeval graves have also been revealed in this trench. Because

two of these graves were located in the border of B-7 and C-7 trenches, small pockets of excavations were made only at the exact locations of these graves in trench C-7 in order to reveal them. Majority of these graves contain skeletons of adults, and few of them contain skeletons of children. All of the potsherds found in trench B-7 belong to Iron Age or Mediaeval Period.

Three graves were encountered in trench B-8. Among these, the grave named as M 27, which is surrounded by stones, belongs to a mediaeval burial. The other two are Iron Age graves with semi-hocker style of burials. An in-situ stone necklace seal was revealed over the rib cage of the skeleton in M 11, which is one of these two graves **(Figure 8, 37)**. There is a stylised horse figure on this seal. The other Iron Age grave in trench B-8 was named as M 12. An in-situ bronze bracelet was revealed on the arm of the skeleton in this grave **(Figure 9, 44)**. Besides, scattered pieces of bronze and iron needles together with two silver rings were found while opening the grave. Very few potsherds were discovered in trench B-8; however, these do not seem to be related with the graves.

Figure 8: B-8 trench, M 11 grave and in-situ seal necklace.

Figure 9: B-8 trench, M 12 grave and in-situ bronze bracelet.

Figure 10: B-10 trench, scattered basement stones of various structures.

No graves were encountered in trenches B-9 and B-10. However, scattered stone architectural elements were encountered in these and the following trenches. These stone structure basements are quite scattered and devastated. Thus plans of the structures in these trenches could not be understood **(Figure 10)**. These structural remains are the continuation of the architecture seen in trench B-11. A rendered floor, which must have been a part of an oven, was found in a very devastated situation within the 1/ı-j plan grid of trench B-10. Iron Age ceramics were few in number in the previous trenches starting from B-1; however, they were found in big quantities starting from trench B-9 and B-10, together with other architectural elements.

Stone basement walls and stone paving were revealed in trenches B-11 and B-12. In order to reveal the complete range of this architectural context, excavation studies were expanded to trenches A-11 and A12 and carried out simultaneously. Stones discovered in these trenches exhibit a proper architecture. Some of the structures were paved with stones gathered from streambeds. Because of agricultural activities and lack of enough cultural fillings over the settlement site, the structures have been destroyed. Entrances and layout plans of these structures are not well understood because of this reason **(Figure 18-21)**. A fireplace, which must have been related with the structures, was discovered in the plan grid 7/b-c of trench A-12. Many potsherds and animal bones were gathered from the floor pavements of the structures and from the cultural fillings in trenches. Pieces of rough, daily use and storage pots and few amounts of painted or monochrome potsherds, which depict detailed craftsmanship, were found in these trenches. Besides these findings, a piece of a baked clay candela was found in trench B-11, an iron dagger **(Figure 50)** and an iron object **(Figure 43)** were found in B-12, a stone spindle whorl **(Figure 39)** and polishing stone **(Figure 40)** were found in A-12 trench. The ceramics discovered in these trenches exhibit the properties of Late Iron Age. An Iron Age grave named M 8, in which a burial had been laid in semi-hocker style, is another discovery in trench B-11 **(Figure 11)**. The burial has a south to north orientation and its nested position with the structure in B-11 grid, looks like an *intramural* burial. Thus the grave must belong to a period after the structure had ceased to be used.

No architectural elements or graves were encountered within trenches B-14 and B-15, except for very little number of potsherds and an iron knife. A single line of stones, which has a northeast-southwest orientation, was revealed in trench A-16 **(Figure 12)**. This line of stones stretches along the trench; however, it does not extend to other trenches and looks like a peripheral wall.

Figure 11: B-11 trench, grave M 8 and basement stones of location C.

Figure 12: A-16 trench, line of stonewall.

During the excavation studies carried out within trenches A-17 and B-17 5 Iron Age graves and a few potsherds were found. Graves M 41 **(Figure 31)**, M 42 **(Figure 32)**, M 43 **(Figure 33)** and M 44 **(Figure 34)** are simple earth graves with semi-hocker style burials. The Iron Age grave, which is distinguishable from others, was named as M 40. The burial had been laid in a semi-hocker style and it had been covered by a big broken pithos **(Figure 13).** A ceramic bead **(Figure 38)** in blue and yellow colours was found as a grave present in the grave.

Figure 13: B-17 trench, M 40 pithos grave.

Disordered stone lines of a destroyed architecture and Iron Age potsherds were revealed in trenches A-18 and B-18. Iron Age potsherds, which have almost disappeared after trench B-12, have started to appear in big quantities, starting from trench A-18.

A big pile of stones, which had been gathered from the field during agricultural activities, was encountered for the first time in trench A-19. A batch of gravestones with "cross" motifs, which had been disposed of in this pile of stones, was found **(Figure 14)**. After the removal of this stone pile, three stonewalls belonging to a room were revealed **(Figure 23-24)**. Potsherds, which were gathered in high quantities, show Iron Age characteristics. Very little amount of mediaeval potsherds was discovered. A baked

clay ağırşak was found as a small finding. Additionally, a Mediaeval grave named M 30, which had been built by destroying the eastern wall of the room, was found.

Figure 14: A-19 trench, gravestones with “cross” motifs.

The continuation and debris of the wall, which is the continuation of architecture of trench A-19, were found in the 1-6/a-j plan grid of trench B-19. Stone basements of Mediaeval structures that are distinguishable from the ones mentioned above were found in 7-10/a-j plan grids. The characteristics of the potsherds revealed from here on, have totally changed, and Mediaeval pottery has become dominant, which were few in trench A-19.

No architecture was encountered during the excavations in trench B-20; however, mediaeval pottery, which becomes common starting from trench B-21, continued to exist. In this trench, a baby burial was also found in a pot whose lid had been covered by another bigger pot **(Figure 15)**. Because of the lack of enough soil cover over this grave, upper sections have disappeared as the result of agricultural activities. No graves were encountered after trench B-20.

Figure 15: B-20 trench, baby burial in the pot.

Figure 16: B-21 trench, Mediaeval stonewalls.

Mediaeval pottery similar to the ones discovered in trenches B-19 and B-20, continued to be revealed during the excavations in trenches B-21 and B-22. Architectural remain was found in plan grids 7-10/a-j of trench B-21 **(Figure 16)**. A tandoor and two stonewalls belonging to a long and narrow room, which are the continuation of the architecture in B-21, were discovered in the area corresponding to the plan grids of 1/a-c and 9-10/a-c of trenches C-22 and B-22, respectively **(Figure 17)**. The artefact, which draws the most attention among the findings of trench B-22, is the baked clay handle in a form of an eagle head **(Figure 36)**.

Figure 17: B/C-22 trenches, Mediaeval tandoor and in-situ small pot.

Architectural elements were not encountered in trench B-23, and the amount of pottery revealed had started to decrease. Sounding studies were made in trenches B-26 and B-28 in order to identify the eastern border of the settlement site. During these studies no architectural elements were found and only a few potsherds were revealed. B-28 sounding, which was located on an area flattened by the alluvium, identified that this location was the eastern border of Güllüdere archaeological site.

PART II

IRON AGE FINDS

A. IRON AGE ARCHITECTURE

As a result of excavation works conducted in Güllüdere, a large structure complex was explored that consists of sevAgel site and courtyards distributed into A-B/11-12 trenchs **(Figure 18)**. Structures in this area were built in the same direction in accordance with land topography that has a smooth slope towards NE-SW. The materials used for the construction of structures are stones from the river bed with varying sizes. Walls at the basement level have a thickness of 1.40 m to 80 cm. As the wall bonding system, coarse stones were placed in two outer parts of the walls and small stone and aggregates were filled in between the wall and coarse stones. The facts that no mud brick was found in the trenchs and there are numerous debris deposits around the site may indicate that the material used for raising the walls is also stone. Likewise, stone bonding is the most commonly used architectural type in villages of Erzurum. The floors of 3 sites explored were floored with river stones that are more flat than those used on the walls. These stone floored sites are named as A, B and C sites. The fact that floors of these sites are covered with stone might indicate that they could be used as open courtyards or portico. This structure complex has been intensely damaged due to erosion and agricultural activities above the site. All the walls of structure were obtained at the basement level. Therefore, no transition area was determined between the main entrances and sites. However, main entrances should have been accessed via stony areas.

The A site located in southwestern part was built as a rectangular of 2 x 4.5 m dimension **(Figure 18, 20)**. Some part of west and southern walls of the structure were preserved. The A site is closely related to the section called as site no.1. However, the walls of site no.1 were completely damaged except for a single wall at west. Therefore, no information is available on dimensions and number of sites connected to the A site.

The second stone floored site is the B site and it is located west of the A site. The B site has also a rectangular plan of 4.20 x 5.60 m. Floorings are partly damaged. The elevation of this site is 50 cm higher than that of the A site. Eastern wall of the site is also shared by the A site. Except for this wall, the entire northern wall and half of the western wall were preserved. No wall was encountered at the southern part and this part is

probably open air. There are also site nos. 2, 3, 4 and 5 that are believed to be connected to this section NW of the B site.

Site no.2 has a rectangular plan. Its width at south is 2.90 m, but its long part could not be measured since it is extended to the area that has not been opened yet. A stove was found in an area corresponding to A-12 trench and 7/b-c plan squares at the corner where south and western walls of this site are joined. The stove whose both sides are surrounded with plate stones is of 60 x 60 cm dimension. Cooked clay coatings were determined within the stove. Site no. 3 resembles a rectangular but most part of this site is also in unexcavated area and therefore its dimensions could not be measured. Site no. 4 has an L shape plan that is composed of a rectangular of 1.80 x 3.20 m and a corridor of 1.40 m width. The preserved length of corridor is 2 m. The length of site no. 5 could not be determined which has a width of 2 m and believed to be connected to the Site B.

The third stone floored place is the Site C **(Figure 18-19)**. This site has a rectangular plan of 2.80 x 5.50 m. Site no. 6 of 2.20 x 5.50 m is located at west of this place. The wall between the C site and site no. 6 has been partly preserved. In the site no. 6, in an area corresponding to 1-2/c-d plan squares in the B-11 trench, there is a circular structure which was formed with stones of 1 m diameter **(Figure 18, 21)**, but, its function could not be understood. Behind the site no. 6, another site was found (site no. 7). This site extends to A-B/10 trenchs. However, architectural style was completely damaged and plans could not be solved.

Adjacent to the outer wall of the site C at the east, a tomb called M8 was found. This tomb at the base level corresponds to 3-4/h-ı plan squares in B-11 trench **(Figure 18, 22)**. Walls of the structure did not damage the tomb. Therefore, the tomb should have been built before the structure. This may indicate that tomb M8 was built following the demolishment of structure or it is related to an *intramural* burial style that was performed in the settlement areas as a result of degenAgetion observed in funAgel habits 7th century AD.

Several pots of the Iron Age found in these structures composing of daily cooking, service and storage pots and the stove found in the site no. 2 may indicate that these sites were built for settlement in the Iron Age.

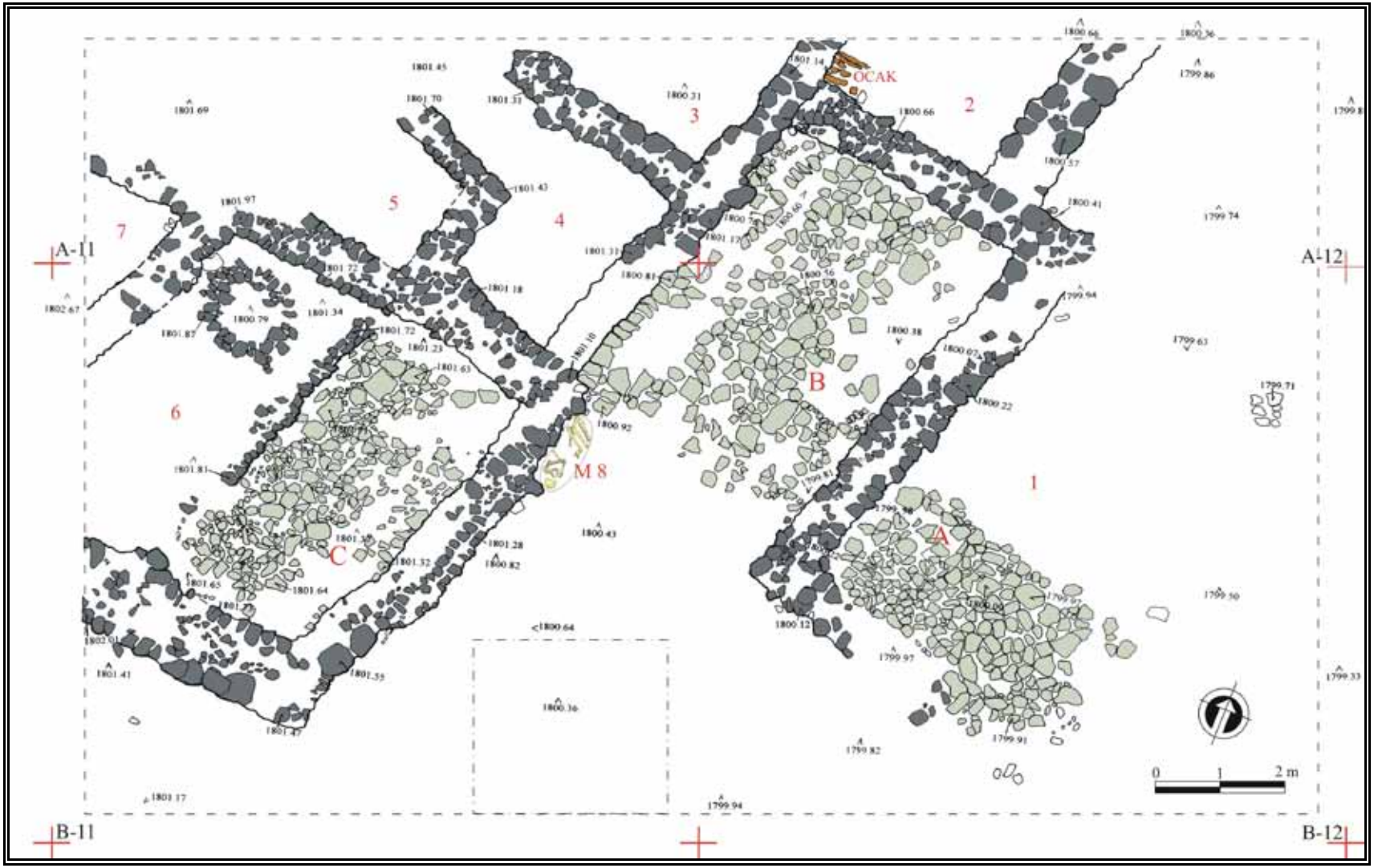


Figure 18: Güllüdere A-B/11-12 trenchs: architectural draw of the Iron Age structure.

Figure 19: A-B/11 trenchs: stone floored place C and the walls.

Figure 20: B-12 trench: stone floored place A and the walls.

Figure 21: Circular stone series within the place no. 6, B-11 Square.

Figure 22: M8 tomb in front of the western wall of the C place.

Another structure found in the Güllüdere excavation is located in A-19 trench and only its single foundation at two sites was explored **(Figure 23-24)**. The walls of site no. 1 in this area have thick stone wall of 2.20 to 1.50 m. These walls were formed by placing coarse stones in both sides and smaller ones between them. The measured dimension of site no. 1 is 4.40 x 4.50 m and it extends to A-18 trench at west. However, since the walls in A-18 trench are entirely damaged, plans could not be understood. At north of site no. 1, only one corner of site no. 2 could be explored. Since its northern side continues out of 28-m permissible corridor, it could not be opened. Most part of pots explored in the A-19 trench and sites belong to the Iron Age and therefore, this structure should be the same age as the ceramics.

Figure 23: A-19 trench, stone remnants of the Iron Age structure.

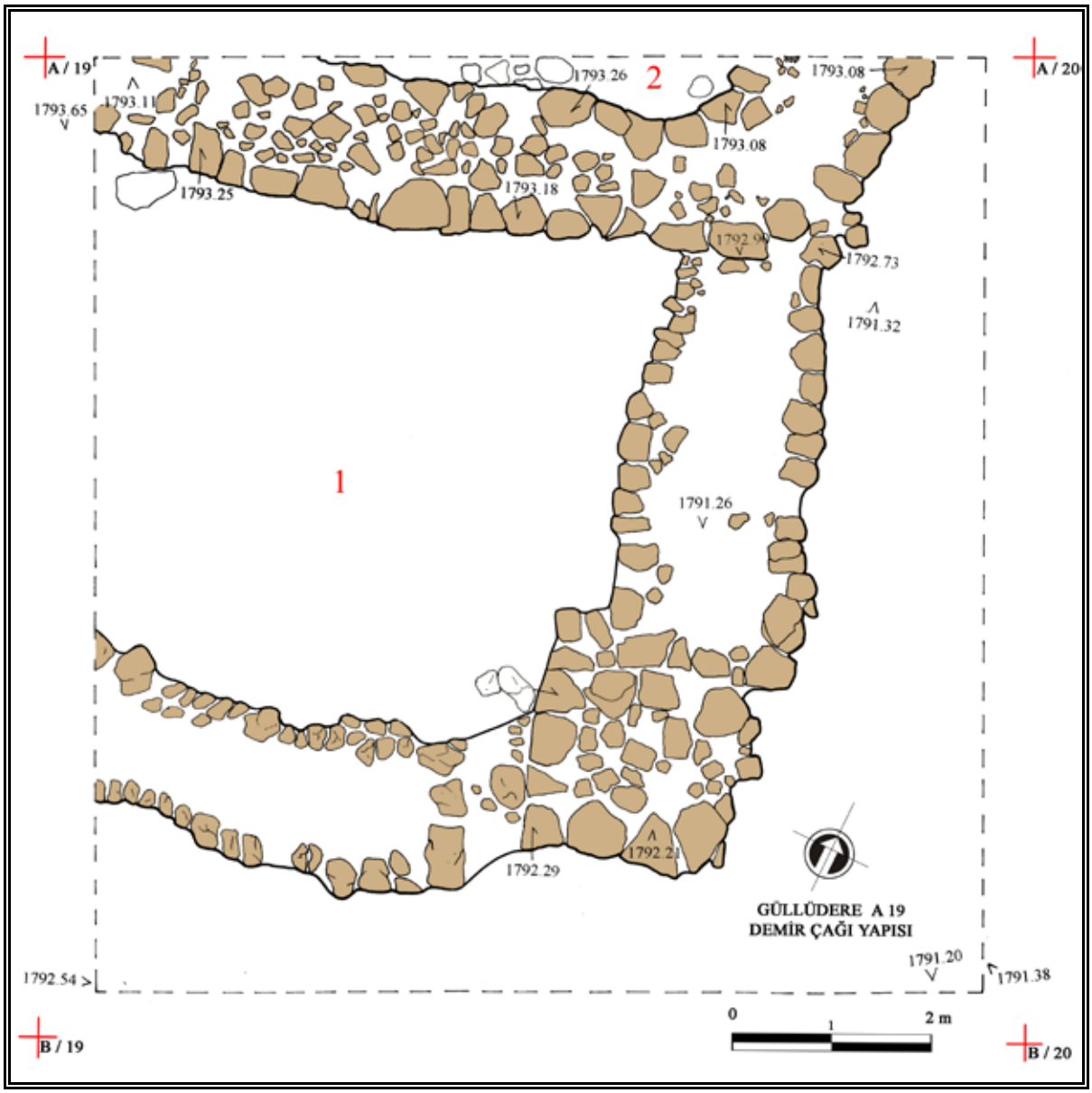


Figure 24: A-19 trench, architectural draw of the Iron Age structure.

B. IRON AGE GRAVES

In the Güllüdere salvage excavation, totally 10 graves of the Iron Age (2 are potter graves and 8 are simple soil type graves) were found in B-6, B-8, B-11, A-17, B-17 and B-20 trenchs.

M 8: It was found at a depth of 50 cm in 3-4/h-i plan square of the B-11 trench. The head of grave of semi-hocker style is at south and the face is towards to west. The body of burial in S-N extended grave lies flat on his back, legs are completely folded, right arm in on the left shoulder and left arm is below the right elbow. The grave has not been well preserved. The length and width of grave are 190 cm and 92 cm. Except for skeleton, no other findings were found in the grave **(Figure 25**).

Figure 25: M 8 Iron Age grave.

M 11: It was found at a depth of 30 cm in 9-10/e-f plan square of the B-8 trench. The head of skeleton of semi-hocker style is at north and the face is towards to west. Burial in S-N extended grave was lain to the right and right arm on the shoulder, left arm is on the stomach and there are flat stones under the skull. Skeleton has not been well preserved **(Figure 26**). The length and width of grave are 150 cm and 93 cm. As a grave finding, a necklace seal was found on which a horse figure stands **(Figure 8, 37**).

Figure 26: M 11 Iron Age grave.

M 12: It was found at a depth of 76 cm in 7-8/f-g plan square of the B-8 trench. It is a simple oval soil burial that is surrounded with river stones. The head of grave of semi-hocker style is at south and the face is towards to west. Burial in S-N extended grave was lain to the left and the arms are on the stomach and folded towards the chest. It is not well protected **(Figure 27)**. The length and width of grave are 135 cm and 100 cm. As a grave finding, a bronze bracelet **(Figure 44)**, 2 silver rings **(Figure 47:1-2)** and a bronze needle head **(Figure 41)** were found.

Figure 27: M 12 Iron Age grave.

M 16: It was found at a depth of 30 cm in 6/g-h plan square of the B-6 trench. It is an inhumation that is surrounded with river stones. Burial of semi-hocker style was lain to the left and only leg and hip bones are well protected. The length and width of E-W extending grave are 122 cm and 114 cm. Except for skeleton, no other grave findings were found **(Figure 28**).

Figure 28: M 16 Iron Age grave.

M 37: It was buried within a pot found at a depth of 40 cm in 10/g plan square of the B-20 trench. The rim of the SW-NE extending pot is closed with a large bowl. Except for child teeth in the bowl, no other findings were found. The length and width of grave are 40 cm and 20 cm. Upper half of the pot **(Figure 77:1)** and the large bowl **(Figure 72:1),** that is used as a tap, were absent due to intense agricultural activities in the area **(Figure 29)**.

Figure 29: M 37 Iron Age pot grave.

M 40: It is an inhumation **(Figure 30)** at a depth of 70 cm in 10/h-ı plan square of the A-17 trench and 1/h-ı plan square of the B-17 trench. Its upper part has been closed with a large pithos **(Figure 84: 4)**. The head of grave of semi-hocker style is at south and the face is towards to west. The body of burial in S-N direction lies flat on his back, legs are completely folded and skeleton is not well preserved. The length and width of grave are 114 cm and 61 cm. A drop shaped bead was obtained as a grave gift **(Figure 38).**

Figure 30: M 40 Iron Age pithos grave.

M 41: It is an inhumation at a depth of 35 cm in 1-2/f plan square of the B-17 trench. The head of grave of semi-hocker style is at north. Tibia, humerus and skull parts of the N-S extending skeleton were preserved. The length and width of grave are 90 cm and 50 cm. Except for a skeleton, no other grave findings were found **(Figure 31**).

Figure 31: M 41 Iron Age grave.

M 42: It is an inhumation at a depth of 30 cm in 3/d plan square of the B-17 trench. The head of grave of semi-hocker style is at north and the face is towards to east. The length and width of N-S extending grave are 110 cm and 76 cm. Except for a modAgetely protected skeleton, no other grave findings were found **(Figure 32**).

Figure 32: M 42 Iron Age grave.

M 43: It is an inhumation at a depth of 53 cm in 2/ı plan square of the B-17 trench. The head of grave of semi-hocker style is at south and the face is towards to west. N-S extending burial is not well preserved **(Figure 33**). The length and width of grave are 110 cm and 36 cm.

Figure 33: M 43 Iron Age grave.

M 44: It is an inhumation at a depth of 65 cm in 10/g plan square of the A-17 trench. The N-S extending burial is of semi-hocker style and it is badly preserved. Except for a skeleton, no other grave findings were found **(Figure 34**).

Figure 34: M 44 grave.

Since excavation works are restricted to 28-m corridor in Güllüdere, it could not possible to determine distribution of the Iron Age graveyard. However, buries explored indicate that graveyard and settlement areas are widened in N-S direction.

Although there are some small deviations in directions of Iron Age graves in Güllüdere, all the graves are N-S oriented except for E-W extending M 16 grave. This may indicate that a certain direction sympathy. However, there is no such integrity for lying direction of skeletons in graves. Head of graves are towards north or south while their faces are towards east or west in accordance with lying directions and they are buried in semi-hocker style.

Among the ten graves explored, findings together with skeletons were obtained only in three of them and they are own belongings of people rather than gifts to the dead. A dig decorated seal was found in M 11 grave and a limestone bead in M 40 and *insitu* bronze bracelet, two silver rings and three bronze needle parts were found in M 12. The scarcity of material obtained from the graves is attributed to intense agricultural activities above the graves and stripping of valuables by robbers.

The late Iron Age graves found in Güllüdere are very close to or even within the residential sites. This is in parallel with late Iron Age graves and burial techniques so far explored in eastern Anatolia[4].

These 10 Iron Age graves found in Güllüdere show that two different burial styles were applied. They are graves put in jar or pots and also graves of simple burial type.

The tradition of graves put into the jar was common by the early Bronze Age[5] and they were also used during the Iron Ages. Like in the M 37 grave, various sizes of pots were used for baby burials. Burials into the pots in eastern Anatolia during the Iron Age were as placement of the corpse into the pot in hocker style or as placement of burned bones into the pots. For closing of rim of the pots, a bowl or a flat coffin stone were used. Similar type pot graves were also explored Similar types of pot graves were also explored Tetikom[6] and Tasmasor[7] excavations in Erzurum. In addition, baby burials were also found in the Karagündüz Necropolis[8], Dilkaya[9] and Van Kalesi Höyüğü [10] in the city of Van. It is suggested that, on the basis of 4c structure floor where they are found, graves in Karagündüz could belong to post-Urartu period[11]. Grave no. 151 in the Van Castle Tumulus is also dated as 7th century BC that is just after the collapsing of Urartu period. Samples from the Van-Dilkaya belong to Urartu period that is middle Iron Age and there is a cremation on these samples. Jar type large pots were also used for adults in the Iron Age. However, like in M 40 jar grave in Güllüdere, since corpse could not be placed into a tight rimmed, strong jar, it was placed into the broken container and the corpse was covered with other part or parts of the container. The grave in Erzurum-Tasmasor, 4c structure floor of Van-Karagündüz[12] and grave no. 214 found in the Van Kalesi Höyüğü[13] have similar features with M 40 grave. Hocker type simple soil graves found in Güllüdere have similar characteristics with those of Erzurum-Tasmasor, 4c structure floor of Van-Karagündüz [14] and graves on the Urartu layer in the Van Kalesi Höyüğü[15] and simple soil graves dated as the

[4] Derin 1993: 189. "In the late period of Urartu, possibly after the second part of 7th century B.C., there is a significant degenAgetion in the burial tradition. In this period, in addition to burialing in the graveyard, intramural burial style was also considered."
[5] Seeher 1993: 12.
[6] Şenyurt and Ekmen 2005: Res. 33-40.
[7] The results of Tasmasor excavation publication is preparing.
[8] Sevin et al. 1998: 577; 1999: 855, Res.14.
[9] Çilingiroğlu 1989: 264.
[10] Tahran and Sevin1994: 849-850, Res.13.
[11] Sevin et al. 1999: 856.
[12] Sevin et al. 1999: 855, Res. 11
[13] Tarhan ve Sevin 1993: 410, Res.14, 15.
[14] Sevin et al. 1999: 855-856, Res. 13.
[15] Tarhan ve Sevin 1993: 410, Res. 13; 1994: 843-876, Res. 11, 12.

period after the collapsing of Urartu and also inhumation burials of the Van-Dilkaya[16] and Van-Yonca Tepe[17] that are dated as the Iron Age.

As a result, considering the limited number of graves and grave gifts found in Güllüdere, it is not possible to make a detailed analysis on burial traditions of the people who lived in this area. The Eastern Anatolia and particularly the Northeastern Anatolian region including the excavation area are one of the regions where limited amount of archeological work conducted and systematic excavations are not sufficient. In this respect, these 10 graves which were explored and documented with a one-season work in this area are very important to introduce new data on style of burials during the Iron Age in the Eastern Anatolia.

[16] Çilingiroğlu 1990: 249, Res. 7; Çilingiroğlu ve Derin 1992: 409, Res. 7.
[17] Belli ve Kavaklı 2001: 376, Res. 7-8.

C. SMALL FINDS

Small Finds explored in the Güllüdere excavation are obtained from tombs and cultural texture. This limited number of small Finds is divided into three parts as terracotta, stone and metal on the basis of materials they are made of.

1- Terracotta Finds

As small Finds made of terracotta, one disc and a handle piece with eagle head were found.

***Terracotta Disc**:* It was found at a depth of 94 cm in site no. 1 of 1792.36 codes in 3/b plan square of the A-19 trench. Its lateral section is circular and vertical section is conical. 1/3 part of its surface has been eroded. The disc with a brown paste (7,5YR 4/3) has a yellowish red surface color (5YR 6/6). It has a diameter of 2.48 cm and height of 1.47 cm **(Figure 35)**.

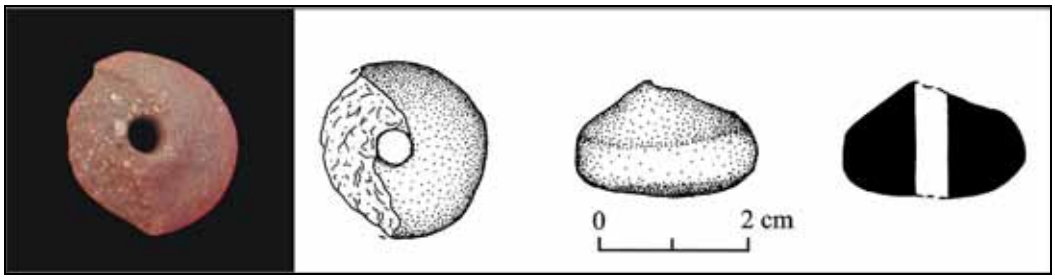


Figure 35: Terracotta disc.

***Terracotta Handle with Eagle Head**:* It was found in cultural texture at a depth of 1 m in 1787.09 codes in 2/b plan square of the B-22 trench. This art which was found without connection to any architectural or any other finding was probably dragged or displaced by other mechanisms. Of the art which was broken from the part where body and neck are connected, only neck and head sections have been well preserved. Two disproportional eyes were formed by pressing a circular object into the wet ceramic paste by which eagle head was also shaped. Hairs extending from the head to the neck were expressed with four shallow canals. The stubby beak is of square section and well expressed. The art with a dark grayish brown (10YR 4/2) paste has a surface color of

light brown (7,5YR 6/3) and it is thinly coated and polished. The preserved height is 5.7 cm and the widest part on the neck is 3,3 cm. **(Figure 36)**.

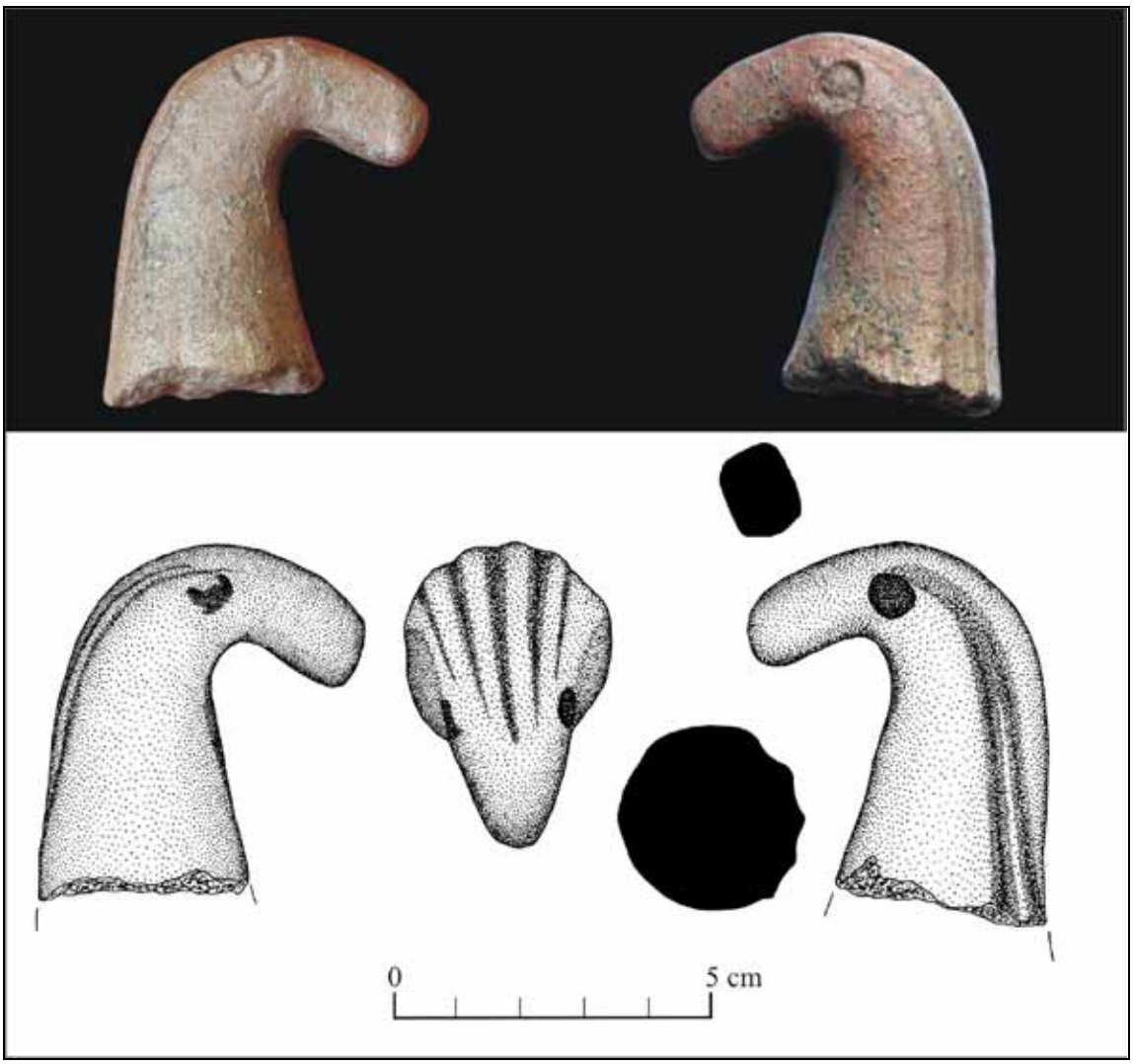


Figure 36: Terracotta handle with eagle head.

2- Stone Finds

As stone art from the Iron Era, one seal, one bead, one disc and a polishing stone were found.

Seal: It was found close to chest of the skeleton in the tomb M 11 at a depth of 70 cm in 1804.01 codes in 9/f plan square of the B-8 trench. It is composed of a green colored, compact stone. A moving horse figure was styled to the polished front side. Back side of the seal is convex bulged. It is horizontally string holed. It must have been used on

the neck passing the string through the hole. Its width is 1.9 cm, length is 1.4 cm, thickness is 0.6 cm and the hole diameter is 0.24 cm **(Figure 37)**.

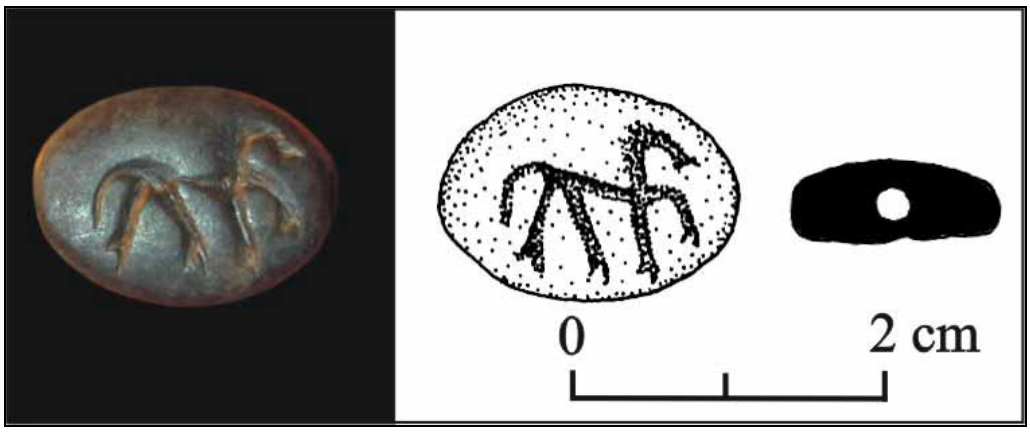


Figure 37: Seal with horse figure.

Ceramic Bead: It was found in the tomb M 40 at a depth of 88 cm in 1793.78 codes in 1/h plan square of the B-17 trench. This ceramic made bead has a circular section horizontally and a drop shape vertically. It has a lateral hole in the upper part and its upper and lower parts are blue and yellow in colors, respectively. Its length is 1.5 cm and the maximum and minimum thicknesses are 0.53 and 0.27 cm **(Figure 38)**.

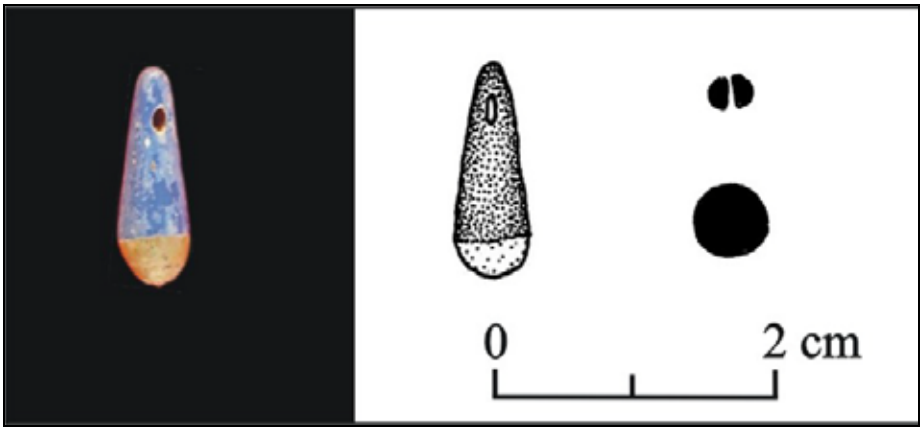


Figure 38: Ceramic bead.

Stone Disc: It was found in the site no. 2 at a depth of 15 cm in 1800.50 codes in 7/g plan square of the A-12 trench. Its lateral section is circular and vertical section is semi spherical. It has a diameter of 2.15 cm and height of 1.19 cm **(Figure 39)**.

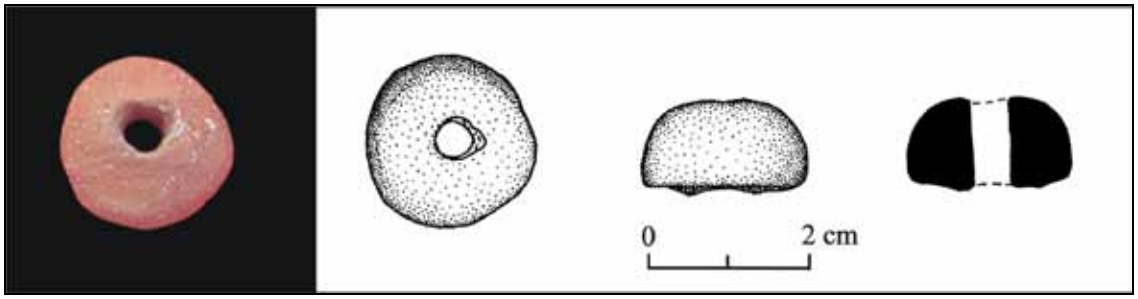


Figure 39: Stone disc.

Polishing Stone: It was found in the site no. 2 at a depth of 30 cm in 1799.65 codes in 7/f plan square of the A-12 trench. It has a semi crescent shape, square-like section and its thick edge is smoothed and sharp edge is broken. Its length is 11.2 cm, maximum and minimum widths are 2.4 and 0.7 cm and maximum and minimum thicknesses are 2 and 1.3 cm **(Figure 40)**.

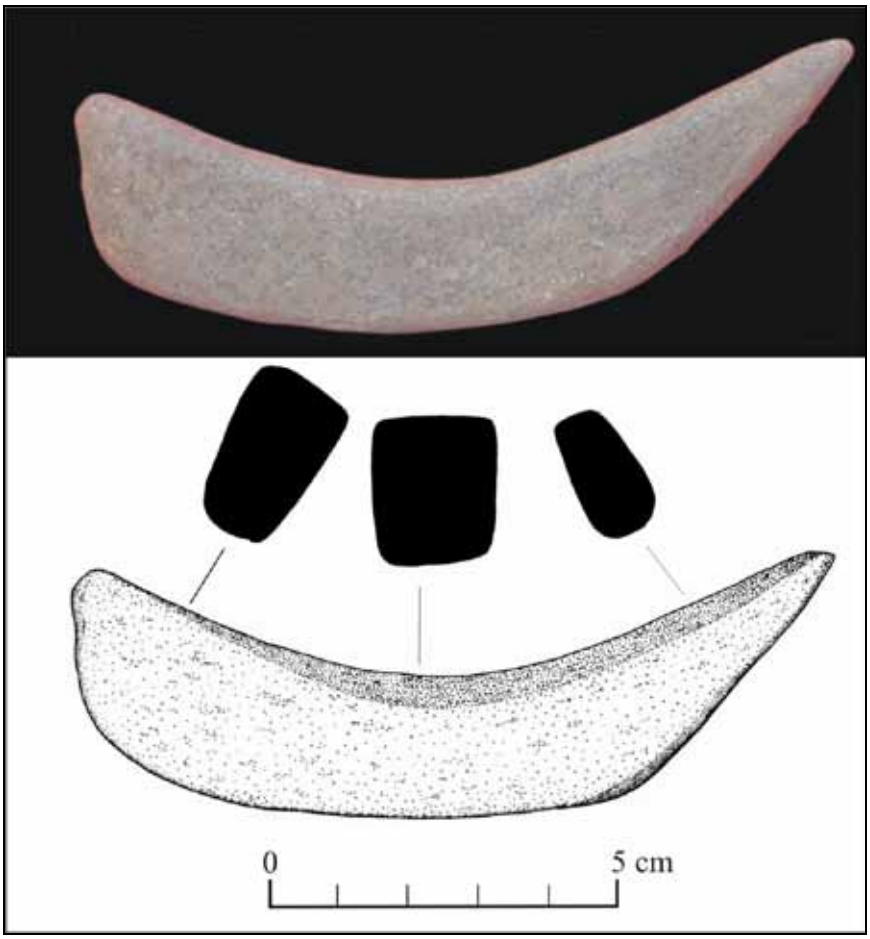


Figure 40: Polishing stone.

3- Metal Finds

Metallic arts found in Güllüdere are bronze, iron and silver made items.

***Bronze Needle Head**:* It was found in M12 tomb at a depth of 90 cm in 1803.83 codes in 8/g plan square of the B-8 trench. Bronze made needle head resembles an empty mushroom and it is broken from the connection site. Its diameter is 0.96 cm, height is 0.5 cm and thickness is 0.05 cm **(Figure 41)**.

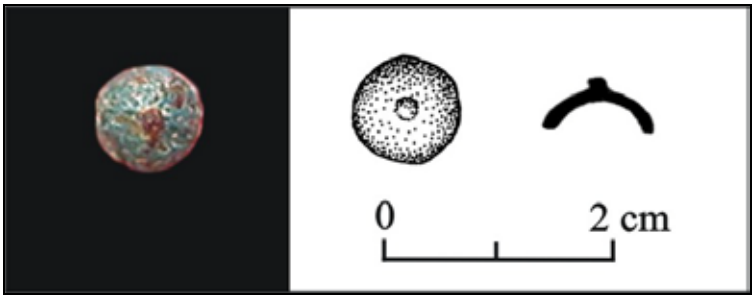


Figure 41: Bronze needle head.

Bronze Spatula: It was found during the sieving of cultural soil in 1-6/a-j plan square of the B-4 trench. The bronze spatula was shaped with mold and beating techniques. Two nodes were made in the area where stem and flat parts are connected. The stem of circular shape is found as two pieces. It has been subjected to an intense corrosion. Its height 8 cm and stem thickness is 3 cm **(Figure 42)**

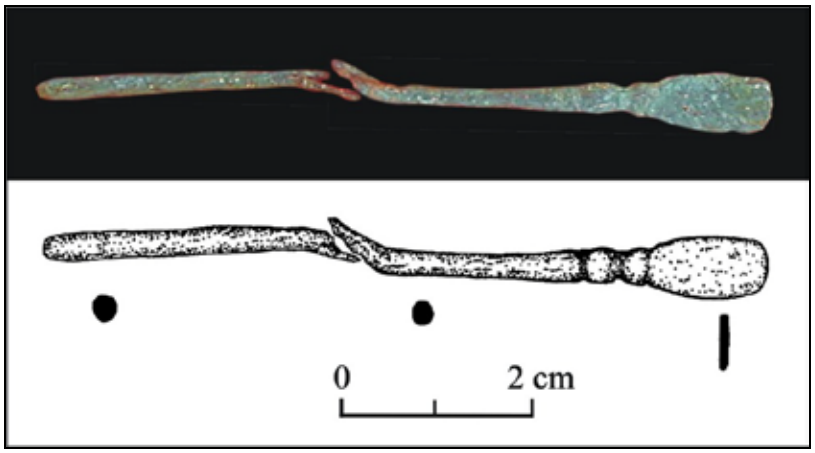


Figure 42: Bronze spatula.

Iron Ring: It was found in site A at a depth of 32 cm in 1799.68 codes in 6/g plan square of the B-12 trench. It is composed of a handled ring of 3.3 cm diameter and 0.2 cm thickness which contains at the center a hole of 0.3 cm diameter. The ring has been passed through the handle of spherical plat. The perforated spherical plat must have been used to be applied somewhere. However, it is difficult to say something about its function **(Figure 43)**.

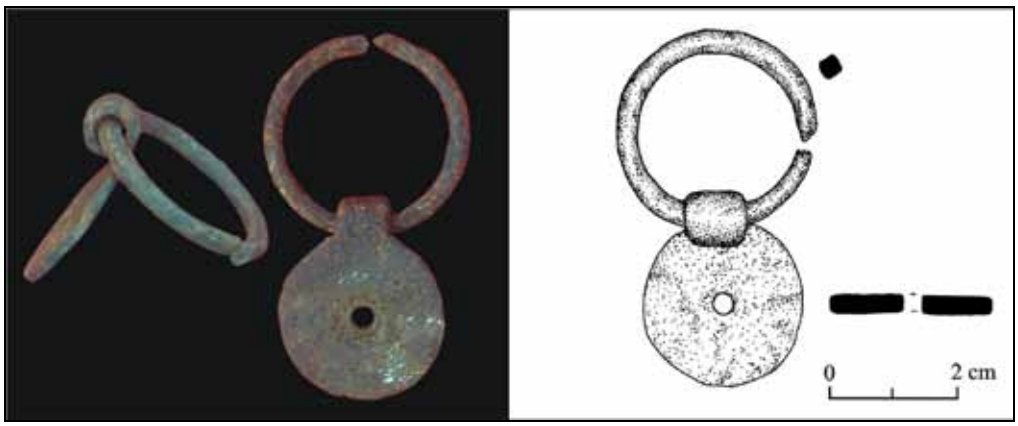


Figure 43: Iron ring.

Bronze Bracelet: It was insitu found in the M12 tomb in 8/g plan square of the B-8 trench. The bronze bracelet is complete and well preserved. Two tips of the bracelet are open and it thickened towards the tips. There are triplet parallel line groups formed with scrapping technique with 3 mm spacing from tips to the body and also transverse line decorations on both sides. Its diameter is 5.1 cm and minimum and maximum thicknesses are 0.3 and 0.45 cm, respectively **(Figure 44)**.

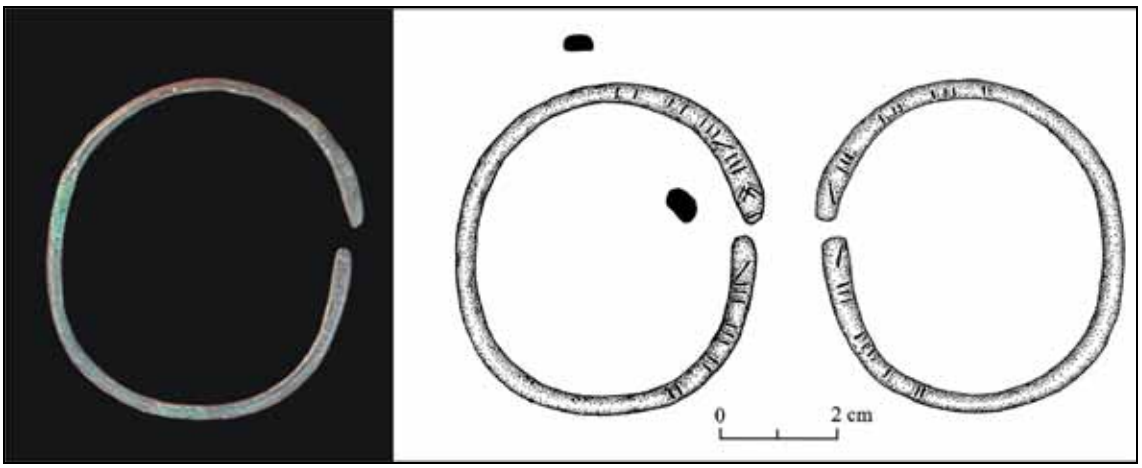


Figure 44: Bronze bracelet.

Bronze Bracelet: It was found at a depth of 80 cm in 1791.58 codes in 9/c plan square of the A-19 trench. One end of the bronze bracelet with a circular section was embraced with a wire thinner than the body itself. The entire piece could not be preserved and it has been corroded. Its thickness is 0.3 cm **(Figure 45)**.

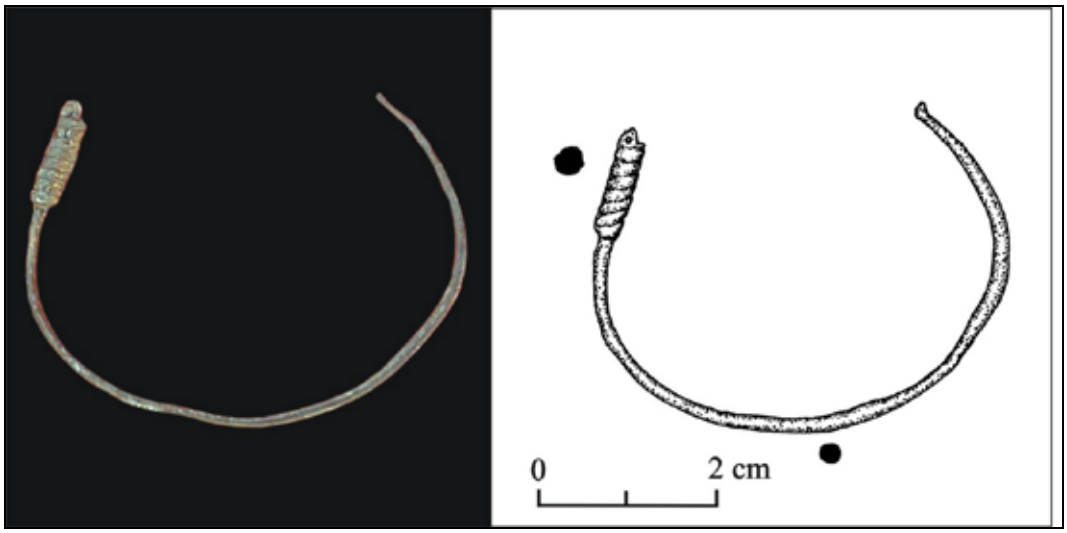
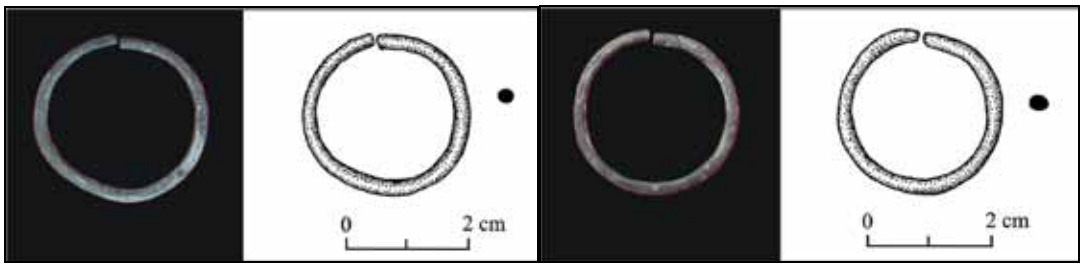


Figure 45: Bronze bracelet.

Silver Ring: Two silver rings found in M12 tomb in 8/g-h plan square of the B-8 trench were shaped with molds and bent techniques. They have circular section and their connection ends are open.

Safe No. B8024: Diameter 2.2 cm, maximum thickness 0.26 cm, minimum thickness 0.2 cm **(Figure 47: 1).**

Safe No. B8021: Diameter 2.8 cm, maximum thickness 0.25 cm, minimum thickness 0.2 cm **(Figure 47:2).**



1 **2**

Figure 47: Silver rings.

Browed Iron Ring: It was found at a depth of 1 m in 1792.64 codes in 10/a plan square of the A-18 trench. 1/3 of circular part of the iron ring is missing. Browed part and ring

are of same material. Due to intense corrosion, no decoration is shown. Diameter is 2 cm, thickness of ring is 0.2 cm and brow thickness is 0.5 cm **(Figure 48)**.

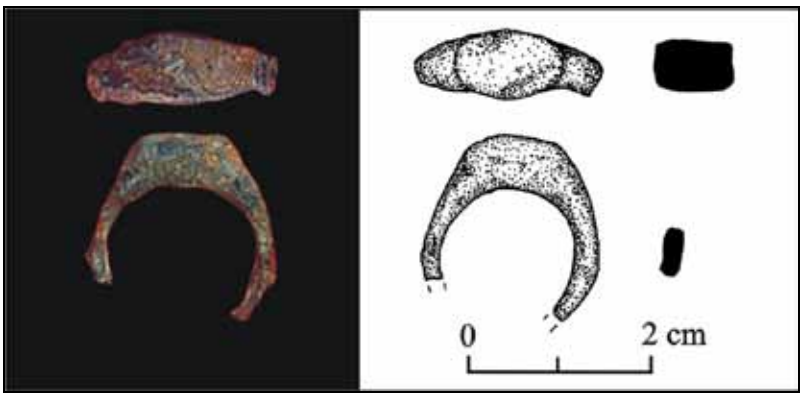


Figure 48: Browed iron ring.

Spiral Bronze Ring: It was found at a depth of 80 cm in 1792.43 codes in 3/ı plan square of the B-18 trench. Bronze ring is made with the auger technique. Diameter is 2 cm and maximum and minimum thicknesses are 0.2 and 0.16 cm **(Figure 49)**.

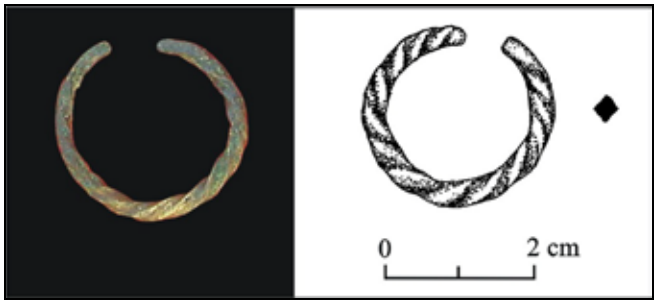


Figure 49: Spiral bronze ring.

Iron Dagger: It was found in site no. 1 at a depth of 56 cm in 1799.64 codes in 1/g plan square of the B-12 trench. It was produced from iron with mold and beating techniques. The body has a semi crescent shape. The part connected to the stem is fork-shaped and it has two clinch holes. It stands on square-shaped clinches. Its length is 13.8 cm, width is 2 cm and maximum and minimum thicknesses are 0.3 and 0.15 cm **(Figure 50)**.

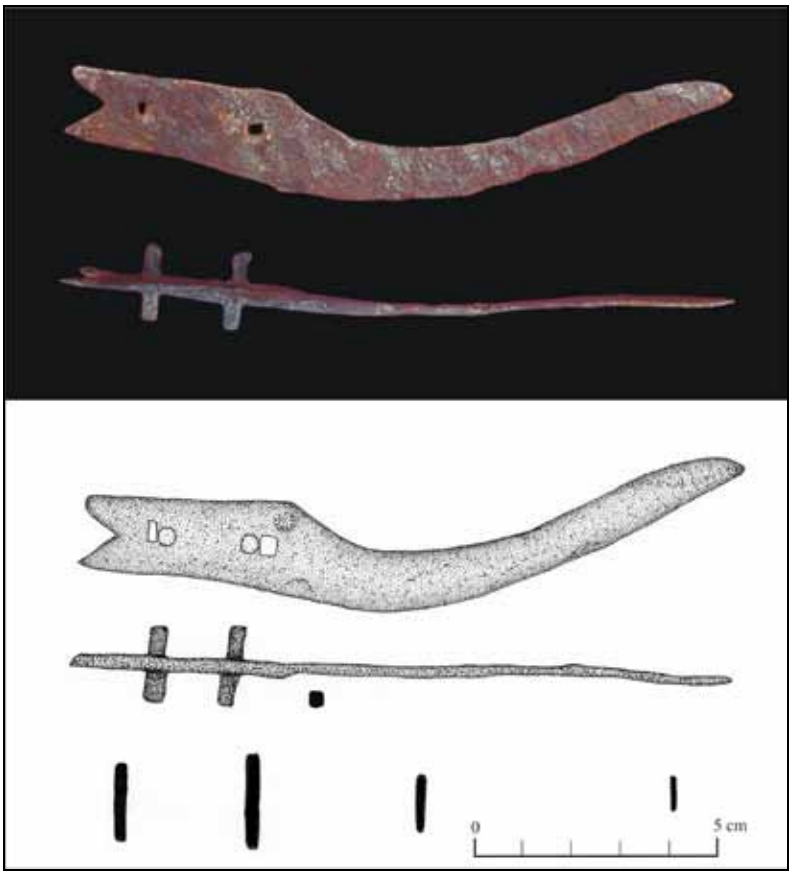


Figure 50: Iron dagger.

Iron Arrow: It was found at a depth of 68 cm in 1802.71 codes in 5/c plan square of the B-10 trench. The piece that was produced iron mold technique has a pyramid shape. Its four surfaces have long triangle motif. A number of four twisted projecting parts are shown from each corner of deep part. The length is 5.9 cm and maximum and minimum thicknesses are 1 and 0.2 cm **(Figure 51)**

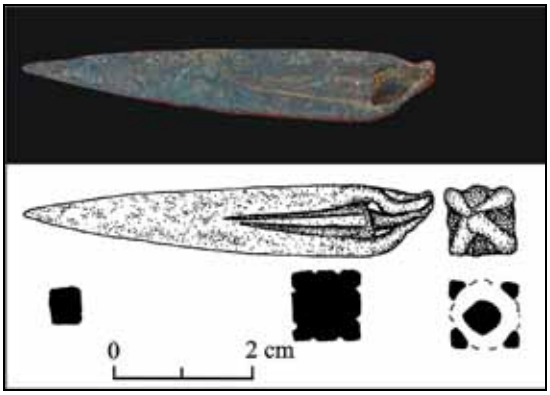


Figure 51: Iron Arrow.

D. POTTERY FINDS

1. WARE GROUPS

Profiling and decorated amorphous pieces of pottery and bowls found in the Güllüdere excavation are divided into 11 main ware groups on the basis of clay color, admixture materials and surface colors **(Table 1)**. Polishing, paint decoration and other decorative agents were considered as a discrimination factor in forming of these subgroups and this type of features of each piece was given in the catalogue.

No.	Ware Group	Subgroup	
1	Black Ware	1A	Polished Ware
2	Gray Ware	2A	Polished Ware
3	Brownish Gray Ware	3A	Polished Ware
4	Brown Slipped-Dark Gray Ware	4A	Polished Ware
		4B	Unpolished Ware
5	Thin Beige Slipped- Black Ware	5A	Polished Ware
6	Thick Black Core-Red Ware	6A	Polished Ware
		6B	Unpolished Ware
		6E	Outside-Polished Ware
7	Red Slipped Ware	7A	Polished Ware
		7B	Unpolished Ware
		7D	Inside-Polished Ware
		7E	Outside-Polished Ware
8	Red Exterior and Black Interior Ware	8A	Polished Ware
		8B	Unpolished Ware
		8E	Outside-Polished Ware
9	Thin Cream Slipped- Red Ware	9A	Polished Ware
10	Coarse Gritty Buff Ware	10A	Polished Ware
11	Cream Slipped-Painted Fine Ware	11A	Red Band Painted
		11B	Polychrome Painted

Table 1: Ware groups

The number of all describable, profiling and decorated amorphous Iron Age pottery explored in the Güllüdere excavation is 1026. Distribution of these pottery materials by main ware groups was calculated. Results are given in Table 2. The polishing ratios observed in pieces are shown in Table 3. In addition, the distribution of these 10 main ware groups by main typological forms is given in Table 4.

Main Ware Group	Profile Piece	Percent Ratio
1st Ware Group	31	3%
2nd Ware Group	6	1%
3rd Ware Group	12	1%
4th Ware Group	165	16%
5th Ware Group	20	2%
6th Ware Group	283	27%
7th Ware Group	395	39%
8th Ware Group	55	5%
9th Ware Group	33	3%
10th Ware Group	17	2%
11th Ware Group	14	1%
TOTAL	**1026**	**100%**

Table 2: Distribution of sherds by Ware groups

Ware no.	Polished		Unpolished		Total	
1	31	100%	0	0%	31	100%
2	6	100%	0	0%	6	100%
3	12	100%	0	0%	12	100%
4	112	68%	53	32%	165	100%
5	20	100%	0	0%	20	100%
6	142	50%	141	50%	283	100%
7	234	59%	161	41%	395	100%
8	4	7%	51	93%	55	100%
9	33	100%	0	0%	33	100%
10	0	0%	17	100%	17	100%
11	0	0%	14	100%	14	100%
Total	**592**	**%57**	**441**	**%43**	**1026**	**%100**

Table 3: Polishing ratios of ware groups

Ware no.	1	2	3	4	5	6	7	8	9	10	11	TOTAL
Pithos		1		6		9	42		5	2		62
Pot	11		2	64	7	78	116	9	8	4	2	301
Jug				1		1	9	2			2	15
Bowl	9		9	34	6	93	71	15	9	6	6	258
Pad		1		1			1					3
Circular Handle	2	1		8	2	38	57	1	6			115
Flat Deep	9	3		41	2	55	75	16	4	4		209
Ring Deep			1			6	9	1			1	18
Ewer				2	2	2		1				7
TOTAL	**991**											

Table 4: Distribution of main Ware groups by forms

Black Ware (1st Ware Group)

Among the Güllüdere ware groups, black wares with 31 pieces comprise 3% of all the ware groups **(Table 2)**. Black slip and black (7.5YR 2.5-1), (10YR 3/1) coat color are their general discriminative features **(Figure 52)**. They are made by wheel and well polished **(Table 3)**. Inner and outer surfaces are generally in the color of slip and they are normal coated. Pots and bowls comprise the main forms **(Table 4)**. Similar type of this ware group was also determined in the Bayburt surface exploration and dated as the second half of the 1st century. [18]

Figure 52: Ware no. 1, black ware.

[18] Sagona and Sagona 2004: 195-198, Ware 6:2.1.

Gray Wares (2nd Wares Group)

With 6 pieces, its share in the Güllüdere ware groups is only 1% **(Table 2)**. The general discriminative feature is gray (N 6/) slip and surface color **(Figure 53)**. Its color resembles those of inner and outer slips and is normal coated. Inner and outer surfaces are completely polished **(Table 3)**. They are shaped under heavy wheel or by hand. However, no wheel trace is shown on those produced under wheel. Gray wares resemble the *Grey-Slipped Brown-Black Ware*[19] found in Bayburt surface explorations that are dated as 5th century B.C.

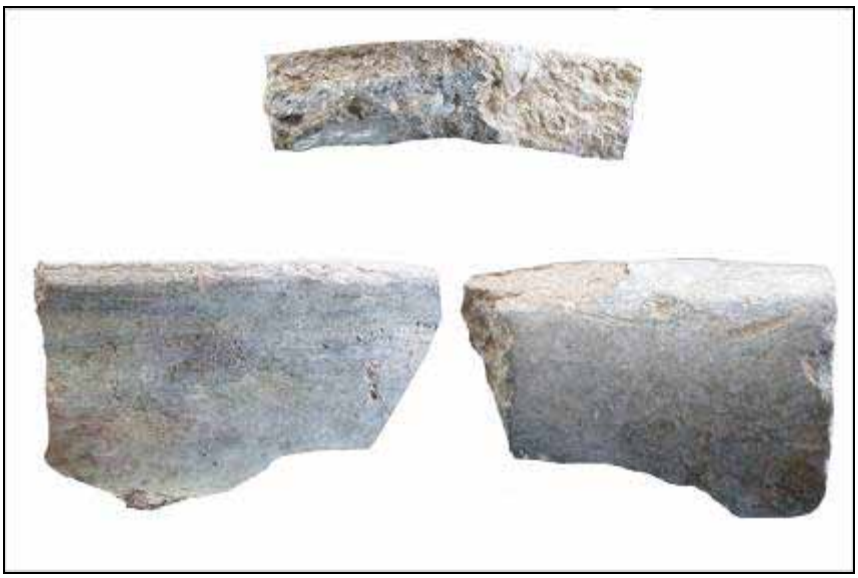


Figure 53: Ware no 2, gray ware.

Brownish Gray Wares (3rd Ware Group)

The general discriminative feature is brownish gray (2,5Y 5/2) cement and light brownish gray coating color (10YR 6/2) **(Figure 54)**. It is stony and calcareous and contains quartz and mica fragments and it is also compact, less porous and cemented. It is shaped under heavy wheel or by hand and all inner and outer rims are well polished **(Table 3)** and moderately or well cooked. With 12 pieces, its share among all other groups is only 1% **(Table 2)**.

[19] Sagona and Sagona 2004: 201-202, Ware 6:2.5.

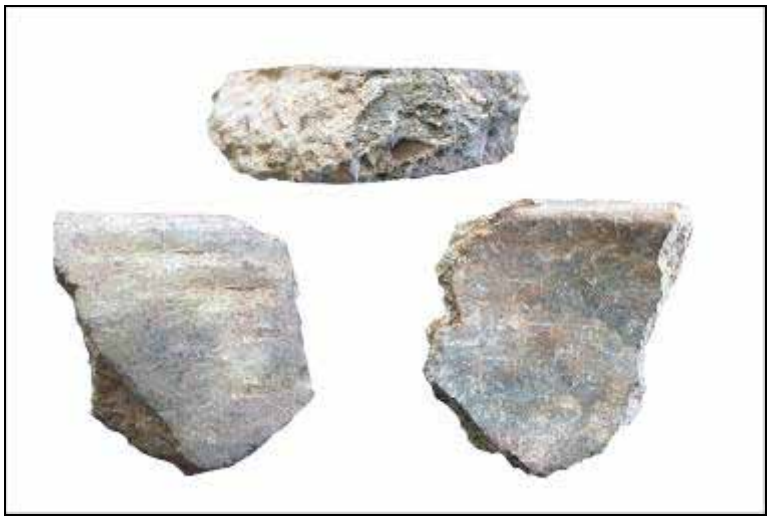


Figure 54: Ware no. 3, brownish gray ware.

Brown Slipped-Dark Gray Ware (4th Ware Group)

With 165 pieces, wares of this group comprise 16% of all the ware groups **(Table 2)** and they rank 3rd place. They are dark gray (7,5YR 3/1) cemented and brown (7,5YR 5/4) coated. The surface color is not homogeneous all around the container. Multi-coloring from various gray tones to black is very common in all wares of this group **(Figure 55)**. 68% of pieces were weakly polished while remaining 32% were not polished at all but roughness on the surface was smoothed **(Table 3)**. Little amount of stone, fine sand, limestone and mica were mixed with compact and less porous cement material. They were shaped under heavy wheel or by hand and were cooked moderately.

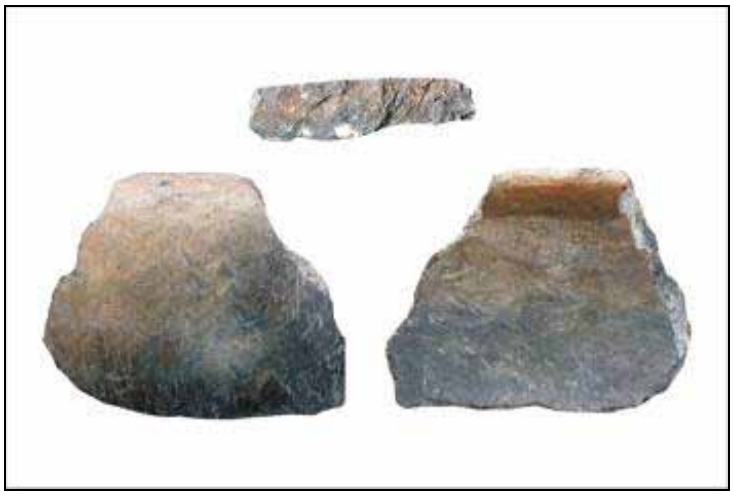


Figure 55: Ware no. 4, Brown Slipped-Dark Gray Ware.

Thin Beige Slipped- Black Ware (5th Ware Group)

The general discriminative feature is black cement (10YR 3/1) and fine beige colored coating (2.5Y 7/2, 7/3). With 20 pieces, wares of this group comprise 2% of all the ware groups **(Table 2)**. They were shaped under heavy wheel or by hand and their outer surfaces are weakly polished **(Table 3)**. The materials forming the ware are moderately stone, little limestone, mica of moderate amount, and fine white sand. They were well cooked. As a result of reduction applied during the cooking, outer parts of rims take a reddish color while inner parts are shown in black and gray colors. Since these containers were used for cooking purpose, soot signs are found on outer surfaces **(Figure 56)**.

Figure 56: Ware no. 5, Thin Beige Slipped- Black Ware

Thick Black Core-Red Ware (6th Ware Group)

With 283 pieces, wares of this group comprise 27% of all the Güllüdere ware groups and they rank 2nd place **(Table 2)**. Cement color is yellow (5YR 5/6-4/6). Its color is the same as the color of inner and outer cements and it has a normal coating or inner parts of some are wet stroked. As a result of irregular oxygen emission from the stove, some of containers have gray multi-colors on their surfaces and all of them were cooked at moderate temperatures **(Figure 57)**. They were produced under heavy wheel or by hand. 50% of the pieces are well polished and other 50% are unpolished but their surface is smoothed **(Table 3)**. Polishing was applied at both inside and outside but in some pieces only inside or outside parts were polished. Admixture materials are little stone, limestone, white fine sand and mica.

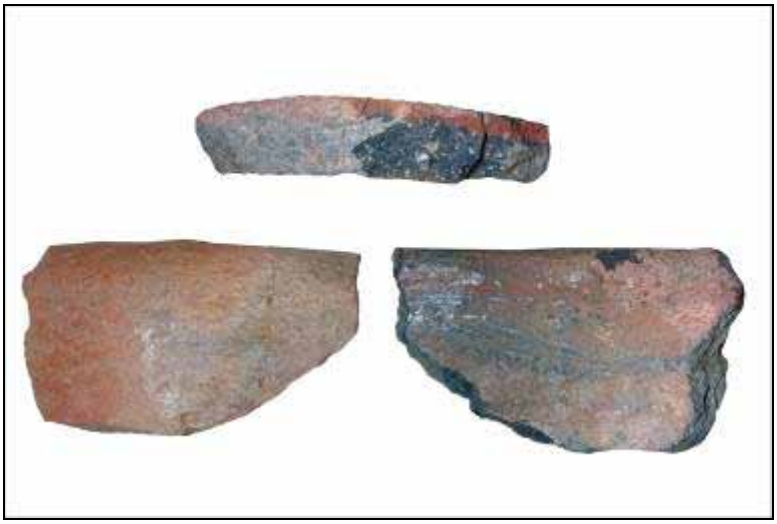


Figure 57: Ware no. 6, Thick Black Core-Red Ware.

Red Slipped Ware (7th Ware Group)

Among the Güllüdere ware groups, with 395 pieces and a share of 39%, they are the most commonly group observed **(Table 2)**. Cement color is yellowish red (5YR 5/6-4/6). Its color is the same as the color of inner and outer cements and it has a normal coating **(Figure 58)**. They were produced under heavy wheel or by hand. 59% of the pieces are well polished and other 41% are unpolished but only surface roughness is smoothed **(Table 3)**. Cements consisting of little stone, fine white sand, limestone and mica were cooked at moderate temperatures. They resemble the red slipped and coated wares[20] observed from the middle Iron Age of Eastern Anatolia to the end of Akamenid period.

Figure 58: Ware no. 7, red slipped and coated wares

[20] Sagona and Sagona 2004: 188-191, Ware 6:1.3.

Red Exterior and Black Interior Ware (8th Ware Group)

Cement color is various tones of reddish brown and red (7.5YR 5/6), (2,5YR 5/6). The most important feature of this group separating it from the 6th ware group is that reduction applied within the containers. As a result of this reduction that is consciously or unconsciously applied, inside of containers were colored in various tones of gray and black (7.5YR 2.5/1), (10YR 2/1). Normally, inner and outer surfaces are of cement's color and regularly coated. Multi-coloring could be seen on surfaces of some pieces **(Figure 59)**. They were produced under heavy wheel or by hand. 7% of the pieces are well polished and other 93% are unpolished but only surface roughness is smoothed **(Table 3)**. Polishing can be applied to both inner and exterior parts but also only the outer part. They were well and moderately cooked. The cement contains little stone, limestone, sand and mica and it is compact and less porous. With 55 pieces, they share 5% of the total wares **(Table 2)**.

Figure 59: Ware no. 8, Red Exterior and Black Interior Ware.

Thin Cream Slipped- Red Ware (9th Ware Group)

Cement color is red (2.5YR 5/6) and some are gray in color (5Y 5/1). Inner and outer surfaces are dirty cream colored (10YR 7/3), thinly coated and polished **(Table 3)**. All parts were shaped under wheel. Stone, white fine sand, limestone, quartz and mica were added. Compact, less porous, moderately quality cements were well and moderately cooked. Slip color is the most important discriminative feature **(Figure 60)**. With 33 pieces, they share 3% of the total wares **(Table 2)**. They closely resemble cream slipped red wares of the Eastern Anatolia Iron Age[21].

[21] Sagona and Sagona 2004: 202, Ware 6:3.

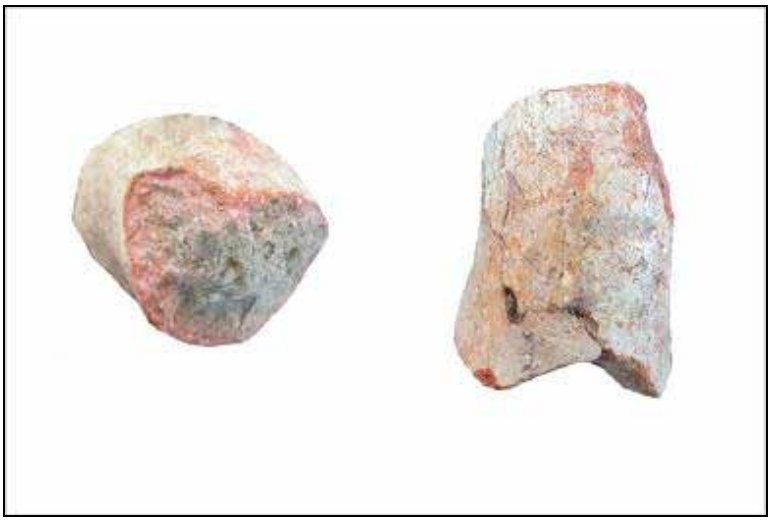


Figure 60: Ware no. 9, Thin Cream Slipped- Red Ware.

Coarse Gritty Buff Ware (10th Ware Group)

It is buff cemented (10YR 6/2). Inner and outer parts are of the cement color and have a thin coating. They were produced under heavy wheel or by hand. All parts are unpolished only the surface was smoothed **(Table 3)**. Coarse brown stone that was mixed with clay is the most important discriminative feature. These coarse stones are visible when the pieces are broken and they are also easily noticeable on inner and outer surfaces **(Figure 61)**. Limestone and sand are the other admixture materials. Cement that is compact and less porous was cooked at moderate temperature. With 17 pieces, they share 2% of the total wares **(Table 2)**.

Figure 61: Ware no. 10, Coarse Gritty Buff Ware.

Cream Slipped-Painted Fine Ware (11th Ware Group)

Cement color is reddish yellow (5YR 7/8) or pinkish (7.5YR 6/4). Inner and outer parts are uncovered or yellowish cream colored (10YR 8/3) and thin coated. Some parts are thick reddish (2.5YR 4/6) band on a cream coating (ware no. 11A) (Figure 62: 1) while some reddish brown (2.5YR 4/4) or black (5YR 2.5/1) painted (ware no. 11B) **(Figure 62: 2)**. The whole part was produced on the wheel and well cooked. Surfaces are unpolished but smoothed **(Table 3)**. Fine sand, limestone, mica and chamotte were added and they are also compact and less porous and fine quality cemented. The fine quality cement makes them separable from the 9th group. With 14 pieces, they share 1% of the total wares **(Table 2)**. They resemble painted wares of the late Iron Age of Eastern Anatolia.[22]

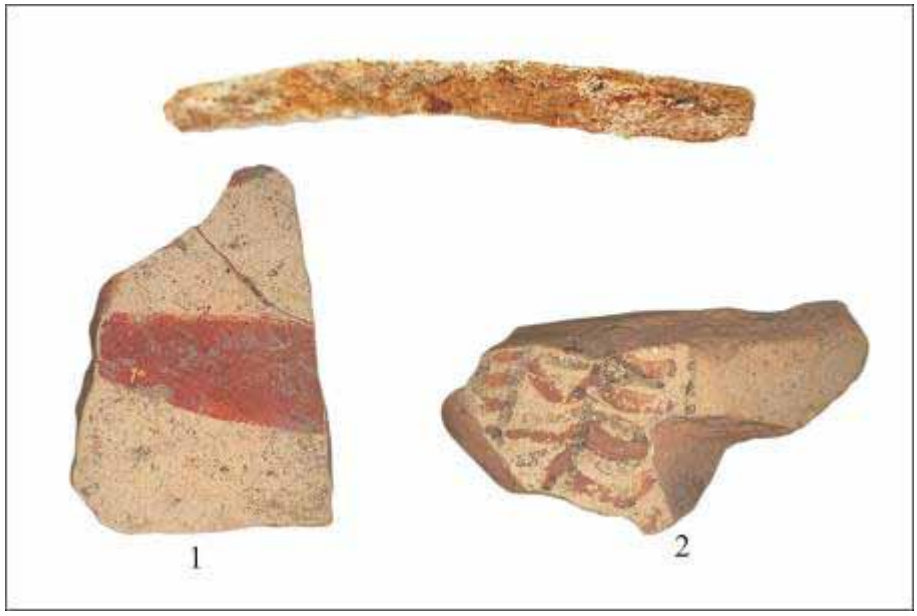


Figure 62: Ware no. 11 A and 11 B, Cream Slipped-Painted Fine Ware.

[22]Sagona and Sagona 2004: 192-194, Ware 6:1.5, 194-195, Ware 6:1.8; Sevin et al 1998: 575-577; Sevin et al. 2000: 410-411. In the Van-Karagündüz Tumulus, most of the wares observed in the 3rd layer appear suddenly and bowls rather than pots are widely used in the repertory. It is stated that in most parts of these items, a whitish-cream coat is applied on reddish cements of containers while some are decorated with paint.

Type no	Type	Subtype	Explanation
Type 1	Plates	Type 1.1	Circular, simple rimmed plates with flat body
		Type 1.2	Thick rimmed plates with flat body
		Type 1.3	Convex rimmed plates with flat body
		Type 1.4	Slightly outward thickened, flat rimmed plates with flat body
		Type 1.5	Double thickened rimmed plates with flat body
		Type 1.6	Circular, simple steep rimmed plates with flat body
		Type 1.7	Double thickened, circular rimmed plates with open convex body
		Type 1.8	Concave, sharp rimmed plates with flat body
		Type 1.9	Flat, simple rimmed, sharp reflexive plates with flat body
		Type 1.10	Concave, simple rimmed plates with flat body
		Type 1.11	Flat, simple steep rimmed, sharp reflexive plates with flat body
		Type 1.12	Double thickened rimmed, sharp reflexive plates with flat body
		Type 1.13	Circular simple rimmed convex, flat deep plates
		Type 1.14	Sharp, simple rimmed, shallow plates
Type 2	Bowls	Type 2.1	Sharp, simple rimmed, convex bowls
		Type 2.2	Circular, simple rimmed, convex bowls
		Type 2.3	Convex bowls, sharp rimmed, sharp inclined from the lip
		Type 2.4	Circular, simple rimmed, sharp circular shoulder reflexive convex bowls
		Type 2.5	Slightly outward thickened rimmed, sharp shoulder reflexive convex bowls
		Type 2.6	Convex bowls with circular simple rims slightly pulled inward
		Type 2.7	Circular convex bowls with simple rims pulled inward
		Type 2.8	Circular, open convex bowls with simple rims
		Type 2.9	Spherical bowls with simple rims

		Type 2.10	Spherical bowls with rims cut inward
		Type 2.11	Open convex bowls with smoothed rim surfaces
		Type 2.12	Simple rimmed, convex bowls with circular reflexive shoulder
		Type 2.13	Simple rimmed, slightly outward thickened open convex bowls
		Type 2.14	Simple circular rimmed, circular bowls with lower part canalled outwards
		Type 2.15	Outward thickened, inward inclined rimmed, semi spherical bowls
		Type 2.16	Circular bowls with flat rims slightly thickened outward
		Type 2.17	Inward pulled, outward thickened, circular reflexive shouldered, outward inclined bowls
		Type 2.18	Outward inclined bowls with rims slightly thinned outward
		Type 2.19	Open convex bowls with rims thickened outward
		Type 2.20	Open convex bowls with simple rims slightly pulled outward
		Type 2.21	Simple rimmed, slightly “S” profiled bowls
		Type 2.22	Bowls with flat rims inclined outward with slightly thickened both inward and outward
		Type 2.23	Simple rimmed, sharp shouldered, outward inclined bowls
		Type 2.24	Deep convex bowls with sharp rims cut inward
		Type 2.25	Circular simple rimmed, deep convex bowls
		Type 2.26	Circular simple rimmed, outward inclined deep bowls
		Type 2.27	Sharp simple rimmed, slightly outward turned deep bowls
		Type 2.28	Steep deep bowls with rims cut outward
		Type 2.29	Slightly outward turned, deep bowls with flat rims slightly thickened inward
		Type 2.30	Outward turned deep bowls with simple rims slightly pulled inward
		Type 2.31	Circular, simple steep rimmed, outward-inclined deep bowls with circular reflexive shoulders
		Type 2.32	Circular simple rimmed, outward-inclined, sharp reflexive shouldered deep bowls
		Type 2.33	Flat, simple rimmed, sharp reflexive shouldered, outward-inclined, deep bowls
		Type 2.34	Simple rimmed, inward-bended, outward-inclined

			flat deep bowls
		Type 2.35	Inward-bended, outward-inclined deep bowls with rims thickened outward
		Type 2.36	Outward-inclined, inward cut and thickened deep bowls
		Type 2.37	Slightly outward-inclined deep bowls with lower part of simple, flat rims thinned outward
		Type 2.38	Double thickened, outward-inclined deep bowls with shallow canalled rim
		Type 2.39	Outward-inclined deep bowls with rims cut inward
Type 3	Pots	Type 3.1	Circular simple rimmed, flat pots without neck
		Type 3.2	Outward pulled, flat, simple rimmed, wide, flat pots without neck
		Type 3.3	Outward pulled, circular, simple rimmed, spherical pots without neck
		Type 3.4	Outward pulled, circular, thick rimmed, spherical pots without neck
		Type 3.5	Outward pulled, sharp rimmed, spherical pots without neck
		Type 3.6	Outward bended, sharp rimmed, pots without neck
		Type 3.7	Circular simple rimmed pots with a short, steep neck
		Type 3.8	Simple rimmed, outward-inclined, short necked, spherical flat pots
		Type 3.9	Pots with a short, steep neck and rims of thickened outward
		Type 3.10	Simple rimmed, outward-inclined pots with a short neck
		Type 3.11	Slightly outward thickened rimmed, spherical pots with short neck
		Type 3.12	Circular simple rimmed, outward-bended spherical pots with short neck
		Type 3.13	Simple rimmed, spherical pots with outward-inclined neck
		Type 3.14	Simple, flat rimmed, spherical pots with outward-inclined neck
		Type 3.15	Outward thickened rimmed, oval pots with outward-inclined neck
		Type 3.16	Outward pulled, circular, simple rimmed oval pots without neck
		Type 3.17	Outward pulled, circular, thickened rimmed, oval pots without neck
		Type 3.18	Outward thickened, flat rimmed, oval pots with short, steep neck
		Type 3.19	Circular simple rimmed, outward-inclined, short

			oval pots
		Type 3.20	Outward pulled, simple, wide rimmed oval pots
		Type 3.21	Outward pulled, circular, simple rimmed oval pots without neck
		Type 3.22	Simple, flat rimmed, outward-inclined, oval pots without neck
		Type 3.23	Outward pulled, simple, flat, sharp inward-reflexive rimmed, oval pots without neck
		Type 3.24	Simple rimmed, outward-bended oval pots with narrow, short neck
		Type 3.25	Outward thickened rimmed, oval pots with narrow, short neck
		Type 3.26	Circular simple rimmed, oval flat-deep pots with steep neck
		Type 3.27	Slightly outward-thickened, flat rimmed pots with slightly concave narrow neck
		Type 3.28	Slightly outward-thickened, circular, rimmed pots with concave neck
		Type 3.29	Slightly outward-thickened, sharp rimmed pots with concave neck
		Type 3.30	Outward-thickened, circular, rimmed pots with concave narrow neck
		Type 3.31	Outward-cut, thickened, pots with concave neck
		Type 3.32	Outward-thickened rimmed pots with cylindrical long neck
		Type 3.33	Outward thickened, flat rimmed pots with concave neck
		Type 3.34	Outward pulled, circular, simple rimmed flat pots
		Type 3.35	Outward pulled, sharp rimmed flat pots with vertical canal handle
		Type 3.36	Flat, simple rimmed, compressed pots with cylindrical ewer
		Type 3.37	Outward bended, circular, simple rimmed compressed pots with cylindrical ewer
		Type 3.38	Flat, simple rimmed, compressed pots with outward-inclined, short neck
		Type 3.39	Outward bended, sharp rimmed, sharp inward-reflexive open pots
		Type 3.40	Outward bended, sharp rimmed, open pots
		Type 3.41	Outward pulled, circular rimmed open pots
		Type 3.42	Outward-thickened rimmed compressed open pots without neck
		Type 3.43	Outward bended, sharp rimmed, open pots without neck

Type 4	Bottles	Type 4.1	Outward bended, circular, simple rimmed bottles with narrow neck
		Type 4.2	Outward-thickened, circular rimmed bottles with narrow neck
Type 5	Mug	Type 5.1	Outward-inclined, circular, simple rimmed mug with handle vertical banded from the rim
		Type 5.2	Circular, simple rimmed mug with concave neck and circular handle
Type 6	Pithos	Type 6.1	Outward-thickened rimmed oval, deep pithos without neck
		Type 6.2	Outward-thickened, flat rimmed oval pithos without neck
		Type 6.3	Outward-inclined, circular, simple rimmed oval pithos without neck
		Type 6.4	Outward-inclined, circular rimmed spherical pithos without neck
		Type 6.5	Outward-thickened, inward-cut rimmed spherical pithos without neck
		Type 6.6	Outward-thickened rimmed short pithos
		Type.6.7	Outward-thickened, flat rimmed pithos with short, narrow neck
		Type 6.8	Outward-thickened, flat rimmed, outward-inclined pithos with short, narrow neck
		Type 6.9	Outward-thickened, flat rimmed pithos without neck
		Type 6.10	Outward-thickened, flat rimmed, slightly outward-pulled pithos without neck
		Type 6.11	Outward-inclined, circular rimmed pithos without neck
		Type 6.12	Outward-inclined, circular rimmed pithos with concave neck
		Type 6.13	Outward-thickened, flat rimmed, slightly overturned pithos with short neck
		Type 6.14	Outward-bended, flat rimmed pithos with short neck
		Type 6.15	Outward-thickened, circular rimmed overturned pithos with neck
		Type 6.16	Outward-thickened, flat rimmed, slightly overturned pithos with neck
		Type 6.17	Outward-inclined, circular rimmed, slightly overturned pithos with neck

Table 5: Typology table for the Güllüdere Iron Age Pottery

E. IRON AGE POTTERY CATALOGUE

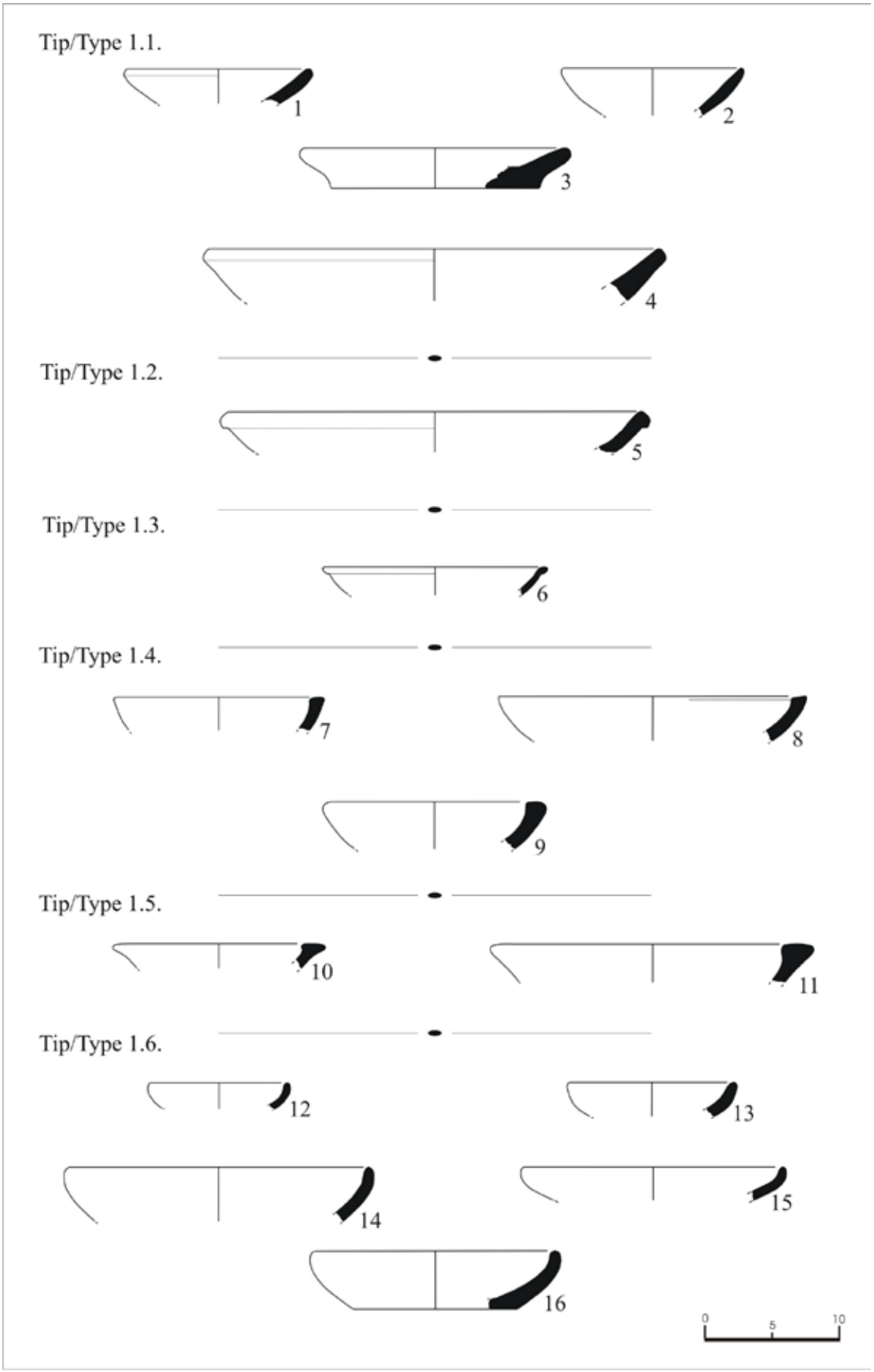
ABREVATIONS

Ak.	Akamenit
D	Demir Çağ
GD	Geç Demir
K	Konteks
Krş.	Karşılaştırma
M	Merkez
MN	Mal No
No.	Numara
OD	Orta Demir
P	Part
T. No	Tip No
U	Urartu

A	Akhemenid
I	Iron Age
K	Kontekst
LI	Late Iron
MI	Mıddle Iron
No.	Number
P	Parthian
Ref.	Referance
S	Site
T. No	Type No
U	Urartian
WN	Ware No

Res./Fig. 63

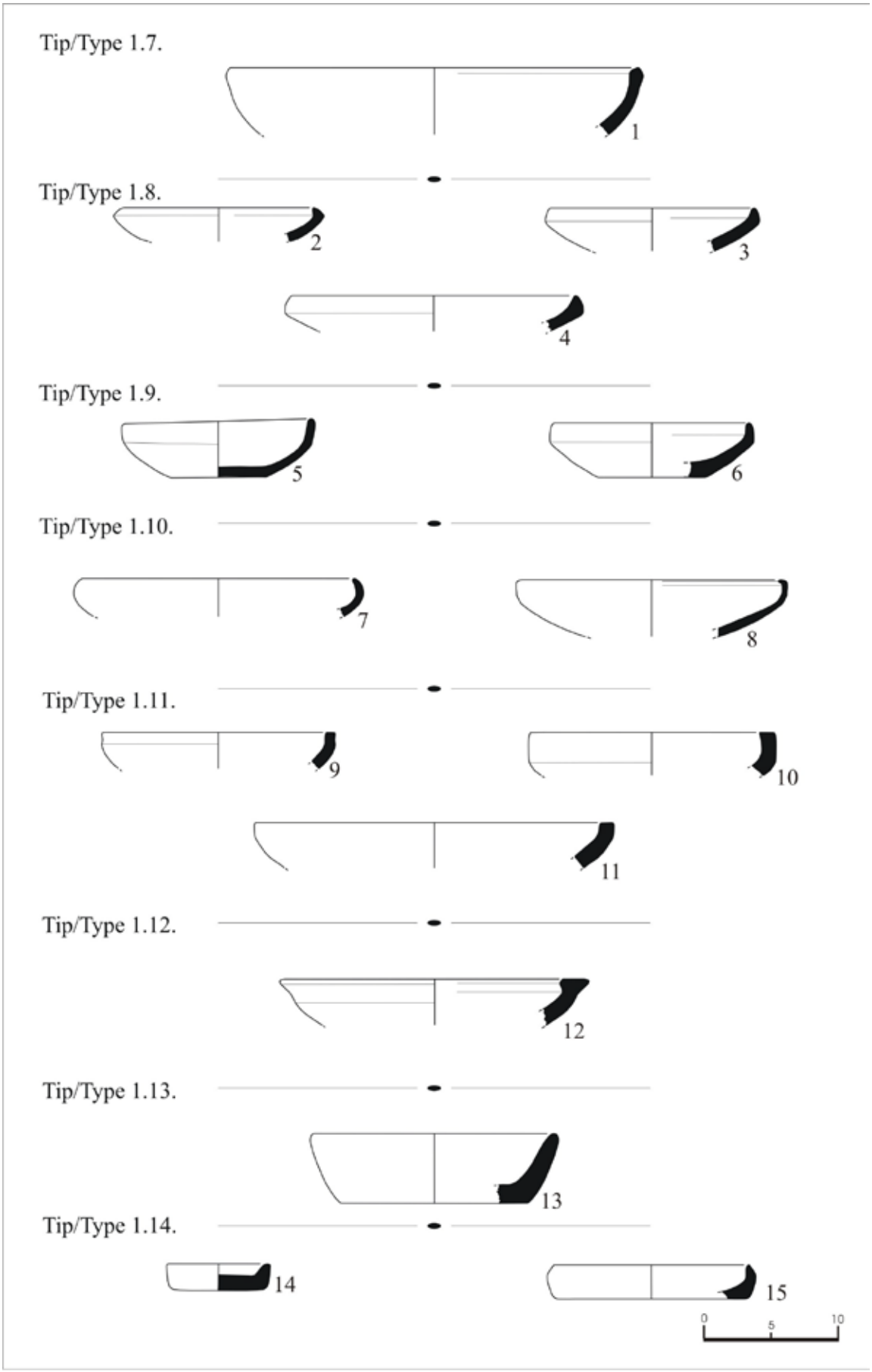
No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş/Ref.
1	A-19	1.1	4 B	Eymür Kale	800-300	Sagona and Sagona 2004: Fig. 154: 1.
				Kaleköy	OD/MI	Ökse 1988: Abb. 316.
2	B-18	1.1	3 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 33: 7,8.
3	B-11	1.1	7 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 33: 5, 6.
4	B-4	1.1	5 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 33: 5, 6.
5	B-5	1.2	7 B	Qal'eh Vaziri	U/U	Kroll 1976: Abb. 34: 3.
6	B-3	1.3	1 A			
7	A-19	1.4	7 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 188: 8.
8	A-19	1.4	6 A	Çimentepe	800-300	Sagona and Sagona 2004: Fig. 159: 10.
9	B-10	1.4	10 B			
10	A-12	1.5	3 A	Cimintepe II.	Ak./Ak.	Summers 1993: Fig. 7: 6.
11	A-19	1.5	4 A	Cimintepe II.	Ak./Ak.	Summers 1993: Fig. 6: 2.
				Kaleköy	OD/MI	Ökse 1988: Abb. 324.
12	B-13	1.6	6 A	Qiz Qal'eh	U-Ak./U-Ak.	Kroll 1976: Abb. 18: 4.
13	A-11	1.6	4 A	Čeraqah-e Amir	U/U	Kroll 1976: Abb. 26: 1.
14	B-3	1.6	6 B			
15	B-18	1.6	10 B	Verahram	U/U	Kroll 1976: Abb. 6: 3.
16	A-11	1.6	4 A	Çayıryolu Tepe 2	900-300	Sagona and Sagona 2004: Fig. 138: 2.


Tip/Type 1.1.
1
2
3
4
Tip/Type 1.2.
5
Tip/Type 1.3.
6
Tip/Type 1.4.
7
8
9
Tip/Type 1.5.
10
11
Tip/Type 1.6.
12
13
14
15
16
0
5
10

Res./Fig. 63

Res./Fig. 64

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-17	1.7	4 A	Čeraqah-e Amir	U/U	Kroll 1976: Abb. 26: 2.
2	A-11	1.8	6 A	Qal'eh Gavur	U/U	Kroll 1976: Abb. 43: 3.
3	B-15	1.8	6 A	Qal'eh Gavur	U/U	Kroll 1976: Abb. 43: 3.
4	A-19	1.8	6 A	Çayıryolu Tepe	800-300	Sagona and Sagona 2004: Fig.136: 6.
5	B-11	1.9	6 A			
6	B-15	1.9	4 E	Livar	U/U	Kroll 1976: Abb. 21: 8.
7	B-9	1.10	7 E			
8	B-12	1.10	9A			
9	B-18	1.11	7 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Fig. 28: 4.
				Kız Kalesi	Ak.-P /Ak.-P	Kroll 1976: Abb. 20: 16.
10	B-18	1.11	6 A			
11	B-12	1.11	6 A			
12	A-18	1.12	4 A	Cimintepe II.	Ak./Ak.	Summers 1993: Fig. 7: 7.
13	A-19	1.13	10 B			
14	A-12	1.14	4 A			
15	B-10	1.14	2 E			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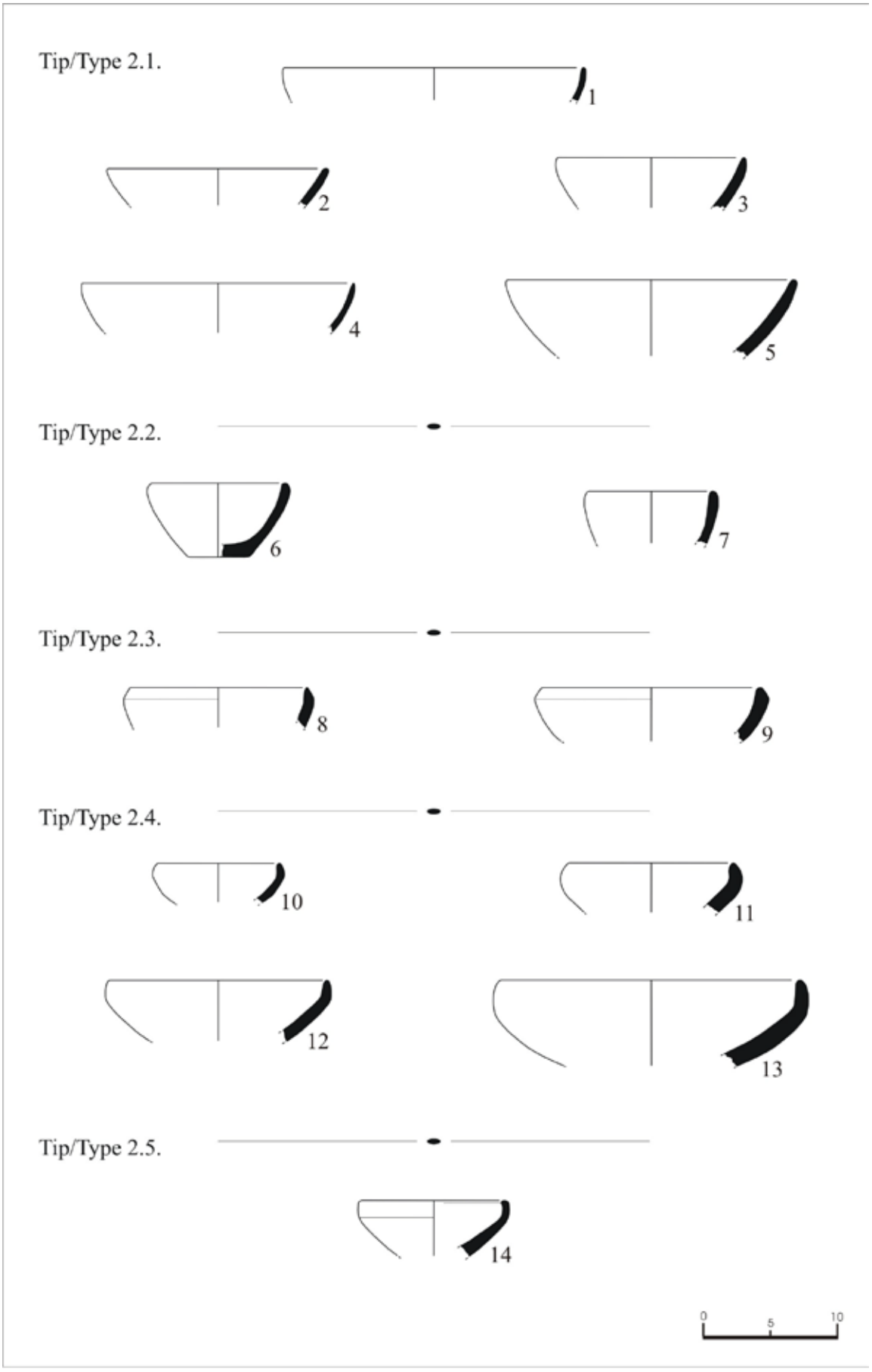
Res./Fig. 64

Res./Fig. 65

No.	K	T. No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-3	2.1	1 A	Kale İsmail Ağa	800-600	Belgiorno et al. 1984: Fig. 54: 167.
2	A-12	2.1	6 A			
3	A-19	2.1	6 A	Kilise Tepe	900-300	Sagona and Sagona 2004: Fig. 172: 13.
				Kale İsmail Ağa	800-600	Belgiorno et al. 1984: Fig.54:169.
				Qal'eh Oghlu	U/U	Kroll 1976: Abb. 12: 4.
4	B-3	2.1	1 A	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 13: 3.
5	A-19	2.1	4 A	Pulur/Gökçedere)	900-300	Sagona and Sagona 2004: Fig. 158: 3.
				Kilise Tepe	900-300	Sagona and Sagona 2004: Fig. 172: 13.
				Sangar	U/U	Kroll 1976: Abb. 3: 6.
				Qal'el Oghlu	U/U	Kroll 1976: Abb. 14: 6.
				Seqindel	U/U	Kroll 1976: Abb. 30: 4.
6	B-3	2.2	7 A	İmikuşağı	500-300	Sevin 1995: Res. 22: 3.
7	A-11	2.2	6 A			
8	B-13	2.3	7 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 35: 5.
9	B-3	2.3	6 B	Qiz Qal'eh	U-Ak./U-Ak.	Kroll 1976: Abb. 18: 26.
10	B-19	2.4	6 A			
11	A-19	2.4	6 A			
12	B-19	2.4	4 A	Seqindel	U/U	Kroll 1976: Abb. 29: 5.
13	A-19	2.4	6 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 188: 12.
14	A-11	2.5	7 E			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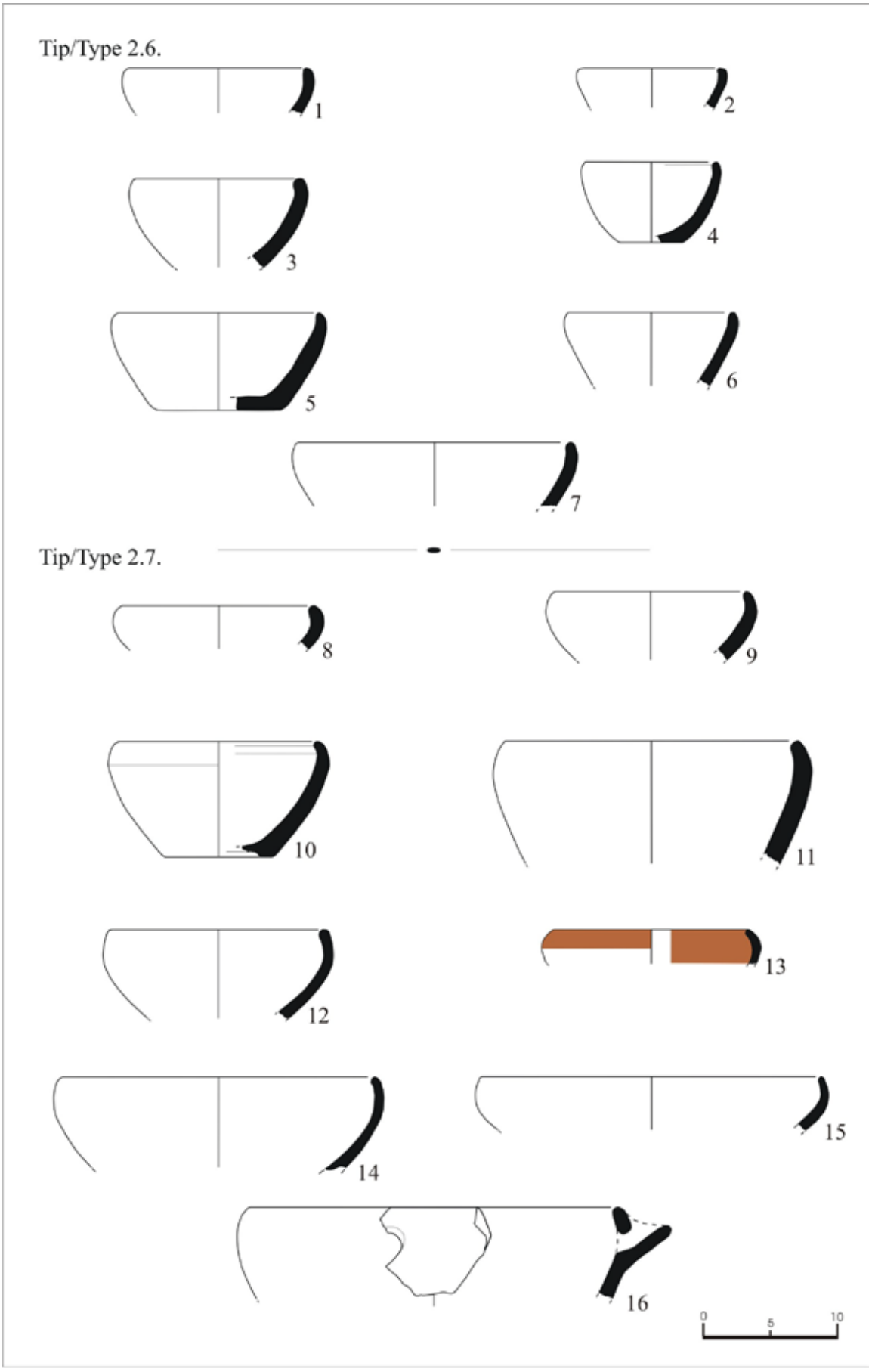
Res./Fig. 65

Res./Fig. 66

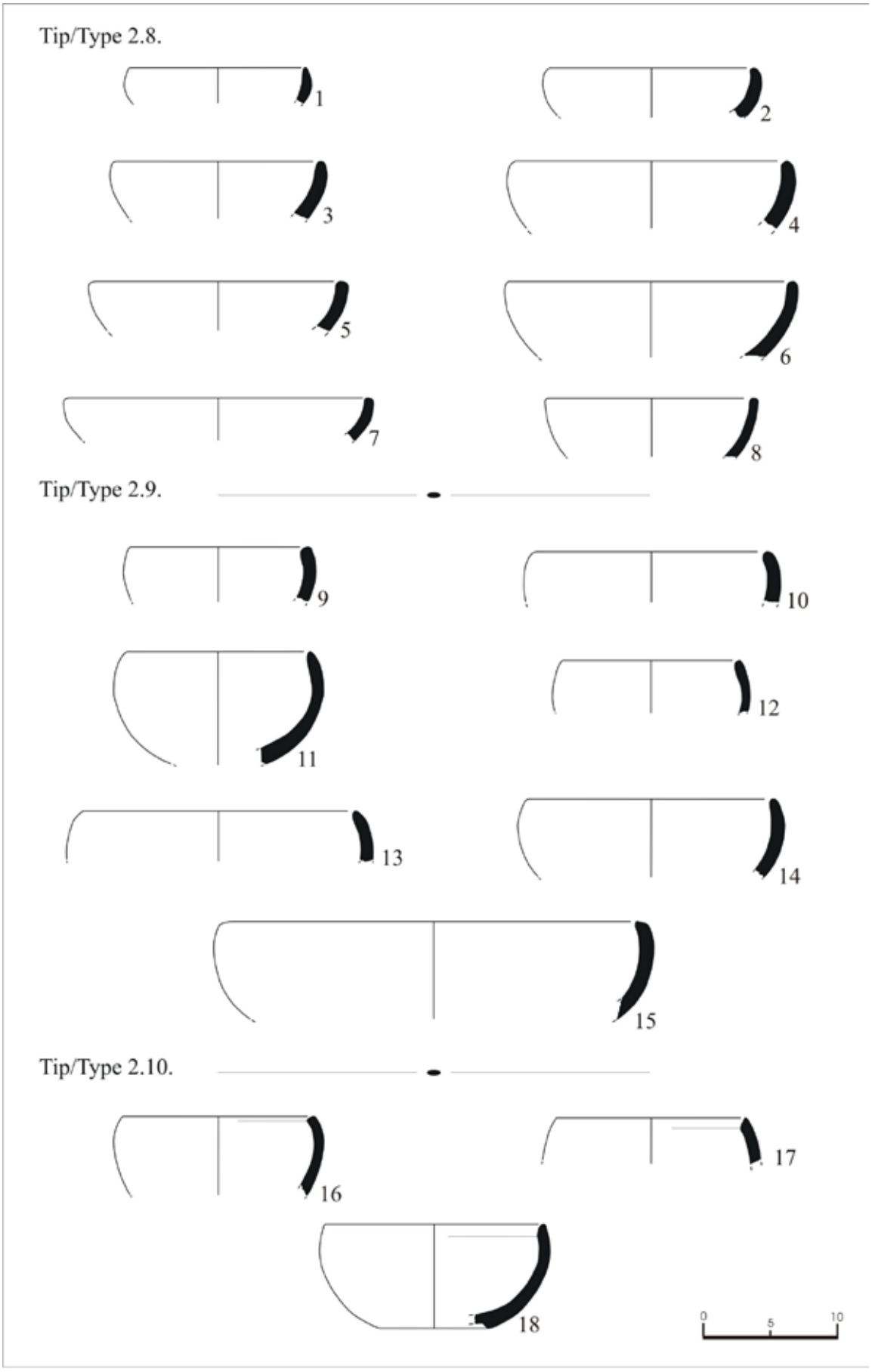
No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	A-18	2.6	5 A	Kaleköy	OD/MI	Ökse 1988: Abb. 43.
2	B-11	2.6	7 B			
3	B-12	2.6	8 A			
4	A-18	2.6	6 A			
5	B-10	2.6	4 E			
6	A-18	2.6	7 A	Qal'eh Khezarlu	OD/MI	Kroll 1976: Abb. 1: 16.
7	B-3	2.6	4 A	Čeraqah-e Amir	U/U	Kroll 1976: Abb. 26: 7.
				Tepe Lumbad	U/U	Kroll 1976: Abb. 37: 2.
8	A-19	2.7	7 A	Çimentepe	800-300	Sagona and Sagona 2004: Fig. 159: 9.
				Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 188: 13.
9	B-18	2.7	7 A	Dikmetaş	800-300	Sagona and Sagona 2004: Fig. 155: 11.
10	B-12	2.7	4 B	Kaleköy	OD/MI	Ökse 1988: Abb. 24.
11	A-18	2.7	7 E	Dikmetaş	800-300	Sagona and Sagona 2004: Fig. 155: 11.
				Qal'eh Khezarlu	OD/MI	Kroll 1976: Abb. 1: 17.
12	B-11	2.7	7 E			
13	A-11	2.7	11A			
14	A-11	2.7	7 A			
15	B-19	2.7	7 B	Çengiler Tepe	500-300	Sagona and Sagona 2004: Fig. 188: 11.
16	B-11	2.7	5 A			



Res./Fig. 66

Res./Fig. 67

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-19	2.8	6 E	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 12: 6.
				Qiz Qal'eh	U-Ak./ U-Ak.	Kroll 1976: Abb. 18: 2.
				Tazešahr	U/U	Kroll 1976: Abb. 32: 1.
2	B-10	2.8	6 A			
3	B-18	2.8	6 B	Bayburt-Değirmentepe	500-300	Sagona and Sagona 2004: Fig. 147: 10.
4	B-15	2.8	4 A	Qal'eh Siah	U/U	Kroll 1976: Abb. 10: 1.
5	B-15	2.8	4 A	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 7.
6	B-11	2.8	7 B	Qal'eh Esmail Aga	U/U	Kroll 1976: Abb. 42: 1.
7	B-11	2.8	6 A			
8	A-19	2.8	1 A	Pulur/Danışment	500-300	Sagona and Sagona 2004: Fig. 116: 4.
				Kale İsmail Ağa	800-600	Belgiorno et al. 1984: Fig. 54: 168.
9	B-13	2.9	-			
10	B-18	2.9	3 A	Uzub Tepe	U/U	Kroll 1976: Abb. 16: 11.
11	B-10	2.9	6 B	Güngörmez Tepe	500-300	Sagona and Sagona 2004: Fig. 118: 16.
12	B-10	2.9	6 B	Malatya/ Değirmentepe	OD/MI	Ökse 1988: Abb. 39.
13	B-3	2.9	7 B	Verahram	U/U	Kroll 1976: Abb. 5: 1.
14	A-12	2.9	7 E			
15	B-12	2.9	5 A			
16	A-12	2.10	7 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 188: 14.
17	B-19	2.10	7 A			
18	B-12	2.10	8 A			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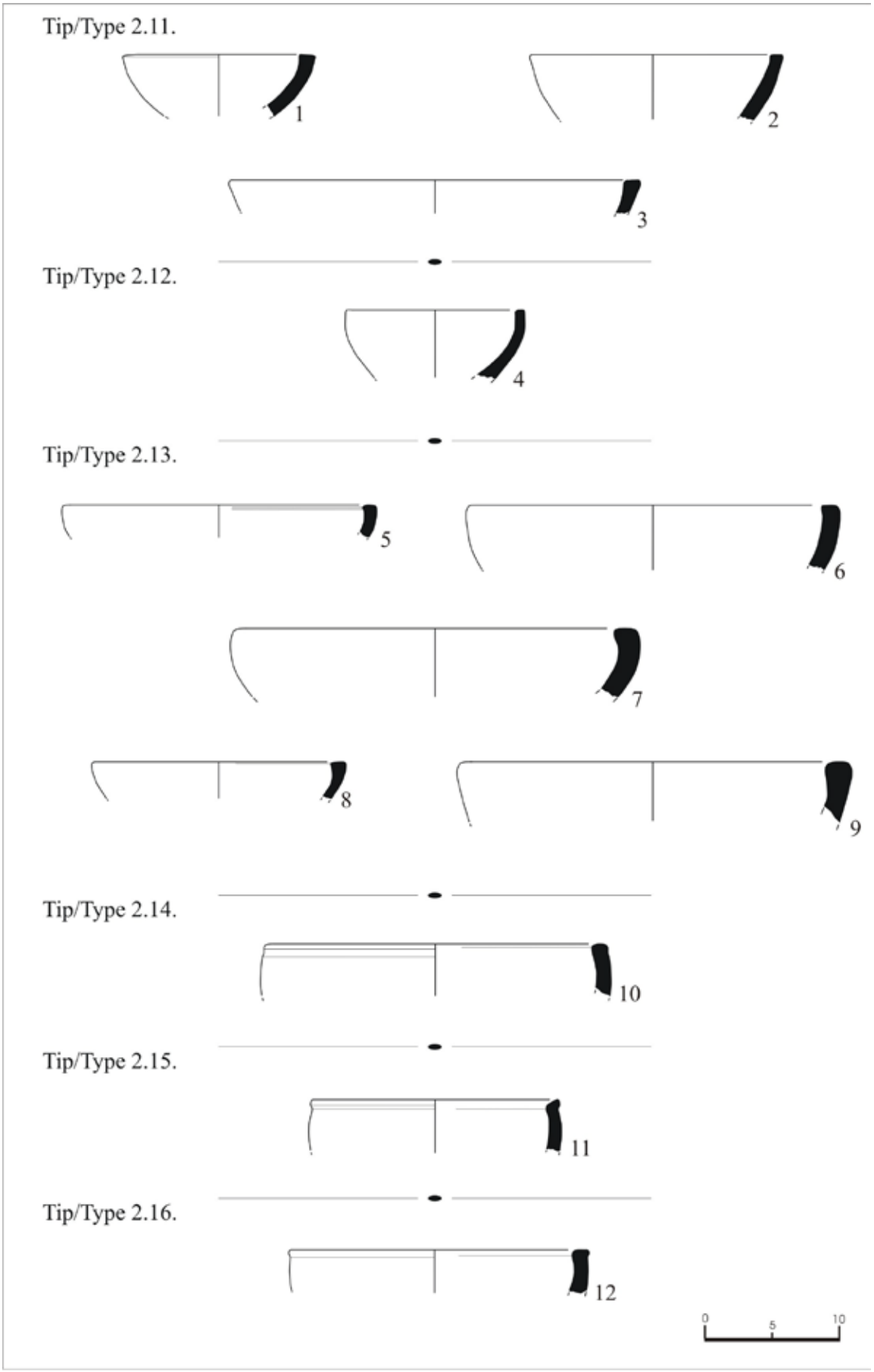
Res./Fig. 67

Res./Fig. 68

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-18	2.11	4 A	Çayıryolu Tepe 4	800-300	Sagona and Sagona 2004: Fig. 141: 7.
				Čeraqah-e Amir	U/U	Kroll 1976: Abb. 26: 4.
				Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 34: 2.
2	A-19	2.11	6 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 35: 1.
3	B-21	2.11	9 E	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 33: 1.
				Qiz Qal'eh	U/U-Ak./Ak.	Kroll 1976: Abb.18: 37.
				Kaleköy	OD/MI	Ökse 1988: Abb. 58.
4	A-19	2.12	9 A			
5	B-7	2.13	4 B			
6	A-16	2.13	6 A	Balta Kaya Tepe1.	800-300	Sagona and Sagona 2004: Fig. 142: 11.
				Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 35: 2.
7	B-15	2.13	4 A	Kaleköy	OD/MI	Ökse 1988: Abb. 56.
8	B-10	2.13	7 E	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 22: 3, 4.
				Qal'eh Siah	U/U	Kroll 1976: Abb. 10: 4.
				Sos Höyük	GD/LI	Sagona et al. 1996: Fig. 6: 2.
9	A-19	2.13	5 A	Çimentepe	800-300	Sagona and Sagona 2004: Fig. 159: 11.
				Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 27: 6.
10	A-18	2.14	6 A			
11	B-3	2.15	6 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 30: 1.
				Sangar	U/U	Kroll 1976: Abb.3: 17.
12	A-18	2.16	6 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 30: 5.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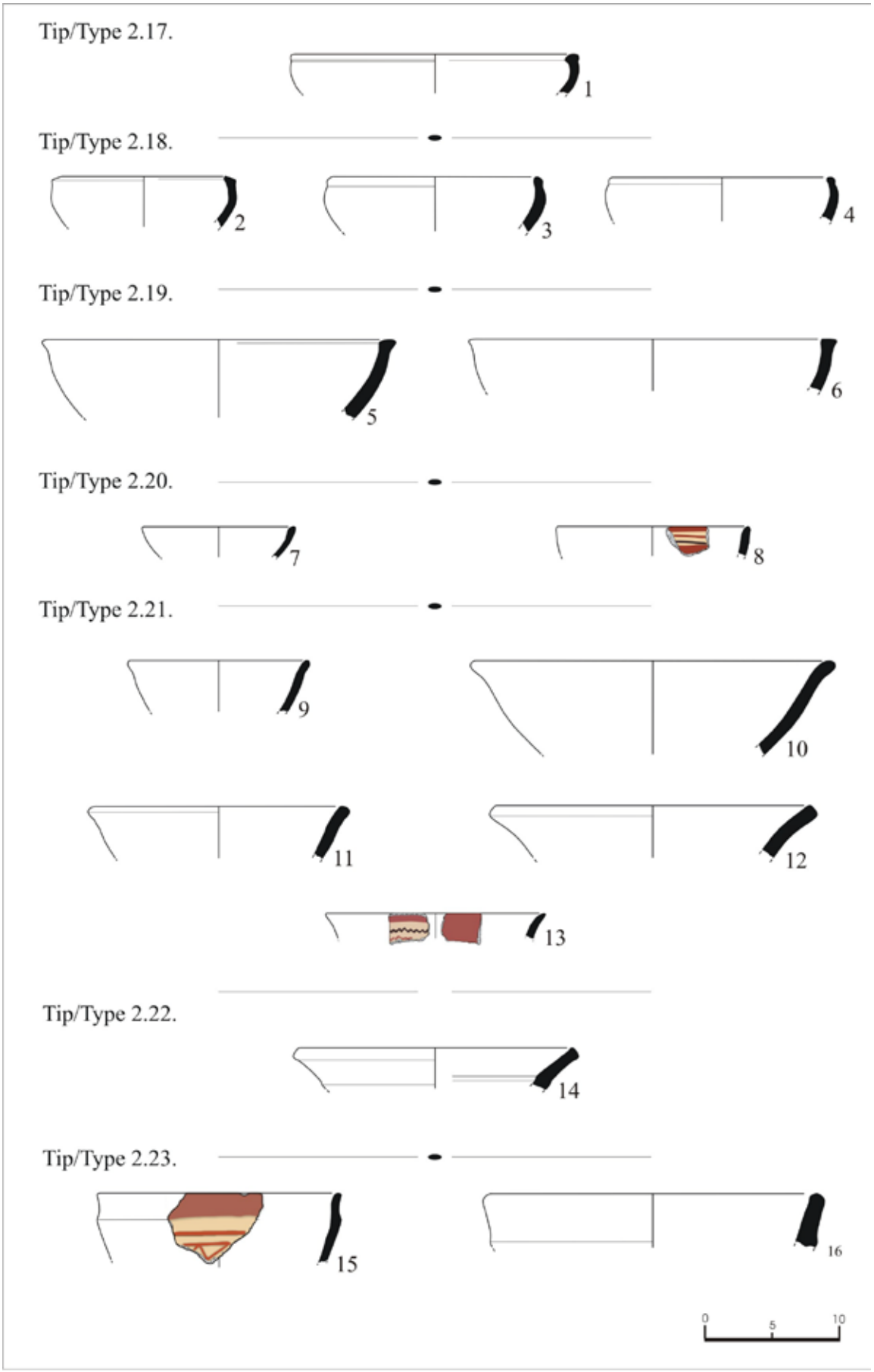
Res./Fig. 68

Res./Fig. 69

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-10	2.17	7 A	Livar	U/U	Kroll 1976: Abb. 21: 15.
2	A-11	2.18	6 A			
3	A-11	2.18	6 A			
4	A-11	2.18	6 A	Qiz Qal'eh	U-Ak./ -Ak.	Kroll 1976: Abb. 18: 23.
5	B-3	2.19	6 B	Qal'eh Siah	U/U	Kroll 1976: Abb. 10: 15.
6	B-18	2.19	3 A			
7	A-11	2.20	9 E			
8	B-18	2.20	11B	Karataş Mevkii	800-300	Sagona and Sagona 2004: Fig. 146: 11.
9	B-11	2.21	6 A	Dučgagi	U/U	Kroll 1976: Abb. 15: 3.
10	A-11	2.21	6 A	Şemsiyetepe	OD/MI	Ökse 1988: Abb. 326.
				Verahram	U/U	Kroll 1976: Abb. 5: 4.
				Qalatgah	U/U	Kroll 1976: Abb. 41: 10.
11	A-19	2.21	1 A	Örenşar (6:1.2)	600-200	Sagona and Sagona 2004: Fig. 178: 5.
12	B-11	2.21	9 A			
13	B-12	2.21	11B	Van-Karagündüz	GD/LI	Sevin et al. 2000: Çiz. 3: 7
14	B-18	2.22	6 A			
15	B-11	2.23	11B	Karlarboğazı Tepe	600-300	Sagona and Sagona 2004: Fig. 183: 8.
16	B-4	2.23	5 A	Maltaya/ Değirmentepe	OD/MI	Ökse 1988: Abb. 802.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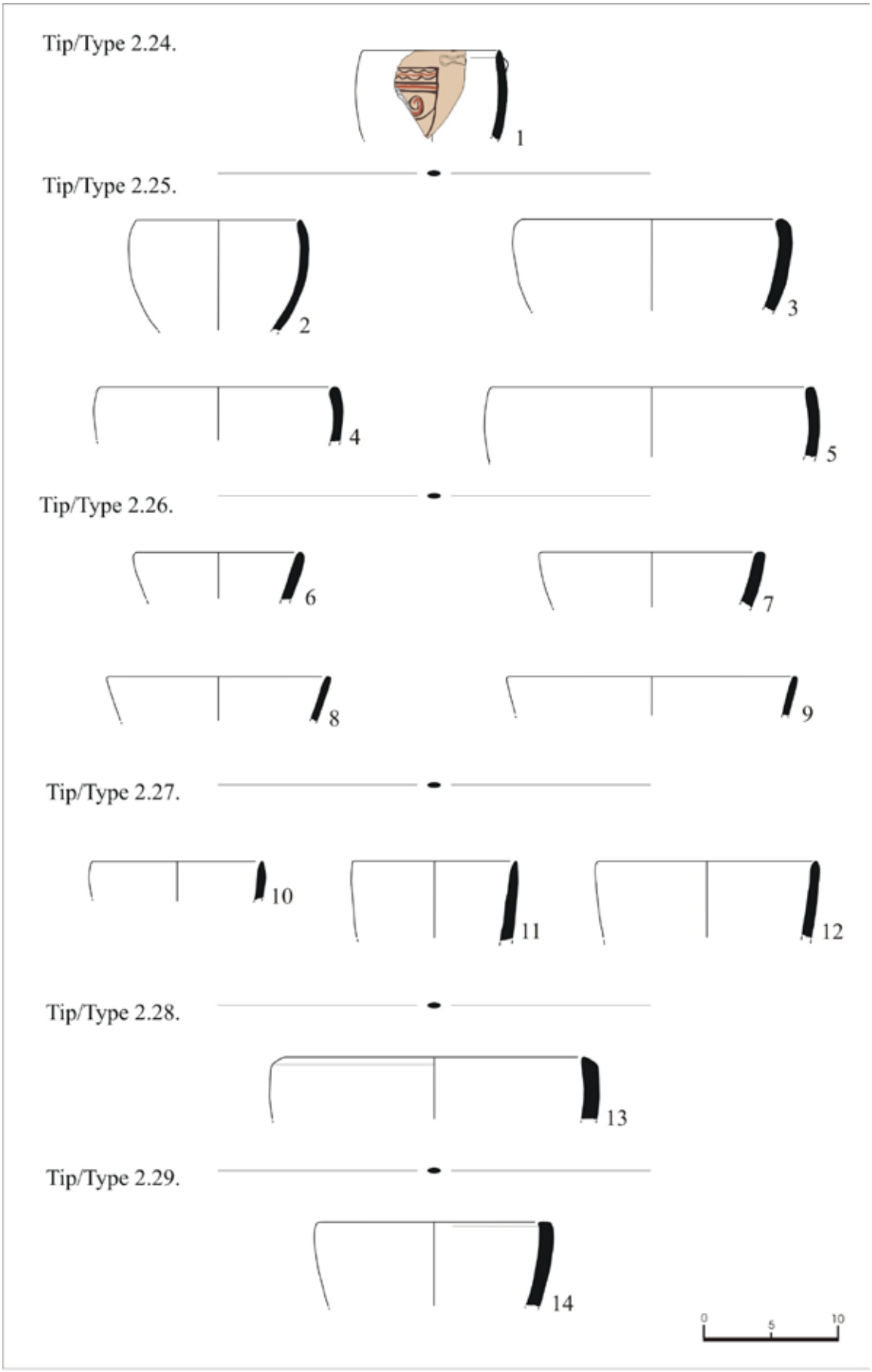
Res./Fig. 69

Res./Fig. 70

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-12	2.24	11B			
2	A-11	2.25	7 E			
3	A-12	2.25	4 A	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 12: 7.
4	A-12	2.25	7 E			
5	B-3	2.25	4 B			
6	A-11	2.26	4 A	İvikler Tepe	900-300	Sagona and Sagona 2004: Fig. 182: 1.
				Kaleköy	OD/MI	Ökse 1988: Abb. 5.
7	A-11	2.26	7 D			
8	B-3	2.26	1 A	Kilise Tepe 2	500-300	Sagona and Sagona 2004: Fig. 175: 4.
9	B-3	2.26	1 A	Kilise Tepe 2	500-300	Sagona and Sagona 2004: Fig. 175: 4.
10	B-3	2.27	7 B			
11	A-11	2.27	3 A			
12	A-11	2.27	4 A	Kaleköy	OD/MI	Ökse 1988: Abb. 4.
13	B-18	2.28	4 A	Uğrak Taşlık Höyük	600-200	Sagona and Sagona 2004: Fig. 112: 7.
14	B-18	2.29	6 E	Qal'eh Sangar	U/U	Kroll 1976: Abb. 27: 1.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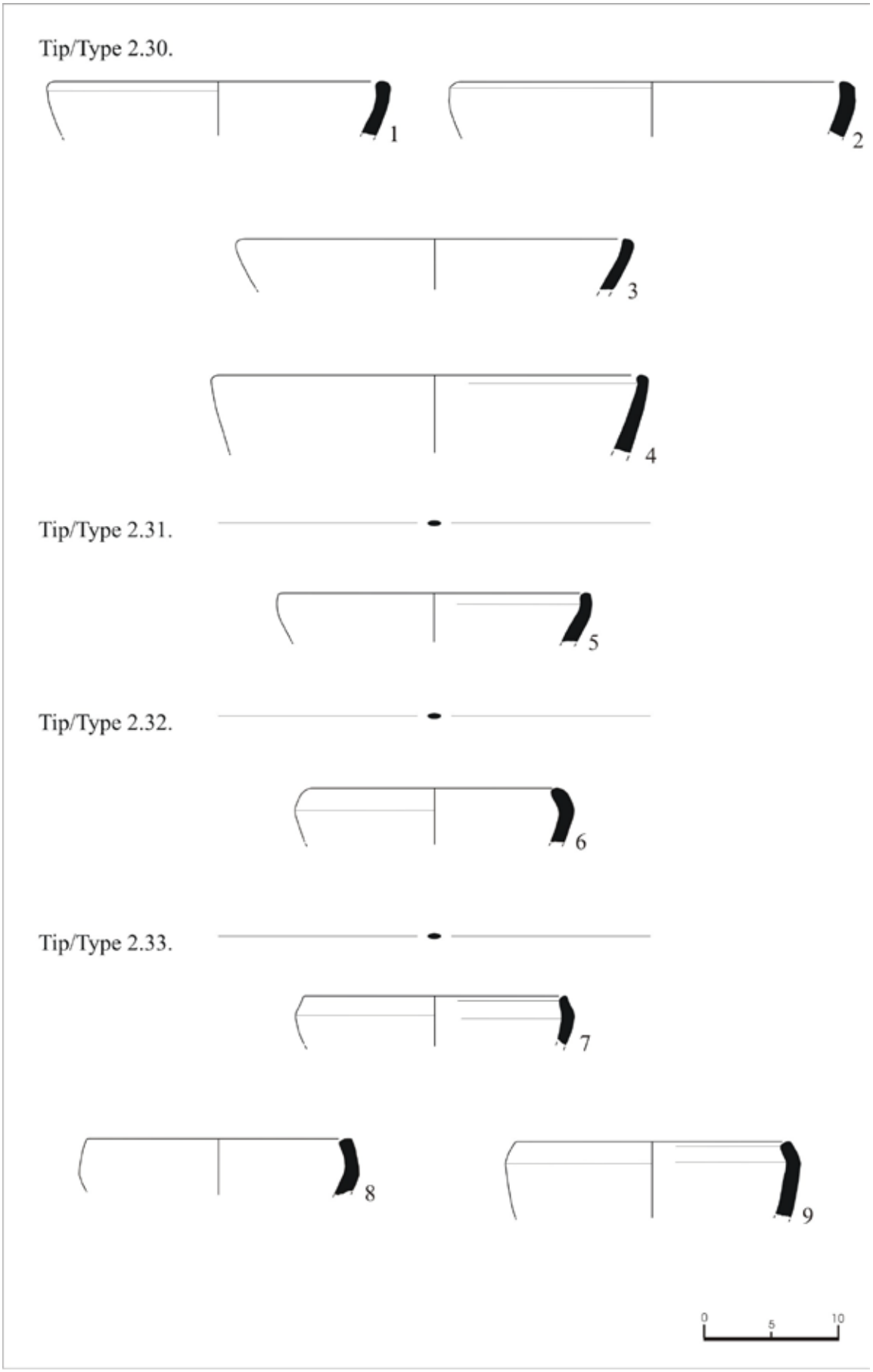
Res./Fig. 70

Res./Fig. 71

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-18	2.30	3 A	Kaleköy	OD/MI	Ökse 1988: Abb. 55.
				Zingir Qal'eh	U/U	Kroll 1976: Abb. 35: 6.
2	A-19	2.30	7 B	Kaleköy	OD/MI	Ökse 1988: Abb. 783.
				Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 10.
				Maledjin	U/U	Kroll 1976: Abb. 28: 5.
3	B-19	2.30	4 A	Köşkerbaba	OD/MI	Ökse 1988: Abb. 781.
				Sangar	U/U	Kroll 1976: Abb. 3: 13.
4	B-19	2.30	6 A			
5	B-19	2.31	6 A			
6	B-11	2.32	6 B			
7	B-19	2.33	6 A	Cimintepe II	Ak./Ak.	Summers 1993: Fig. 8: 9.
				Şemsiye Tepe	DÇ/I	Ökse 1988: Abb. 807.
				Erciş/Diov	OD/MI	Marro and Özfırat 2004: Pl. 14: 6.
8	A-12	2.33	6 A			
9	B-19	2.33	7 A			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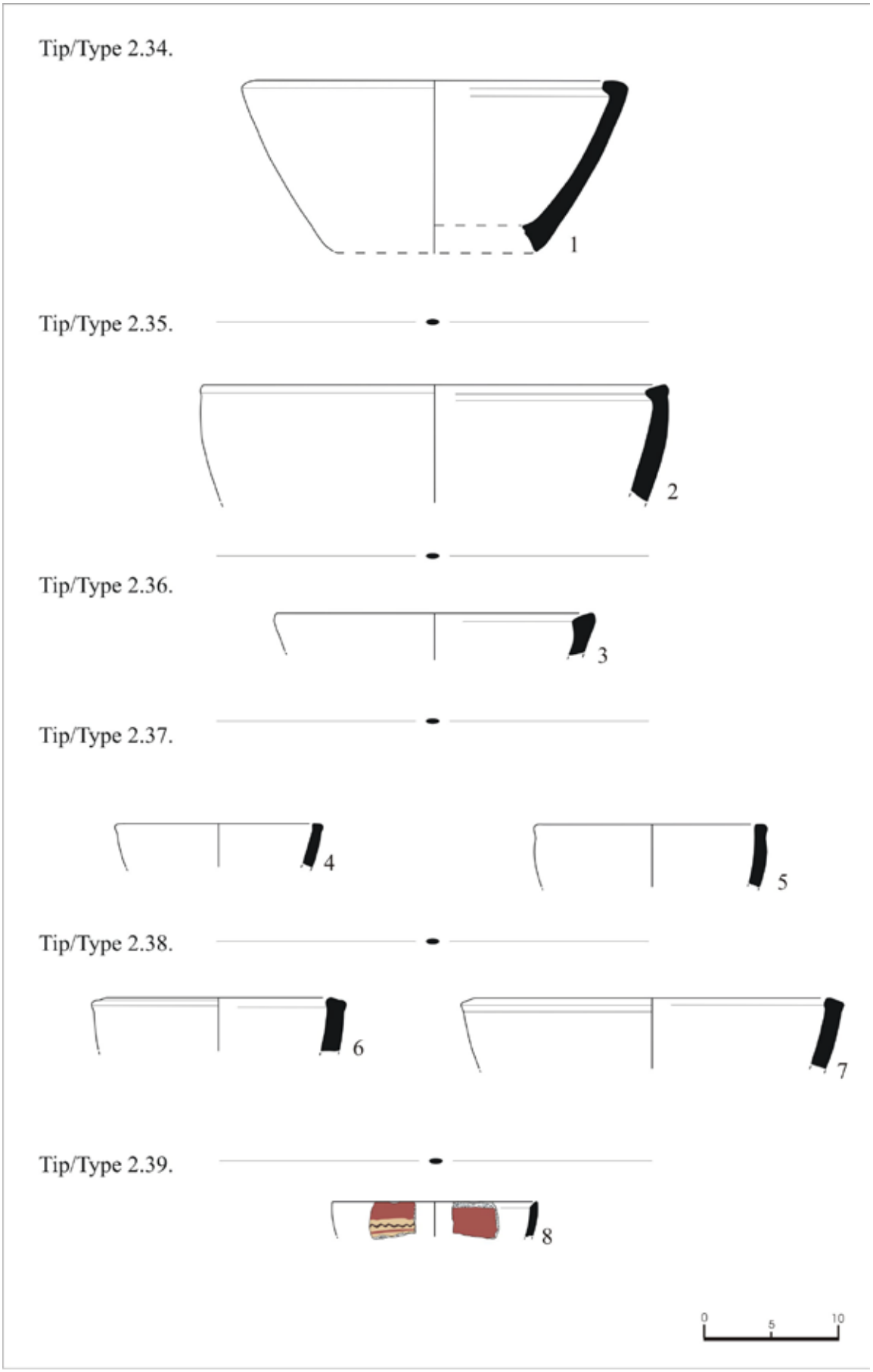
Res./Fig. 71

Res./Fig. 72

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-20	2.34	9 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 33: 9.
2	B-11	2.35	6 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 31: 4.
				Qız Qal'eh	U-Ak./ U-Ak.	Kroll 1976: Abb. 18: 31.
3	A-11	2.36	6 B	Çengiler Tepe	500-300	Sagona and Sagona 2004: Fig. 188: 10.
				Cimin Tepe	Ak./Ak.	Summers 1993: Fig. 9: 3.
4	B-18	2.37	7 B			
5	B-9	2.37	4 A			
6	B-14	2.38	6 A			
7	A-11	2.38	1 A			
8	B-17	2.39	11B	Büyüktepe Höyük	400-275	Sagona and Sagona 2004: Fig. 144: 11.
				Çengiler Tepe	400-275	Sagona and Sagona 2004: Fig. 192: 4.
				Van/Karagündüz	GÇD	Sevin at al. 2000: Çiz. 3: 6, 7.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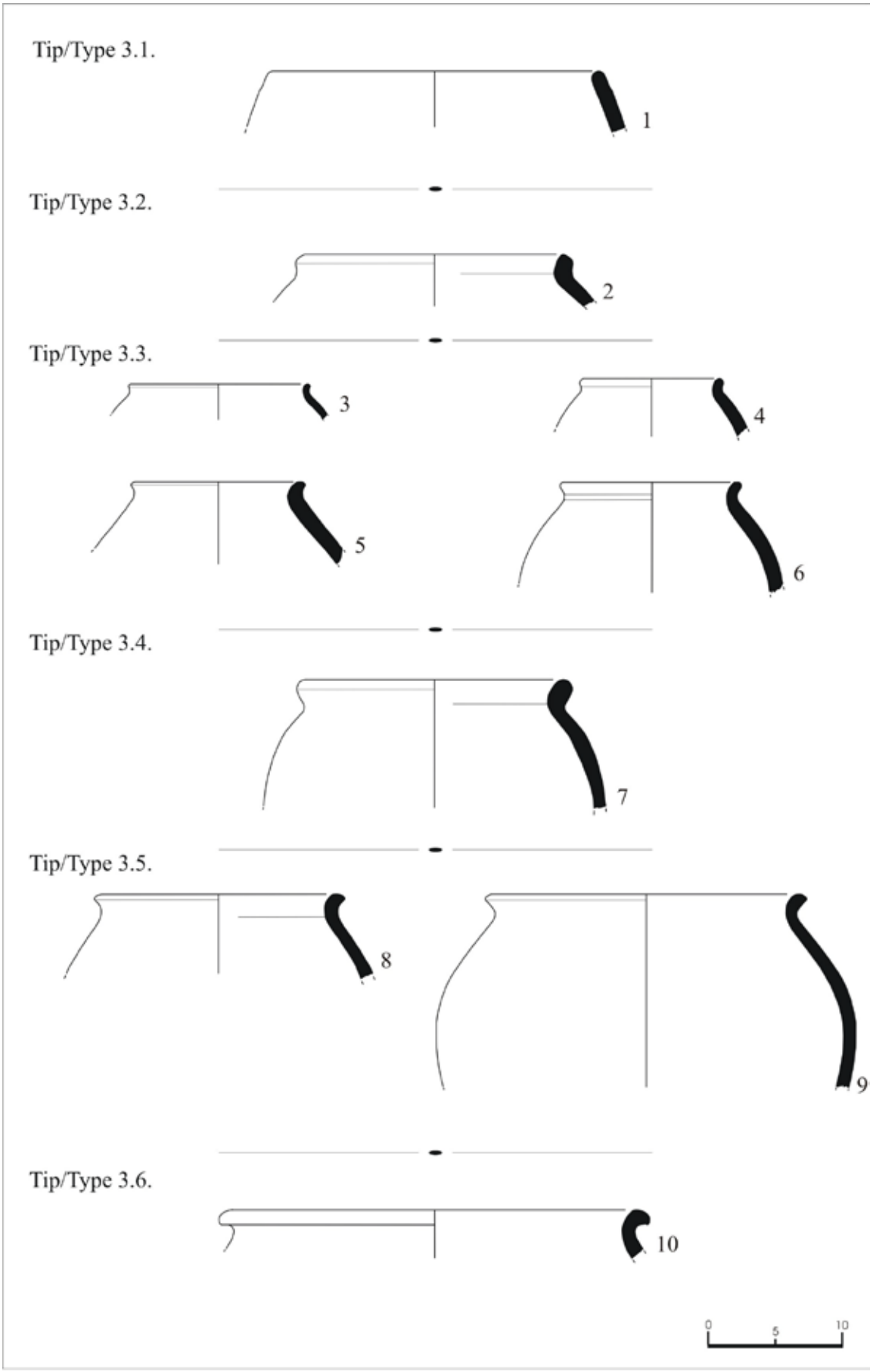
Res./Fig. 72

Res./Fig. 73

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-19	3.1	7 A	Cimin Tepe II	Ak./Ak.	Summers 1993: Fig. 8: 10.
2	A-18	3.2	7 A			
3	A-11	3.3	4 E			
4	B-7	3.3	4 B			
5	B-11	3.3	6 A			
6	A-11	3.3	5 A			
7	A-11	3.4	4 E			
8	A-11	3.5	4 A			
9	A-12	3.5	7 A	Karaçayır Mevkii 2.	800-300	Sagona and Sagona 2004: Fig. 151: 2.
				Kuh-e Zambil	U/U	Kroll 1976: Abb. 36: 16.
10	A-12	3.6	9 A	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 29.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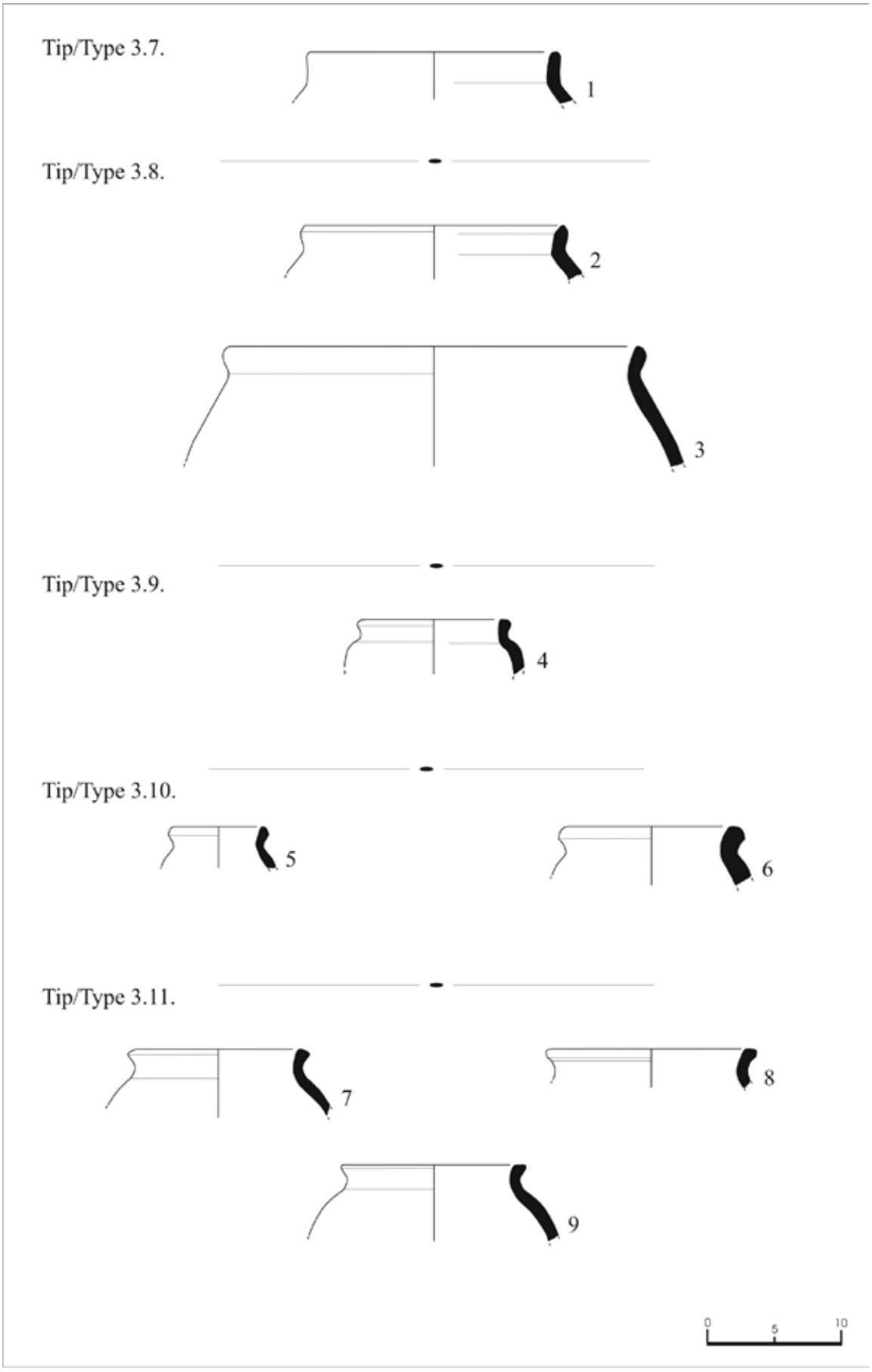
Res./Fig. 74

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	A-11	3.7	4 B	Cimin Tepe II	Ak./Ak.	Summers 1993: Fig. 8: 6.
2	B-3	3.8	4 B			
3	B-18	3.8	6 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 39: 3.
				Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 28.
4	B-14	3.9	7 E			
5	A-18	3.10	6 A			
6	A-11	3.10	7 E			
7	B-10	3.11	6 A	Çengiler Tepe	600-300	Sagona and Sagona 2004: Fig. 191: 11.
				Pir Çavuş	U/U	Kroll 1976: Abb. 33: 6.
8	A-19	3.11	6 B			
9	B-10	3.11	7 E			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Res./Fig. 74

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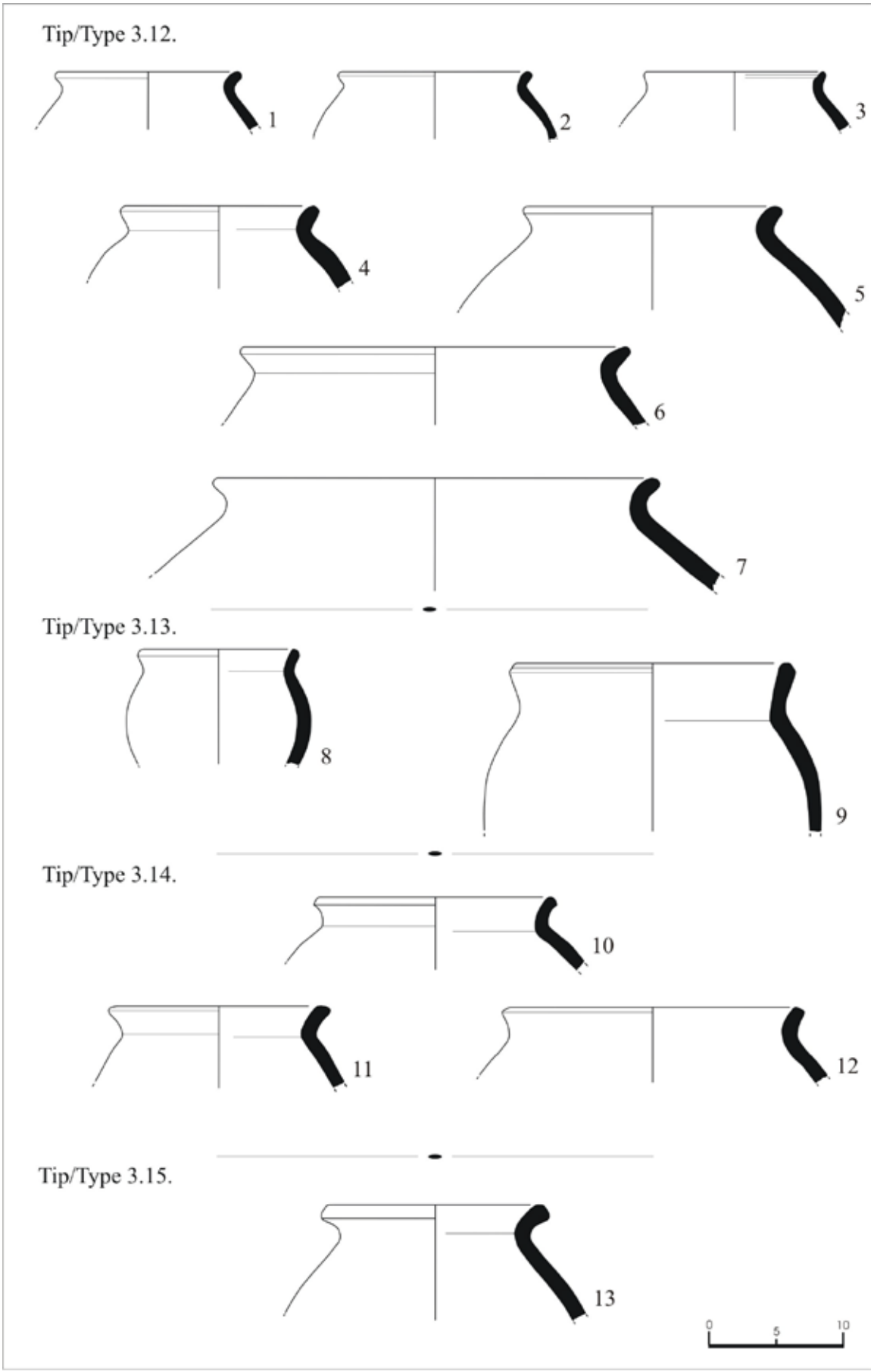
No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	A-11	3.12	6 A	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 25.
2	A-11	3.12	4 A			
3	B-14	3.12	4 B			
4	B-3	3.12	4 B	Danalu	U/U	Kroll 1976: Abb. 9: 12.
5	A-11	3.12	7 E	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 38: 7.
				Qal'eh Vaziri	U/U	Kroll 1976: Abb. 34: 10.
6	B-11	3.12	7 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 40: 3.
				Qiz Qal'eh	U/Ak./U-Ak.	Kroll 1976: Abb. 19: 12.
7	A-11	3.12	7 E	Dedecik	800-600	Sagona and Sagona 2004: Fig. 155: 7.
				Qal'eh Khezarlu	U/U	Kroll 1976: Abb. 1: 20.
				Qal'eh Vaziri	U/U	Kroll 1976: Abb. 35: 7.
				Kuh-e Zambil	U/U	Kroll 1976: Abb. 36: 18.
8	B-11	3.13	4 A			
9	B-12	3.13	4 E	Karaçayır Mevkii 1.	1000-300	Sagona and Sagona 2004: Fig. 148: 9.
				Livar	U/U	Kroll 1976: Abb. 23: 8.
10	A-11	3.14	1 E			
11	A-11	3.14	7 A	Malatya-Değirmentepe	OD/MI	Ökse 1988: Abb. 362.
12	B-11	3.14	4 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 40: 4.
				Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 27.
13	A-11	3.15	7 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 37: 2.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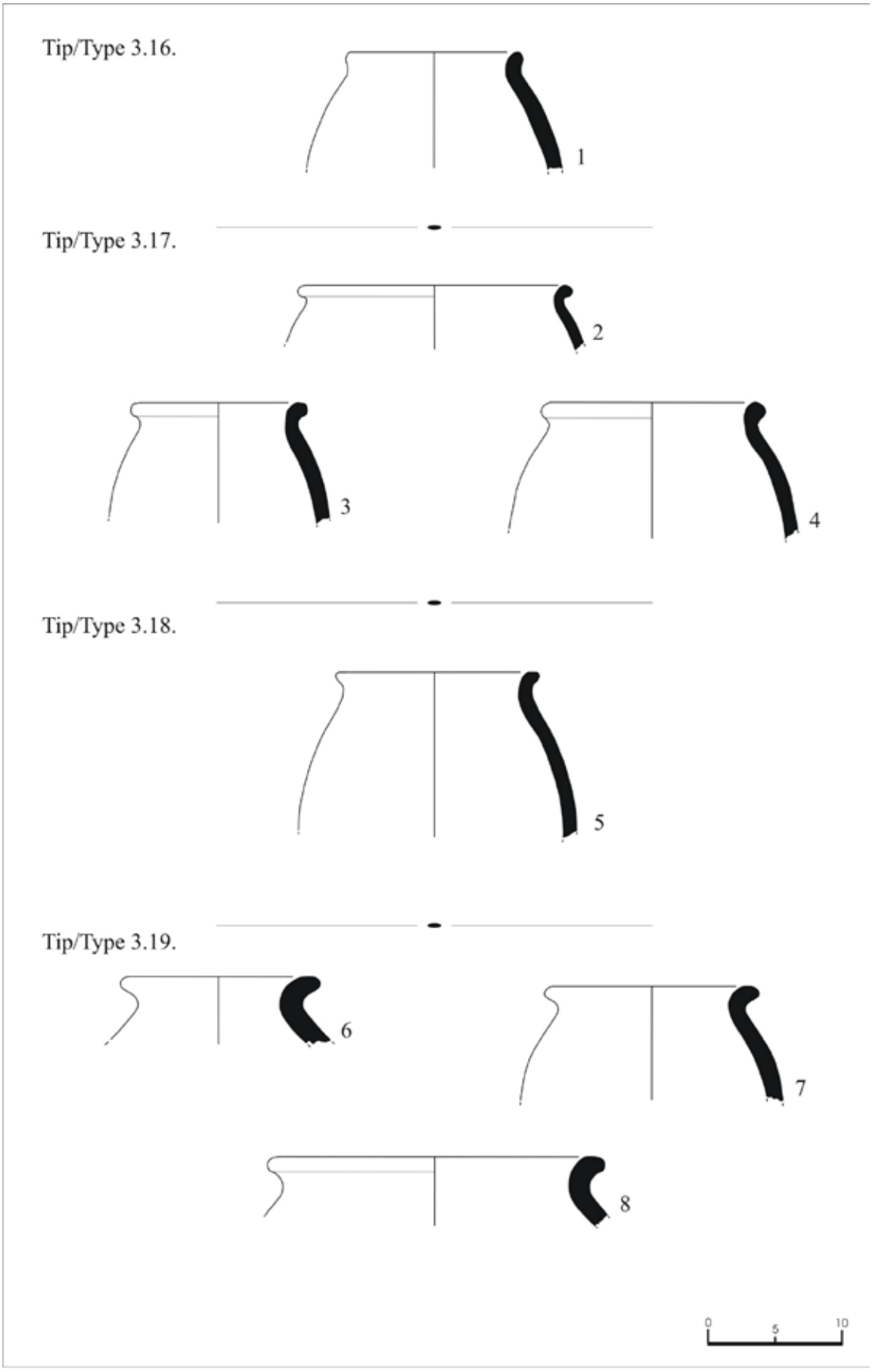
Res./Fig. 75

Res./Fig. 76

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	A-19	3.16	6 D			
2	B-4	3.17	7 B	Söğütlü	900-300	Sagona and Sagona 2004: Fig. 120: 3.
3	B-3	3.17	6 B			
4	B-3	3.17	1 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 191: 7.
				Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 39: 4.
5	A-17	3.18	7 A			
6	B-7	3.19	7 B			
7	A-19	3.19	6 B			
8	A-19	3.19	6 A			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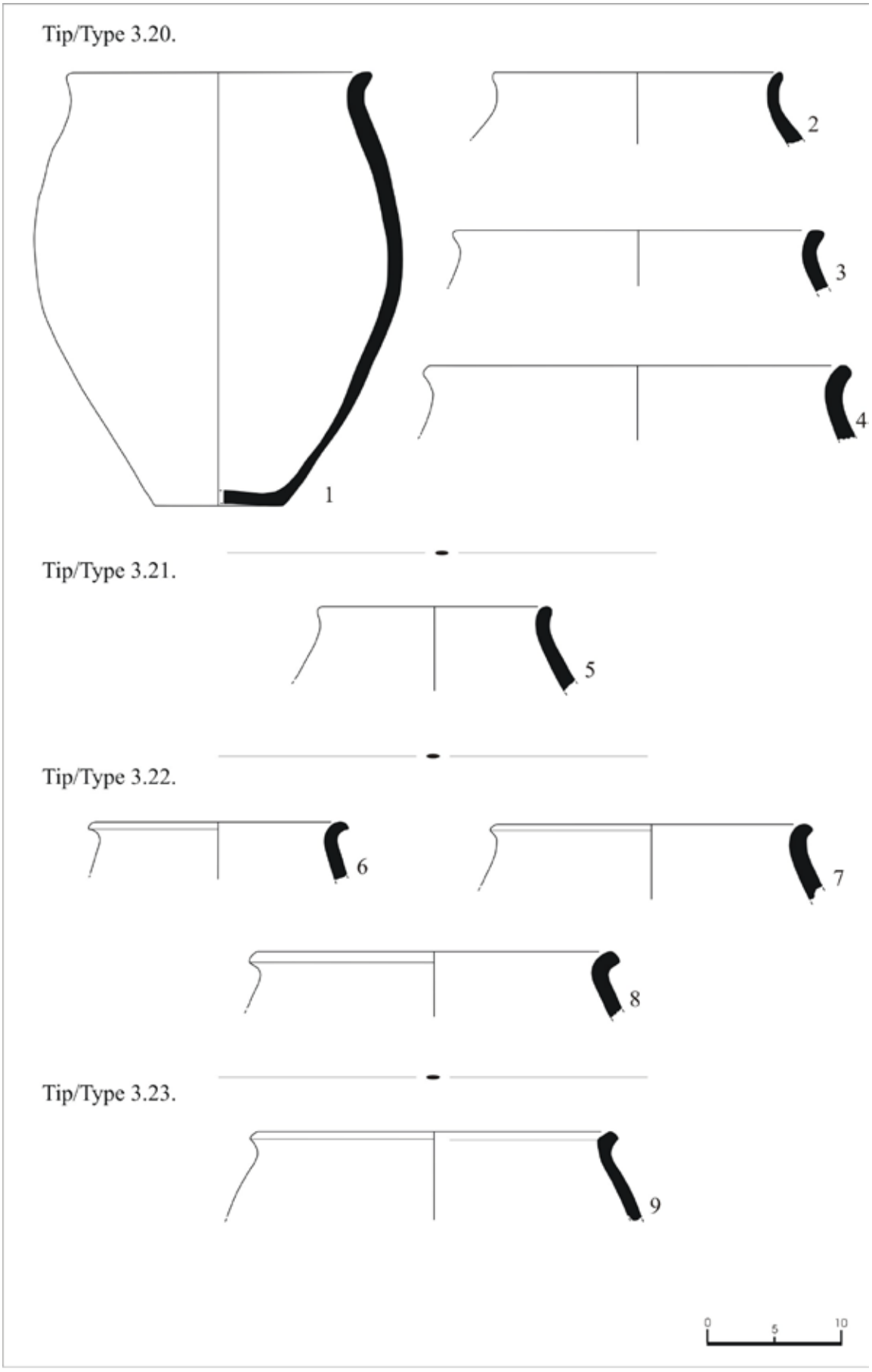
Res./Fig. 76

Res./Fig. 77

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-20	3.20	4 A	Sangar	U/U	Kroll 1976: Abb 4: 1.
				Qal'eh Vaziri	U/U	Kroll 1976: Abb. 34: 9.
2	A-19	3.20	4 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 191: 5.
3	A-11	3.20	6 A			
4	A-19	3.20	5 A	Örenşar 3.	600-200	Sagona and Sagona 2004: Fig. 179: 4.
				Qiz Qal'eh	U-Ak./ U-Ak.	Kroll 1976: Abb. 20: 26.
5	B-11	3.21	7 B	Qal'eh Oghlu	U/U	Kroll 1976: Abb. 14: 26.
6	A-19	3.22	7 B	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 191:13.
7	B-11	3.22	4 B			
8	A-11	3.22	5 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 39: 2.
9	B-15	3.23	1 A			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Res./Fig. 77

Res./Fig. 78

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	A-19	3.24	7 B			
2	A-18	3.24	4 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 38: 2.
3	A-11	3.24	4 E	Cimin Tepe II	Ak./Ak.	Summers 1993: Fig.8: 7.
4	B-13	3.24	4 A	Çayıryolu Tepe	500-300	Sagona and Sagona 2004: Fig. 140: 4.
				Altıntepe	Ak./Ak.	Summers 1993: Fig. 5: 13.
				Kilise Tepe 2.	900-300	Sagona and Sagona 2004: Fig. 140: 4.
5	B-13	3.24	5 A			
6	B-18	3.24	7 E	Uzup Tepe	U/U	Kroll 1976: Abb. 16: 12.
7	B-12	3.24	7 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 38: 9
				Livar	U/U	Kroll 1976: Abb. 23: 7.
				Qal'eh Siah	U/U	Kroll 1976: Abb. 11: 3.
8	B-3	3.25	7 B			
9	B-3	3.25	6 B			
10	A-17	3.25	6 E			
11	B-11	3.25	6 E	Qalatgah	U/U	Kroll 1976: Abb. 41: 21.

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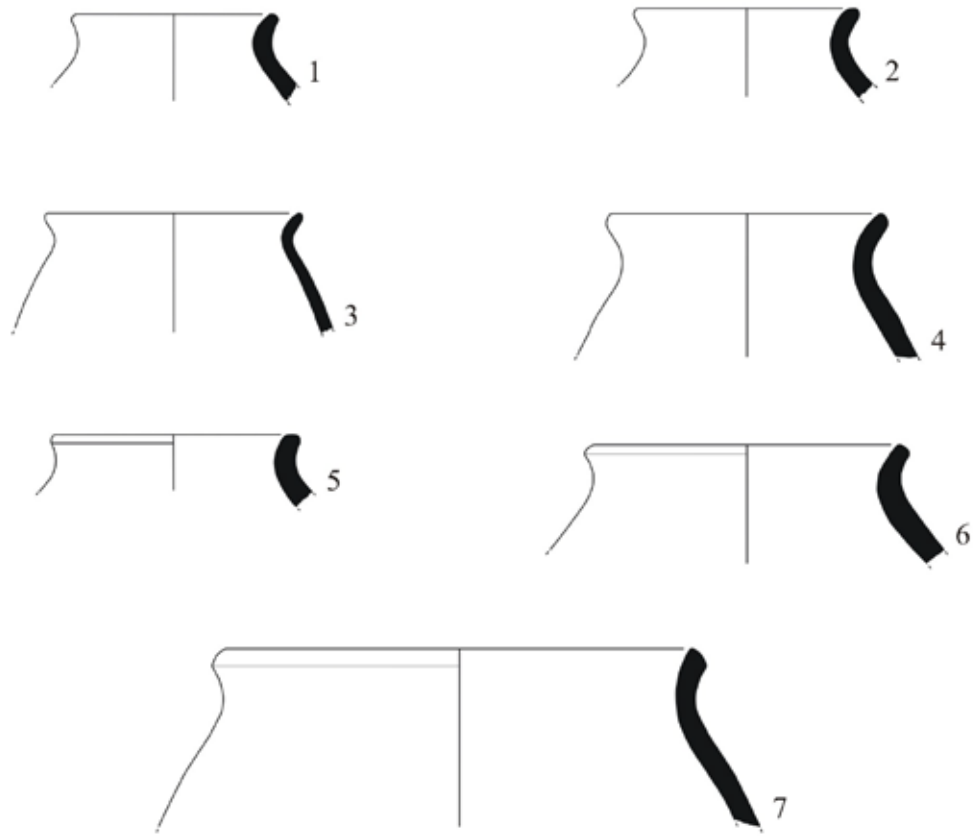

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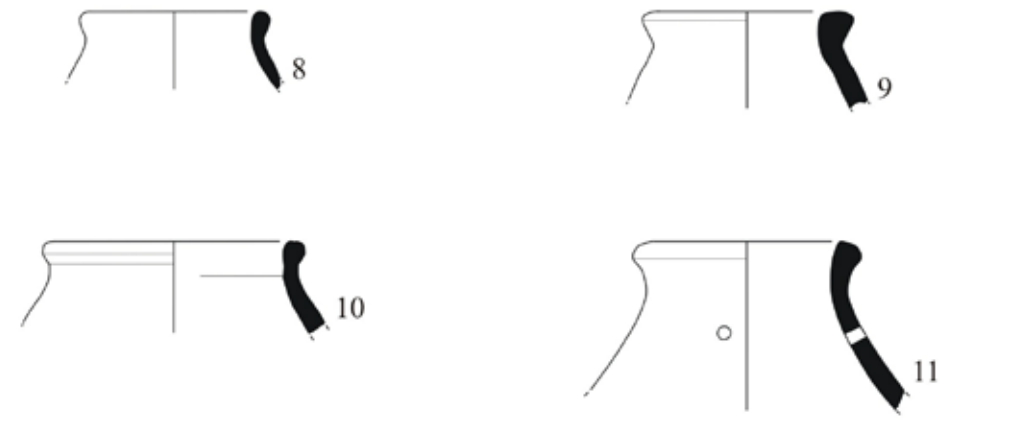
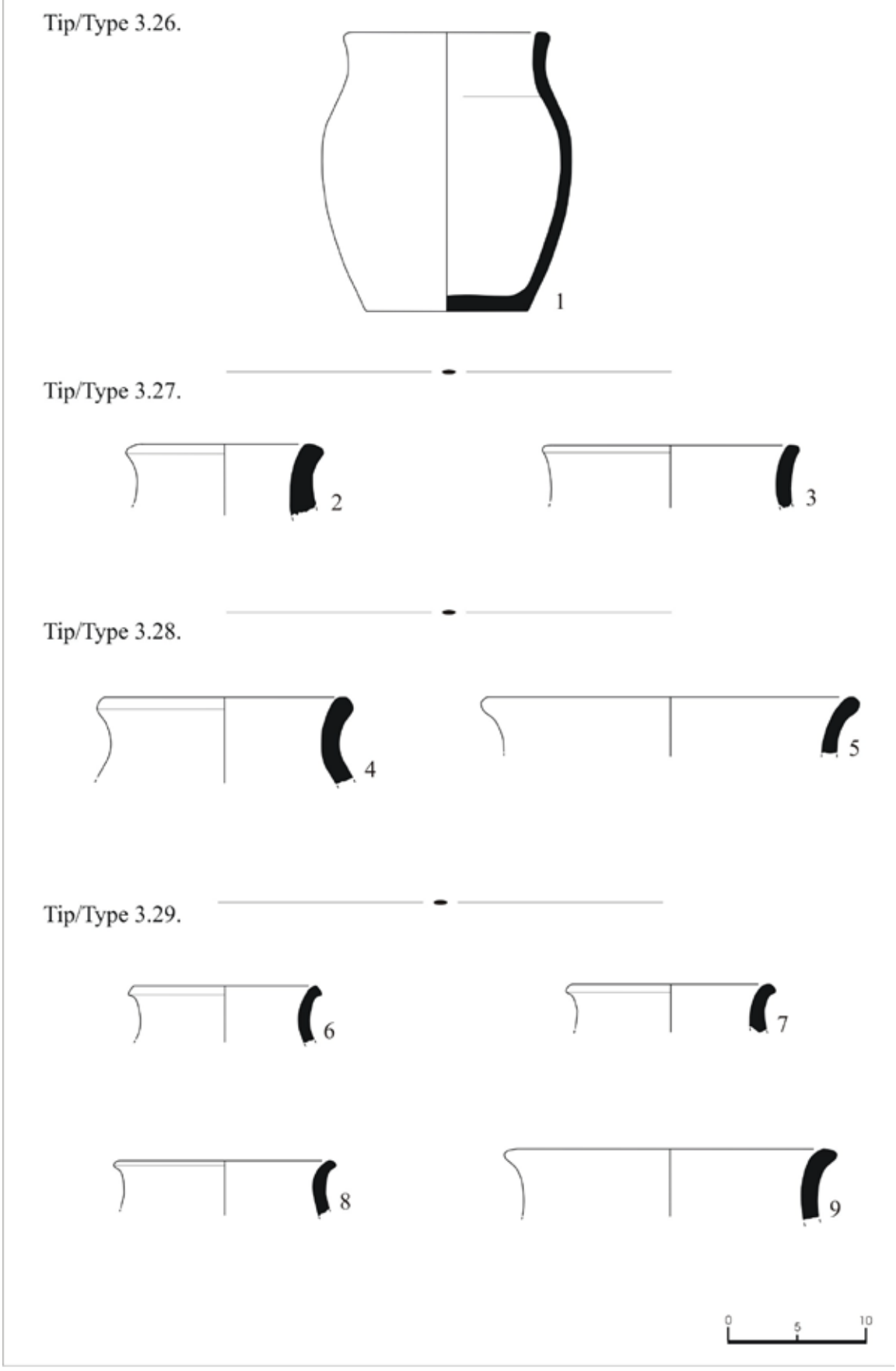


Res./Fig. 78

Res./Fig. 79

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-8	3.26	6 B			
2	A-19	3.27	6 A			
3	B-10	3.27	4 A			
4	B-18	3.28	7 A	Ašaghy Qurul	U/U	Kroll 1976: Abb. 17: 12.
				Ušnaviyeh	U/U	Kroll 1976: Abb. 38: 8.
5	A-18	3.28	6 A	Aksaçlı (6:11.2)	1000-300	Sagona and Sagona 2004: Fig. 114: 8.
6	B-11	3.29	6 A	Çengiler Tepe	800-300	Sagona and Sagona 2004: Fig. 191: 2.
				Livar	U/U	Kroll 1976: Abb. 23: 6.
				Verahram	U/U	Kroll 1976: Abb 5: 20.
				Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 39: 1.
7	B-12	3.29	-			
8	B-11	3.29	4 A	Van/Karagündüz	GD/LI	Sevin et al. 1999: Res. 12: 13.
9	B-19	3.29	6 A	Eski Koyeri Tepe	500-300	Sagona and Sagona 2004: Fig. 118: 2.
				Karlarboğazı Tepe	500-300	Sagona and Sagona 2004: Fig. 134: 10.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Res./Fig. 79

Res./Fig. 80

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-11	3.30	4 B	Qal'eh Vaziri	U/U	Kroll 1976: Abb. 34: 4.
2	A-11	3.30	7 A	Danalu	U/U	Kroll 1976: Abb. 9: 16.
3	A-18	3.31	6 A	Balta Kaya Tepe 1	900-300	Sagona and Sagona 2004: Fig. 142: 12.
				Van/Karagündüz	GD/LI	Sevin et al. 1999: Res. 12: 12.
				Sangar	U/U	Kroll 1976: Abb. 4: 5.
				Ašaghy Qurul	U/U	Kroll 1976: Abb. 17: 10.
4	B-13	3.32	4 A			
5	B-4	3.32	4 A			
6	A-12	3.33	7 D			

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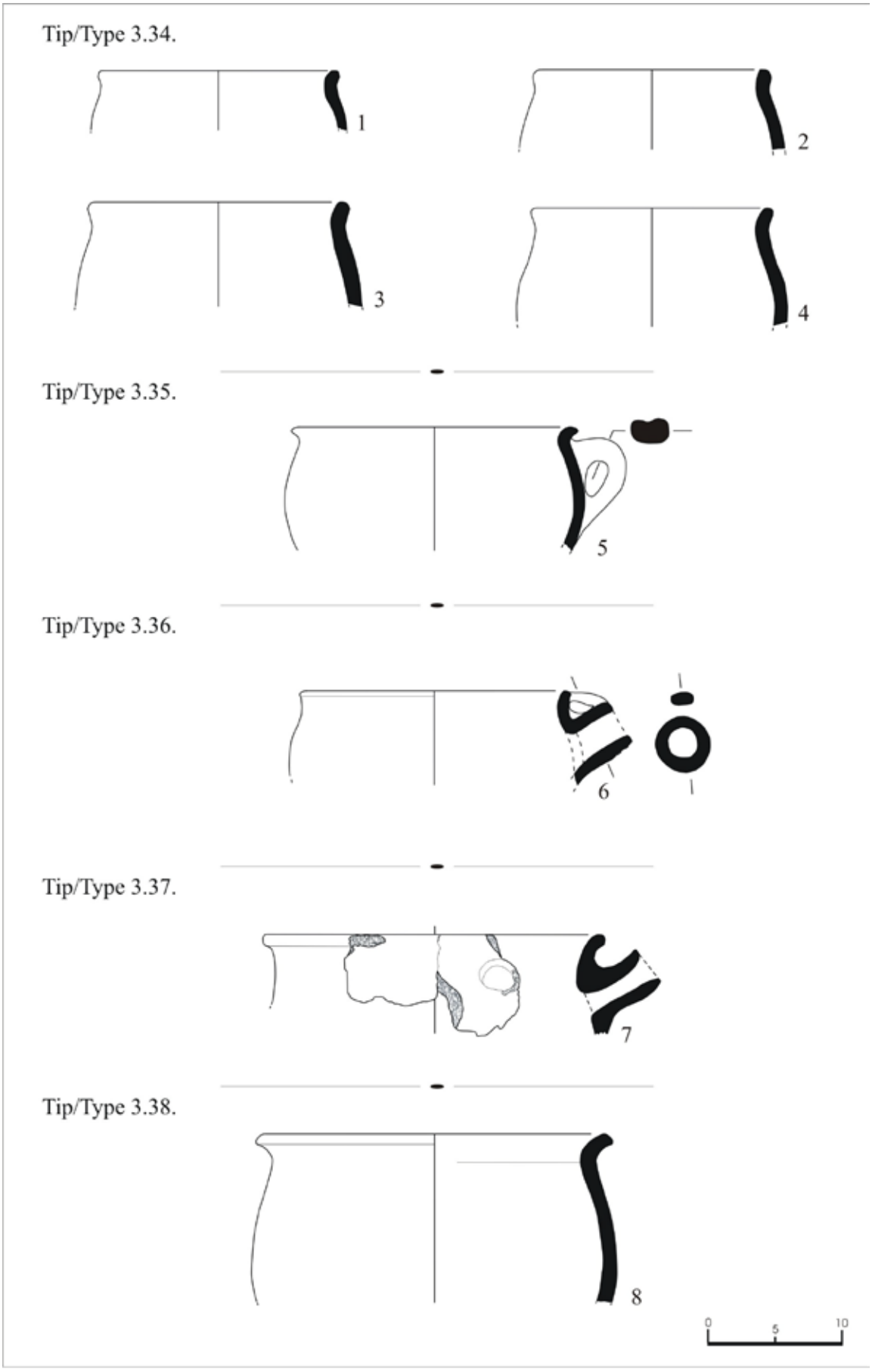
Res./Fig. 80

Res./Fig. 81

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-3	3.34	6 B			
2	A-19	3.34	1 A			
3	B-11	3.34	7 B			
4	B-11	3.34	4 A	Kuh’e Zambil	U/U	Kroll 1976: Abb. 36:14.
5	B-12	3.35	6 A			
6	B-17	3.36	4 E			
7	A-11	3.37	5 A	İmikuşağı	GD/LI	Sevin 1995: Res. 23: 1.
8	B-11	3.38	4 E	Karaçayır Mevkii 2	1000-300	Sagona and Sagona 2004: Fig. 151: 1.
				Qiz Qal’eh	Ak./Ak.	Kroll 1976: Abb. 20: 14.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Res./Fig. 81

Res./Fig. 82

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-11	3.39	4 D			
2	A-11	3.40	6 B			
3	B-10	3.41	7 E			
4	B-6	3.42	7 B			
5	A-12	3.42	9 E			
6	B-3	3.43	6 B			

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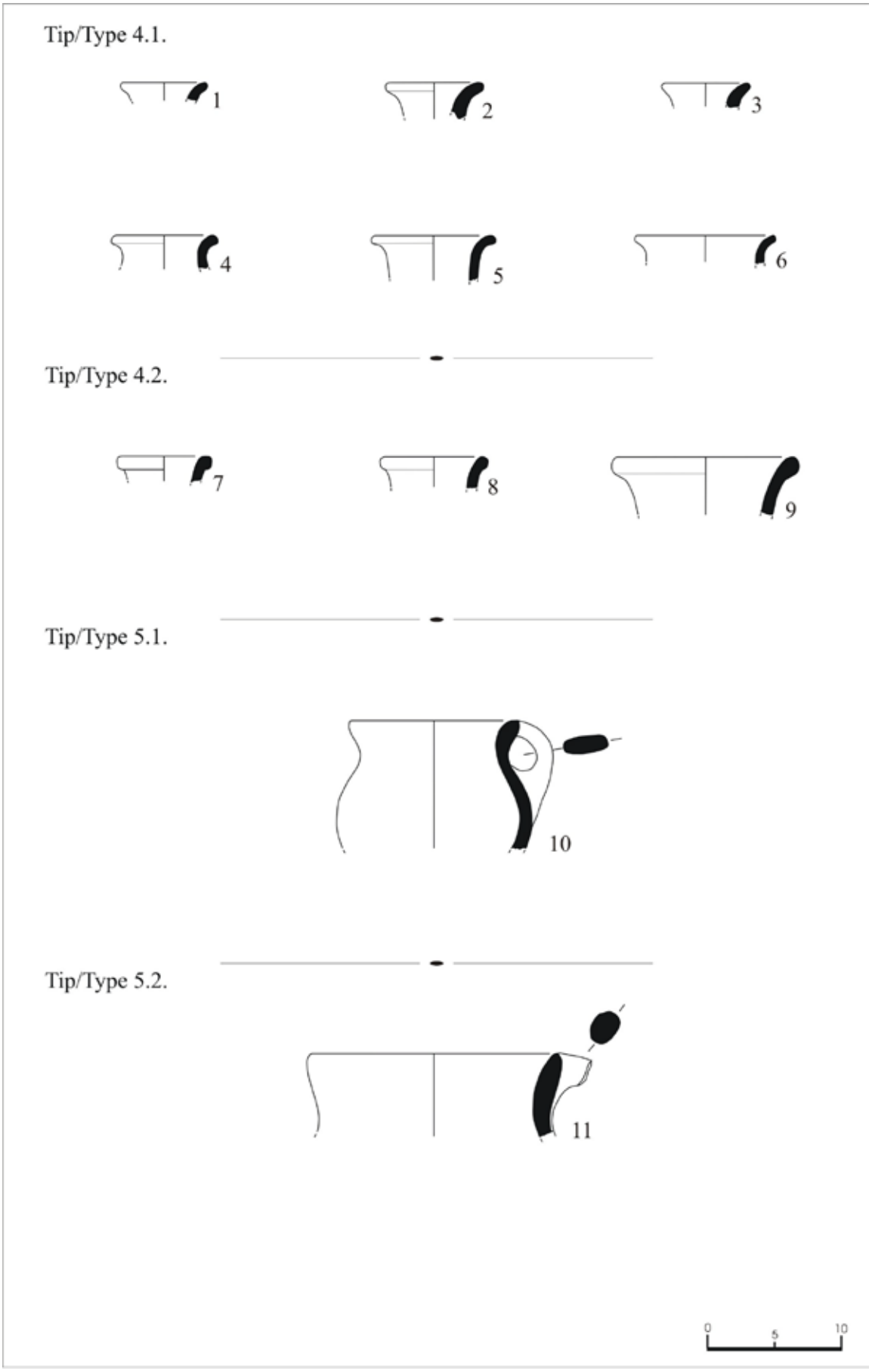
Res./Fig. 82

Res./Fig. 83

No.	K	T.No	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B-10	4.1	7 A			
2	B-3	4.1	7 B			
3	A-11	4.1	7 B			
4	B-7	4.1	7 A	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 40: 2.
				Kaleköy	OD/MI	Ökse 1988: Abb. 708.
5	A-19	4.1	6 A			
6	A-11	4.1	7 A			
7	B-11	4.2	8 B			
8	B-19	4.2	7 E			
9	A-12	4.2	7 A	Malatya/Degirmentepe	OD/MI	Ökse 1988: Abb. 380.
				Danalu	U/U	Kroll 1976: Abb. 9: 17.
				Qiz Qal'eh	U/U	Kroll 1976: Abb. 19: 8.
10	B-12	5.1	4 A			
11	B-18	5.2	7 E			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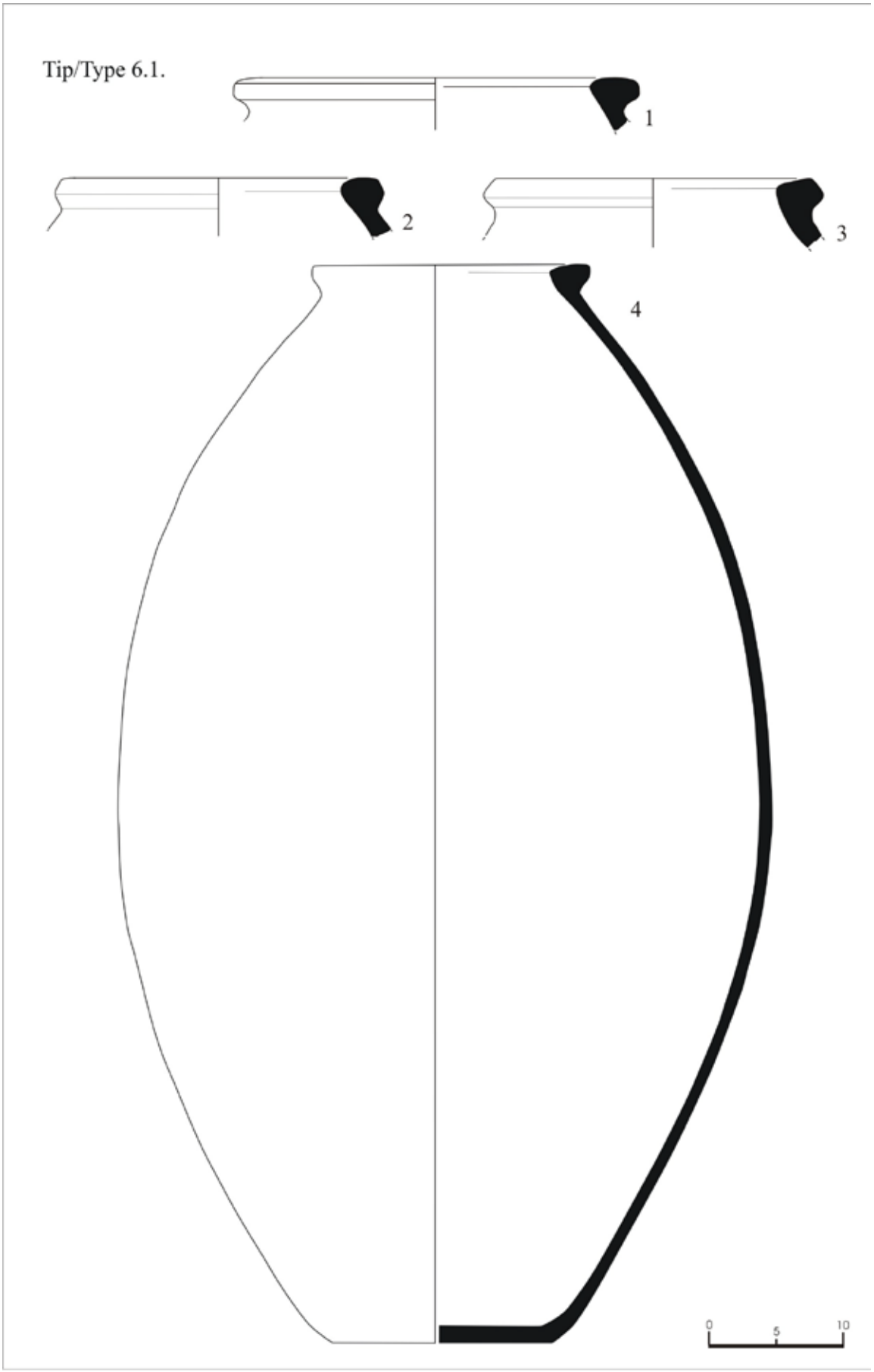
Res./Fig. 83

Res./Fig. 84

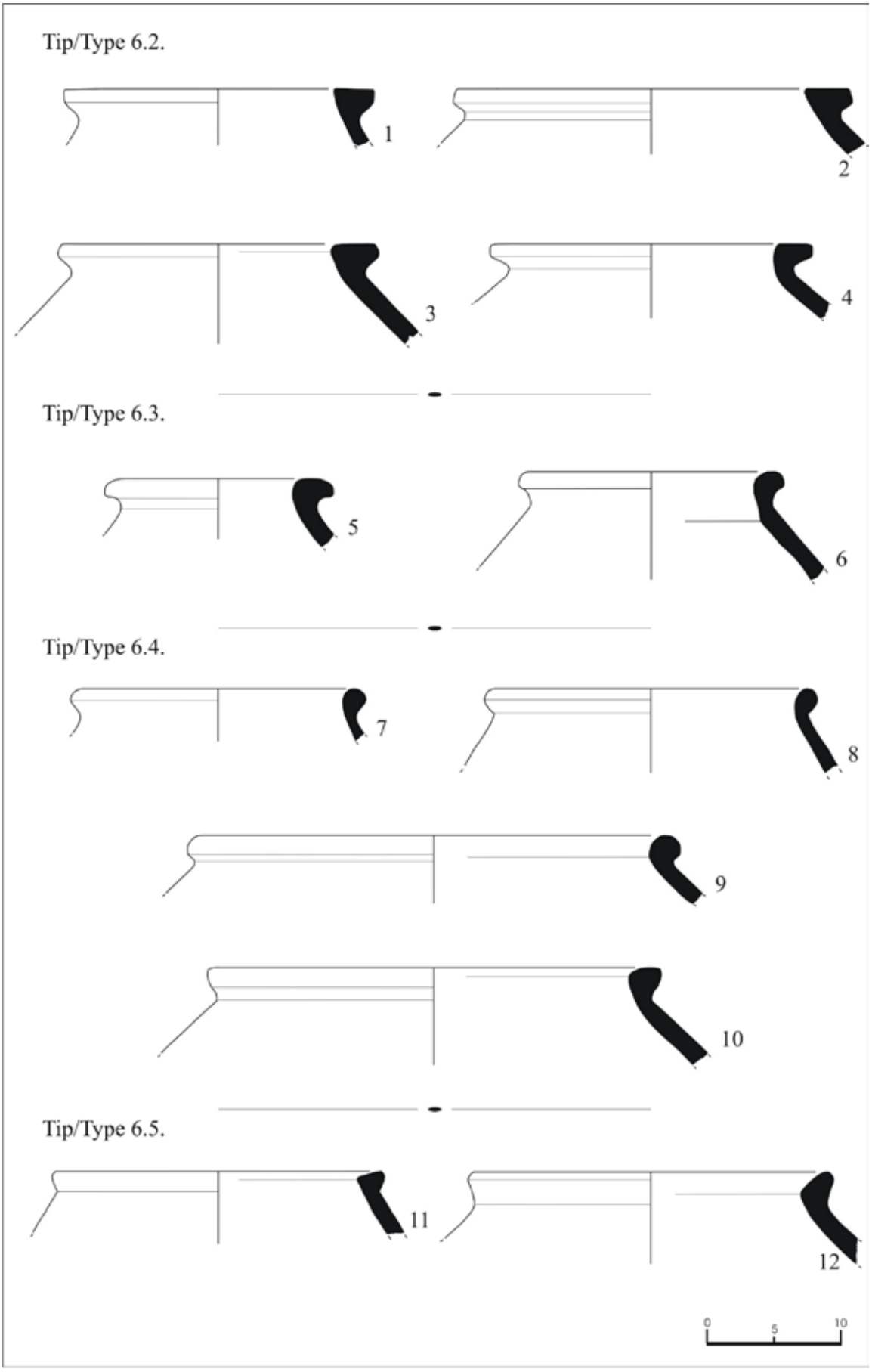
No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	A-12	6.1	7 D	KaraçayırMevkii 1	800-300	Sagona and Sagona 2004: Fig. 148: 11.
				Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 192: 12.
2	A-12	6.1	4 B	Çayıryolu Tepe	900-300	Sagona and Sagona 2004: Fig. 141: 3.
				Kale İsmail Ağa	800-600	Belgiorno et.al. 1984: Fig. 54: 161.
				Kaleköy	OD/MI	Ökse 1988: Abb. 1090.
3	B-3	6.1	7 B			
4	B-17	6.1	6 E	Malatya/Değirmentepe	OD/MI	Ökse 1988: Abb. 1083.



Res./Fig. 84

Res./Fig. 85

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	A-18	6.2	6 A	Büyüktepe Höyük	500-300	Sagona and Sagona 2004: Fig. 145: 2.
				Kilisetepe 2	800-300	Sagona and Sagona 2004: Fig. 176: 1.
2	B-11	6.2	7 D	Çimentepe	800-300	Sagona and Sagona 2004: Fig. 161: 3.
3	B-12	6.2	7 E	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 192: 11.
4	B-3	6.2	7 B			
5	B-13	6.3	7 B	Van/Karagündüz	GD/LI	Kaygaz 2002: Lev. 41: 1.
6	A-11	6.3	6 A			
7	B-15	6.4	7 E	Aksaçlı	900-300	Sagona and Sagona 2004: Fig. 115: 1.
				Pulur/Danışment	600-200	Sagona and Sagona 2004: Fig. 117: 9.
8	B-15	6.4	7 B	Çengiler Tepe	800-600	Sagona and Sagona 2004: Fig. 192: 5.
9	B-9	6.4	10 B	Livar	U/U	Kroll 1976: Abb. 25: 4.
10	B-11	6.4	7 E			
11	A-11	6.5	7 B			
12	B-15	6.5	6 E	Büyüktepe Höyük	500-300	Sagona and Sagona 2004: Fig. 144: 14.
				Verahram	U/U	Kroll 1976: Abb. 7: 17.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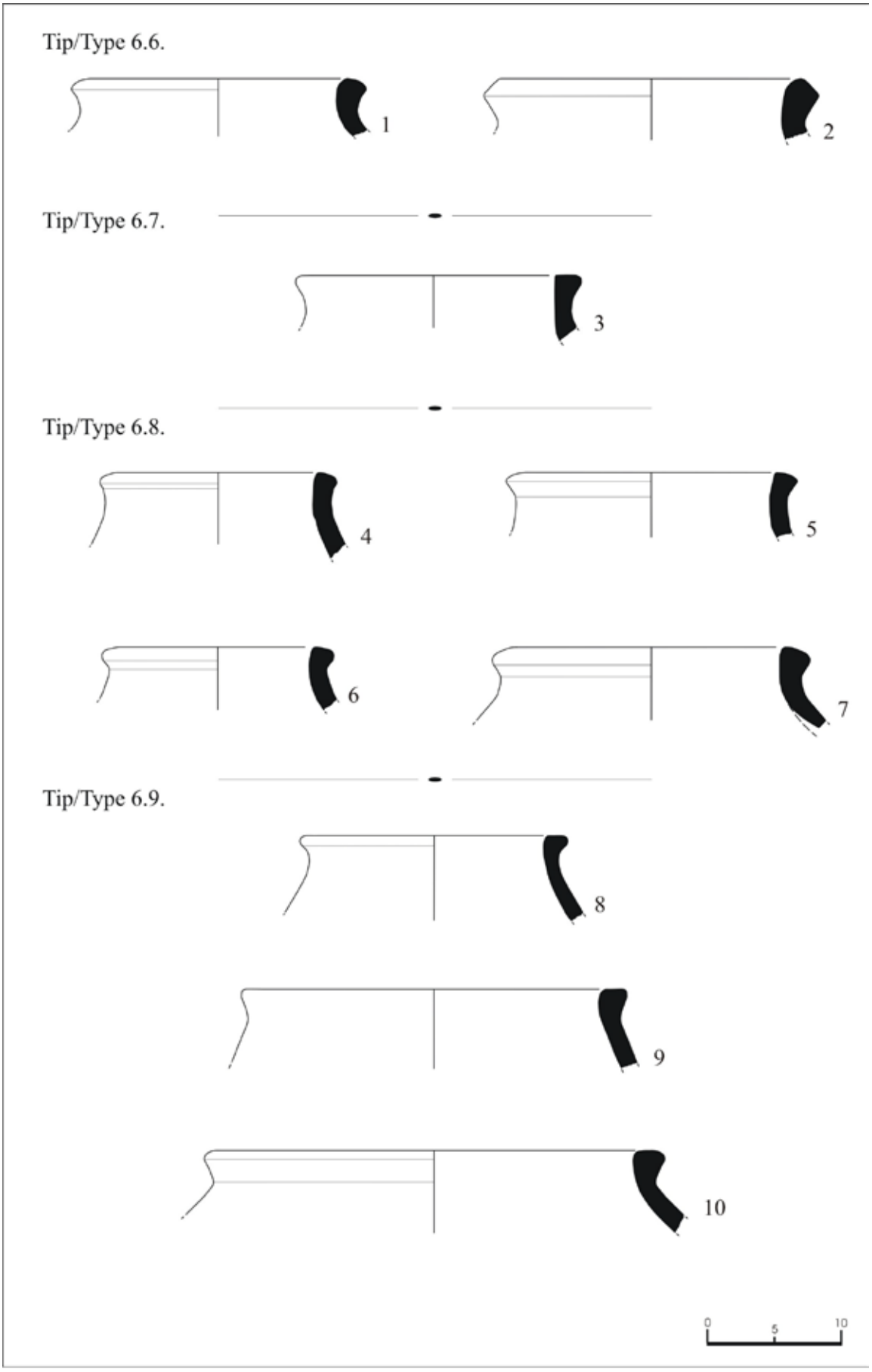
Res./Fig. 85

Res./Fig. 86

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	B-11	6.6	7 A	Kilise Tepe 2.	800-300	Sagona and Sagona 2004: Fig. 176: 5.
				Çengiler Tepe	800-600	Sagona and Sagona 2004: Fig. 192: 9.
2	B-19	6.6	9 E			
3	A-19	6.7	7 B			
4	A-11	6.8	7 A			
5	B-11	6.8	7 A			
6	B-11	6.8	7 B			
7	A-11	6.8	4 A			
8	A-18	6.9	6 A	Çengiler Tepe	900-300	Sagona and Sagona 2004: Fig. 193: 1.
9	B-6	6.9	7 B	Büyüktepe Höyük	900-300	Sagona and Sagona 2004: Fig. 145: 1.
				Kızkalesi	600-200	Sagona and Sagona 2004: Fig. 183: 2.
10	B-12	6.9	7 A	Kilise Tepe 2.	500-300	Sagona and Sagona 2004: Fig. 176: 4.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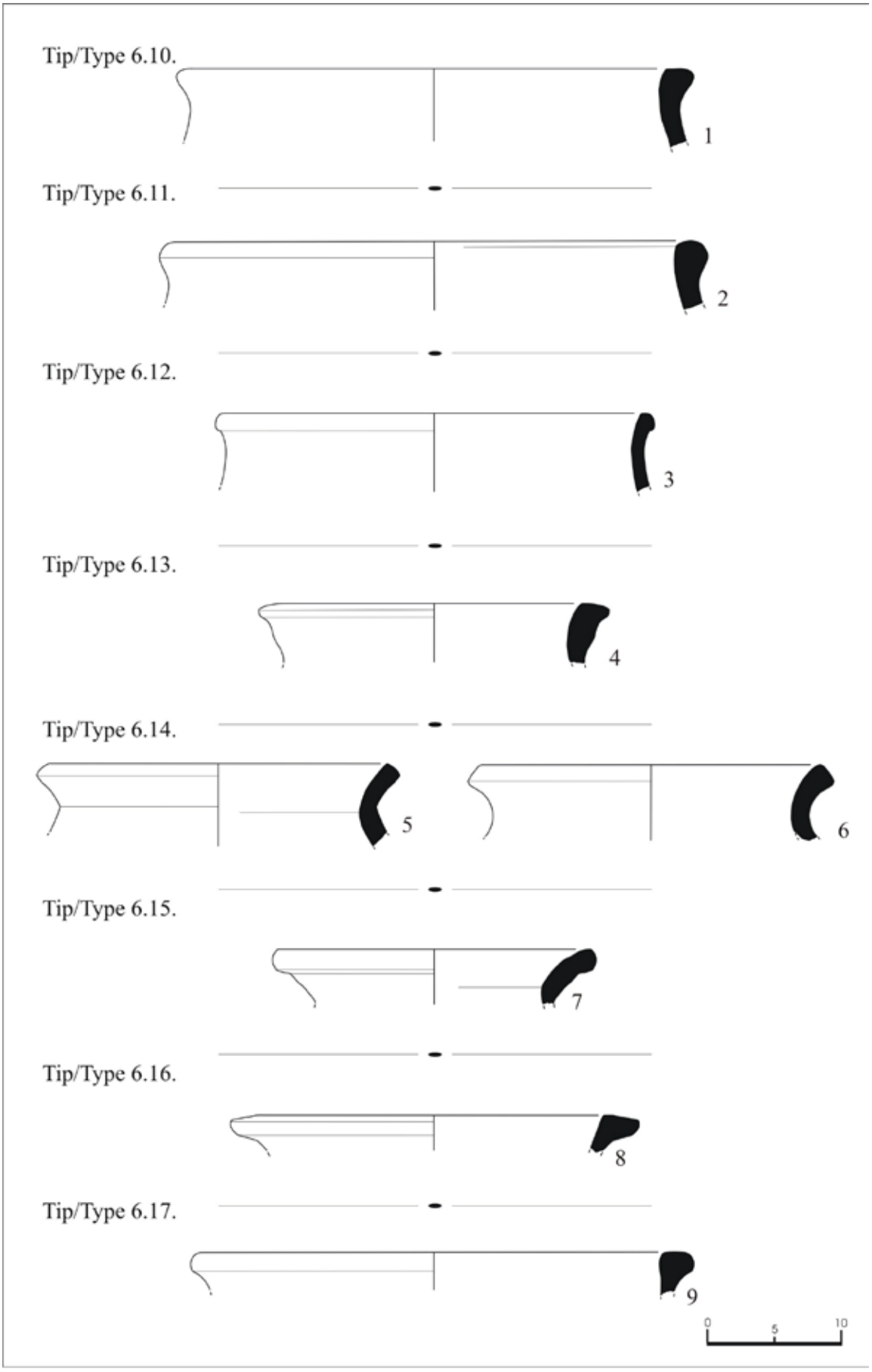
Res./Fig. 86

Res./Fig. 87

No.	K	T.No	MN/ WN	M/S	Tarihleme /Dating M.Ö./B.C.	Krş./Ref.
1	A-11	6.10	7 E	Mezarlık Tepe	800-600	Sagona and Sagona 2004: Fig. 111: 9.
				Dedecik	800-300	Sagona and Sagona 2004: Fig. 155: 5.
2	A-19	6.11	9 A	Çayıryolu Tepe 4.	900-300	Sagona and Sagona 2004: Fig. 142: 4.
3	B-11	6.12	6 B			
4	A-19	6.13	2 A			
5	B-11	6.14	7 B	Ašaghy Qurul	U/U	Kroll 1976: Abb. 17: 11.
6	A-19	6.14	7 A			
7	B-5	6.15	4 B			
8	A-11	6.16	7 D			
9	B-13	6.17	6 B			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Res./Fig. 87

Res./Fig. 88

No.	K	MN/ WN	M/S	Tarihleme/ Dating M.Ö./B.C.	Krş./Ref.
1	B15	11B			
2	B-14	11B			
3	B15	11B			
4	A11	11B			
5	A11	11B			
6	A11	11A	Çayıryolu Tepe 3	500-300	Sagona and Sagona 2004: Fig. 139: 4.
7	B11	11B			
8	B10	11B			

Res./Fig. 88

PART III

MEDIEVAL FINDS

A. ARCHITECTURE OF THE MEDIEVAL AGE

Wall residuals belonging to stone-based structures explored in B-19, B-21, B-22 and C-22 trenchs are the most important Medieval Age-dated architectural residuals found in Güllüdere. It was observed that large stones were used in walls preserved with a height up to 1 m while relatively smaller stones were used inward. Mud and small-scale stones were used as the cement material.

It was detected that structure walls together with their upper parts at a depth of 60 cm in B-19 trench were damaged. Preserved parts indicate that the general plan is has a rectangular form and, with smaller stones, structure was divided into narrow rectangular planned rooms of about 2 m width **(Figure 89-90)**. The upper most part of the structure is preserved at 1790.26 m level and basement level is at 1789.50 m. It was noticed that lower walls of the structure are higher which is built in accordance with the slope of hillside and general geography structure. The preserved upper most part of the walls **(Figure 91-93)** in B-21, B-22 and C-22 trenchs is at 1787.83 m level and lower part is at 1787.40 m level. In the C-22 trench in eastern part of the structure, a tendour (stove) was found to be placed in a circular stone series **(Figure 92)**. This stove which was added to the well preserved section of the structure at the eastern corner may indicate that this place was used as a settlement area rather than an area for animal activities. A Medieval Age-dated miniature stone found within the stove (Figure 95) yields that the last use period of the structure is Medieval Age and glazed and unglazed pottery pieces and limited number of glass necklace pieces obtained from the same structure are also indicative of Medieval Age.

Since structures of the Medieval Age display simple Greek architecture as well as provisory plan characteristics in which stone and sand materials are used, this place probably belongs to a Medieval Age village settlement. The river bed just eastern part of the Güllüdere settlement area and natural water springs in the vicinity might indicate that people were settled here for stock rising and agricultural activities and such structures were built for these purposes. 34 Medieval Age graves found in areas southwest of structures should belong to residents of this settlement.

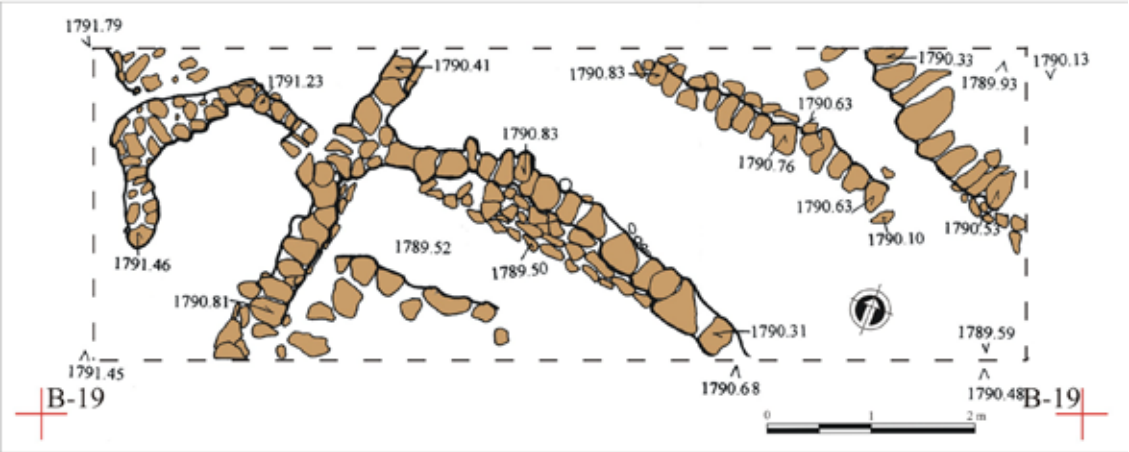


Figure 89: B-19 trench, architectural draw of walls of the Medieval Age structures

Figure 90: B-19 trench, walls of the Medieval Age structures.

Figure 91: B-21, B-22 and C-22 trenchs, walls of the Medieval Age structures.

Figure 92: C-22 trench, tandour (stove) from the Medieval Age structure.

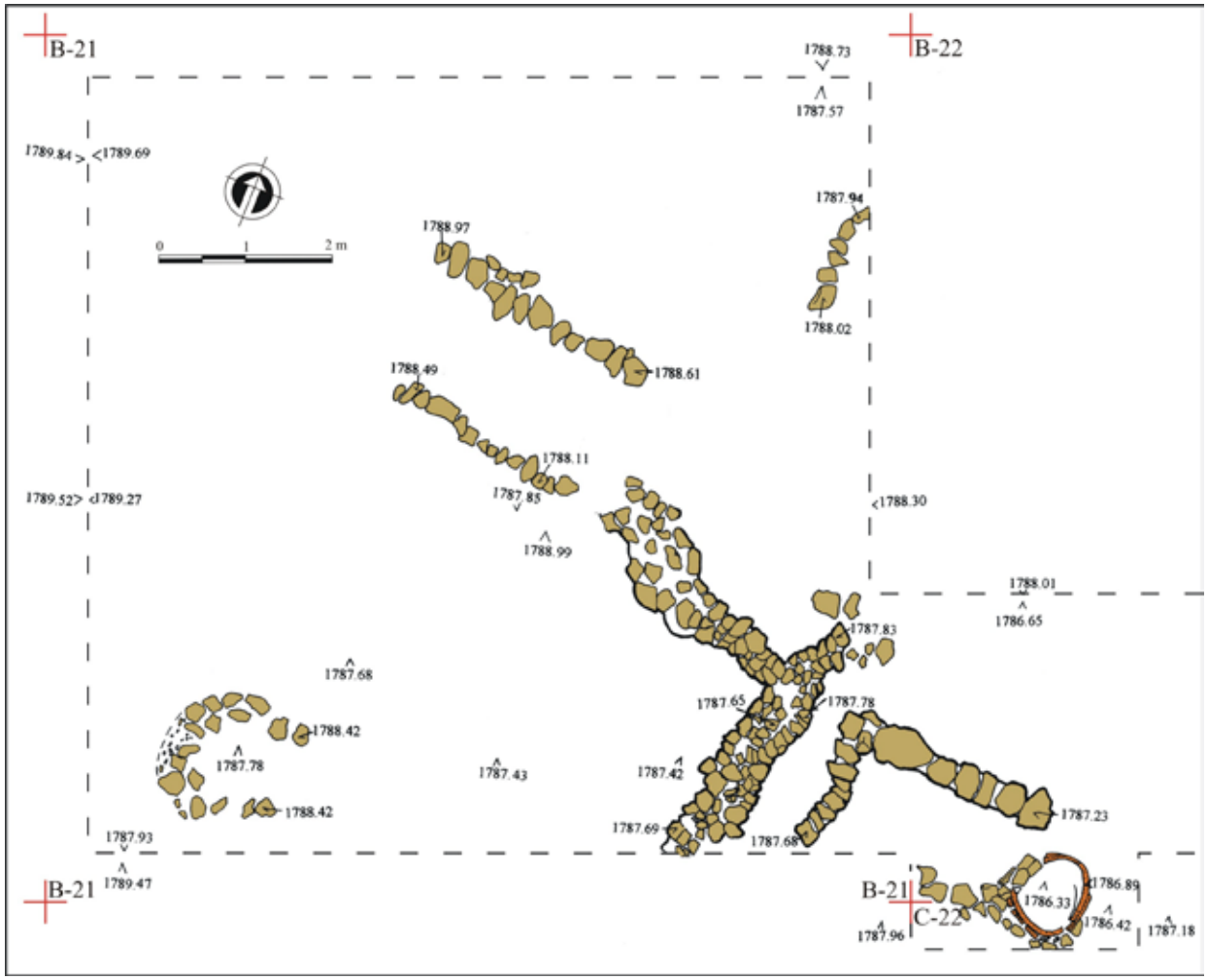


Figure 93: Architectural draw of walls and tandour of the Medieval Age structures in B-21, B-22 and C-22 trenchs.

B. SMALL FINDS

1. Terracota Finds

Terracota Clover Rimmed Jug **(Figure 94)***:* It was found at the code of 1786.52/1786.63 in 7/c plan square of B-22 trench. Its rim diameter is 10 cm, bottom diameter is 8.2 cm and container height is 15.5 cm. The container that was obtained as three pieces broken from the bottom has an outward-inclined rim and it is short necked, wide abdomen and flat bottomed. The handle connected from the lip to the main body has a rectangular shape. There is a sharp, hand-shaped, relief decoration to the top of handle. The rim of container was shaped with clover-like ewer of 4.14 cm wide. The lip was surrounded with 1 cm wide band. There are two button decorations added to the end of neck of the ewer. Two lines of wavy drawings of 2.7 cm wide are placed within three chamfers on the shoulder. Burnt traces are observed at the half part of container's outer surface. The container was made by hand and shaped with wheel. The outer surface color of brown-cemented (7.5 YR 4/4) container are dark reddish brown (5 YR 3/2), brown (7.5 YR 4/3) and black.

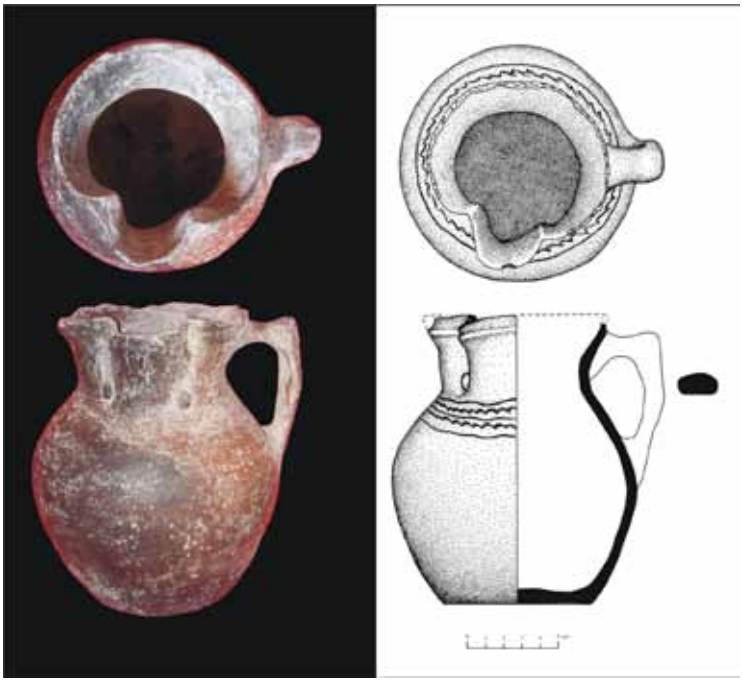


Figure 94: Terracota Jug.

Terracotta Miniature Jar* (Figure 95):* Its rim diameter is 4.5 cm, bottom diameter is 3.8 cm and height is 5.5 cm. It was found at the code of 1786.50 in 1/b plan square of C-22 trench. The miniature container has an outward-inclined rim and it is short necked, wide abdomen and flat bottomed. The handle from the rim ends at the shoulder. Polish at the surface of container is stripped. Due to high temperature during the cooking, color differences were formed at the bottom of container and some parts of body. Container was shaped by hand. There are a break at the rim and a little amount of calcareous layer within the container that are previously formed. The outer and inner surface color of yellowish brown cemented (5 YR 5/6) container is brown (5 YR 4/4).

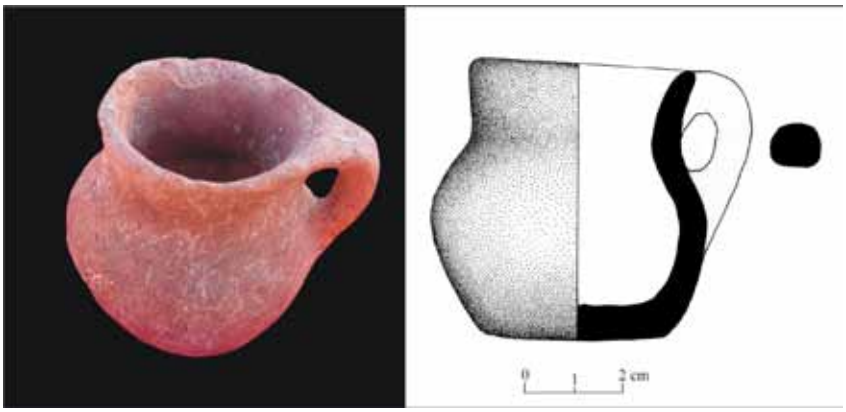


Figure 95: Terracota miniature jar.

Terracotta Oil Lamp with Stand* (Figure 96)*: Its rim diameter is 7.7 cm, bottom diameter is 5 cm and height is 4.3 cm. It was found at the code of 1792.82 in 1/g plan square of A-19 trench. It is simply open rimmed, based bowl in form. There are irregular, unidirectional 11 holes inside of the bottom. Due to high temperature during the cooking, color difference occurs at the outer surface. Container was shaped by hand. Following the gluing of broken pieces of the oil lamp that was obtained as complete pieces, missing parts were completed with plaster. Outer surface is brown (10 YR 5/3) and polished and inner surface is dark grayish brown (10 YR 4/2) and black.

Figure 96: Terracota oil lamp with stand.

Terracota Spindelwhorl **(Figure 97)***:* Its rim diameter is 2.6 cm, hole diameter is 0.54 cm and height is 0.8 cm. It was found at the code of 1790.27 in 7/d plan square of B-19 trench. Around the disc was adjusted as a band. Side band and upper part of the disc have a nail-made notch decoration. There are triangular and circular hollows around the hole that has not been completely centered. Burnt traces are observed at upper part of the ware and there is also a small fracture on some part of the side. The outer surface color of reddish brown-cemented (5 YR 5/4) disc is brown (7.5 YR 5/4) and dark gray (10 YR 3/1) and lower surface color is black (7.5 YR 5/4).

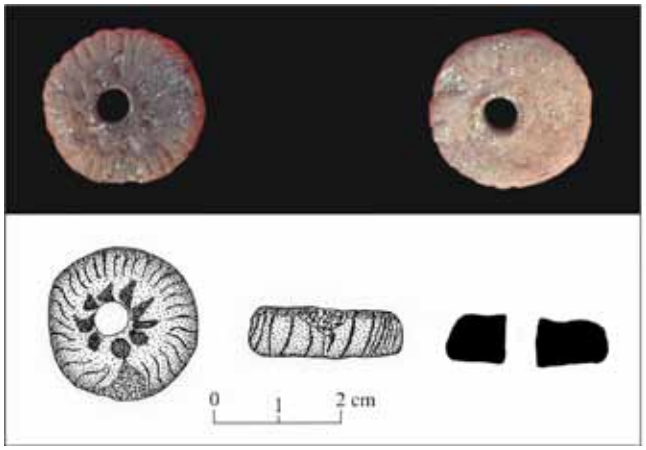


Figure 97: Terracotta spindlewhorl.

2. Metal Finds

Winged Arrow Head **(Figure 98)*:*** The length is 6.3 cm, tip thickness is 0.4 cm and wing trench is 0.29 cm. It was found at the code of 1788.25 in 10/ı plan square of B-21 trench. Arrow tip is inclined to the end. Its handle is spiral and has a circular section. Tips of handle and wings are broken. Iron-made arrow tip was produced on mold.

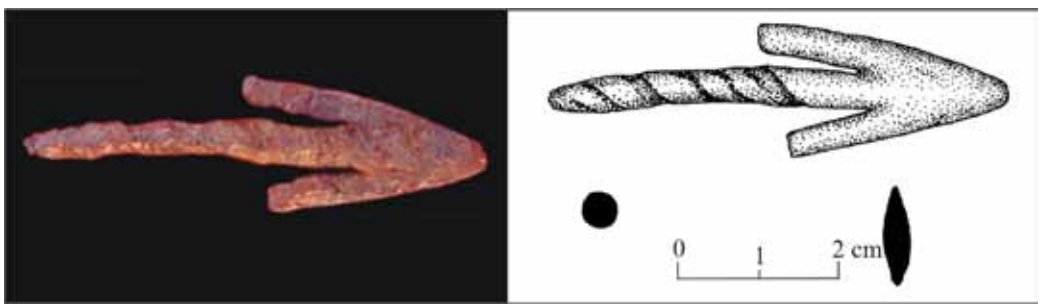


Figure 98: Winged arrow head.

Bronze Ring **(Figure 99)*:*** The diameter is 2.6 cm. It was found on left hand of M-30 skeleton at the code of 1791.66/1791.53 in 4/e plan square of A-19 trench. Ring has a circular shape and circular section. Bronze-made ring was produced with hammering technique. Some alterations on extremely corroded ring result in pores to occur in the body.

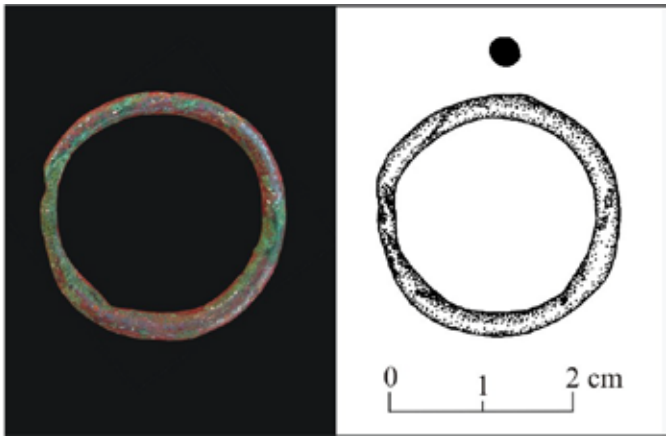


Figure 99: Bronze ring.

3. Glass Finds

Glass Bracelet Pieces: 6 glass bracelets were found in B-19, B-21 and B-22 trenchs. Glass bracelets of blue **(Figure 100: 1)**, green **(Figure 100: 2, 4, 6, 8)** and yellow **(Figure 100: 5)** colors were produced with spiral and molding techniques. In some bracelet pieces, dark red, brick red and white colored glasses were added among the spirals **(Figure 100: 3, 7)**. Bracelets display various shapes such as band, circular and triangular with rounded sides.

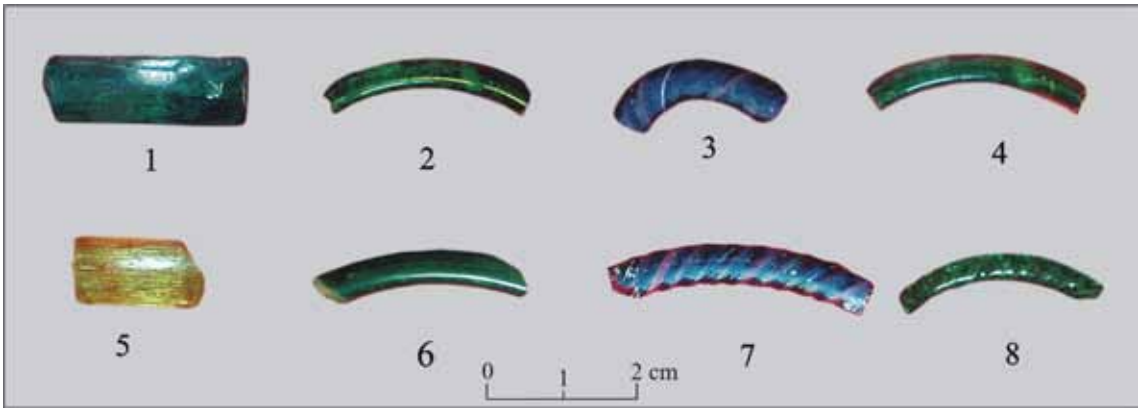


Figure 100: Glass bracelet pieces

4. Stone Finds

Malta-Cross Decorated Grave Stone (*Figure *101:1): Dimension is 60 x 48 x 16 cm and relief diameter is 35.5 cm It was found at the code of 1793.01/1792.74 in 4/f plan square of A-19 trench. A Malta cross of 35.5 cm diameter was put on the widest part of stone. The cross motif was appeared as a relief following the drawing of cross shape and chipping upon of the subsidence of the base. Other parts of the stone were not processed.

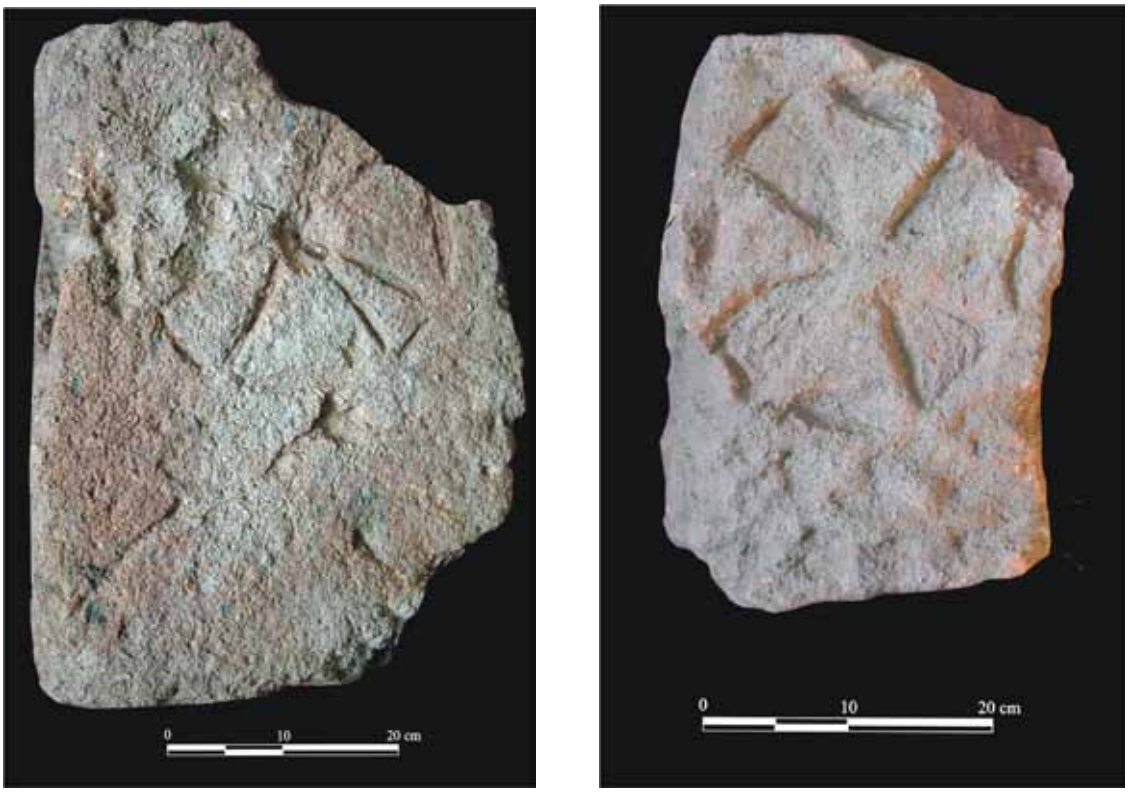
Malta-Cross Decorated Grave Stone (*Figure *101-2): Dimension is 27.5 x 19.5 x 10 cm. It was found at the code of 1792.35 in 5/d plan square of A-19 trench. Grave stone is a single piece. The cross motif was appeared as a relief following the selection of an area of 20 cm on the stone and then subsidence and chipping of the base. There is another relief decoration of triangular shape of 6 cm on sharp tip of the stone. Back surface and sides of this very soft limestone were smoothed as an oval shape.

1 **2**

Figure 101: Malta-cross decorated grave stones.

Malta-Cross Decorated Grave Stone (*Figure *102:1): Dimension is 32 x 22 x 14 cm and relief diameter is 19 cm. It was found at the code of 1792.45 in 3/d plan square of A-19 trench. It has nearly a rectangular form. The cross motif was appeared as a relief following the selection of an area of 19 cm on the stone and then subsidence and chipping of the base. The sides of the stones were smoothed but other areas were not processed. Device traces are shown on the stone surface.

Grave Stone (*Figure *102:2): Dimension is 35 x 48 x 21 cm. It was found at the code of 1792.73 in 4-5/a-b plan square of A-19 trench. A cross motif resembling to the Malta cross was appeared as a relief following the selection of a circular area on the stone and then subsidence and chipping of the base. The parts of decoration at right upper corner and right lower corner are broken.



1 **2**

Figure 102: Malta-cross decorated grave stones.

Clover Decorated Cross Grave Stone (*Figure *103:1): Dimension is 65 x 50 x 16 cm. It was found at the code of 1792.61/1792.38 in 6-7/e plan square of A-19 trench. Upper part of the stone is broken. Its surface and base are smoothed. A 6 cm cross motif composing of double clover motifs at tips of the long line was appeared as a relief following the subsidence and chipping of the smoothed base. Device traces are shown on the stone surface.

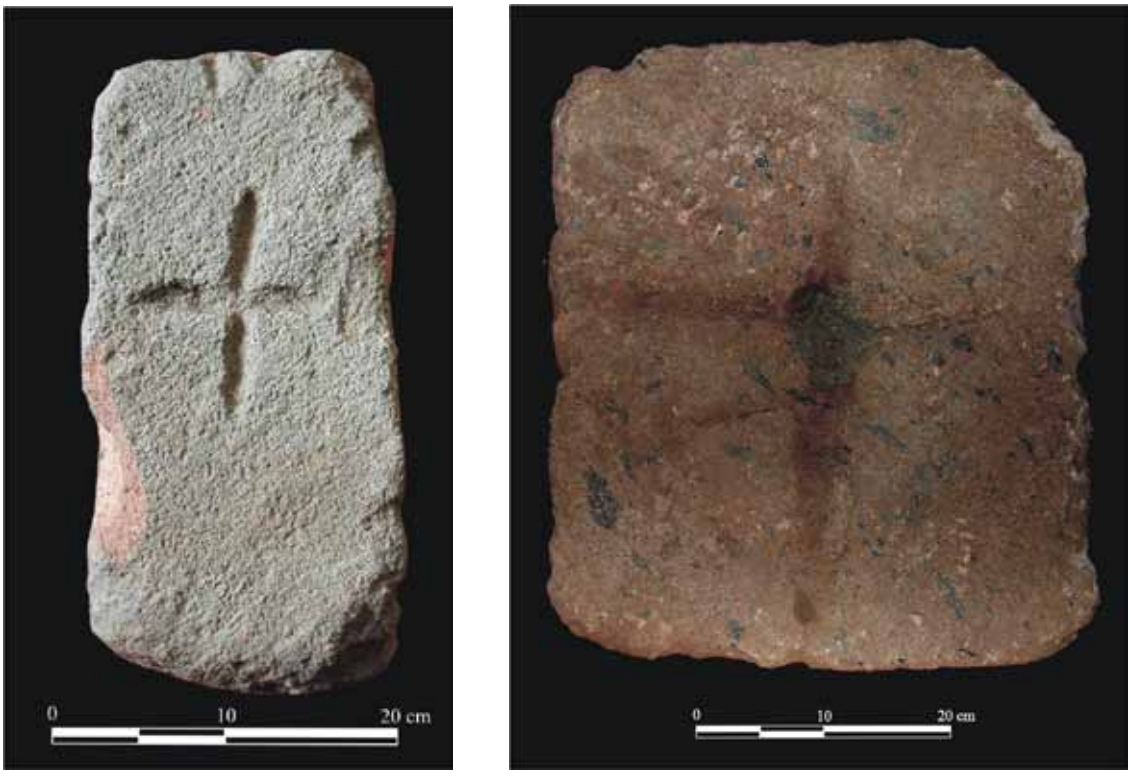
Cross Decorated Grave Stone (Figure 103:2): Dimension is 36.5 x 25.5 x 9.5 cm. It was found at the code of 1792.41 in 5/a plan square of A-19 trench. Grave stone was crosswise broken and other part is missing. A frame of 5 cm was put on the stone. As a result of subsidence and chipping of the base, jointed relief cross or crosses were formed. Device traces are shown on the stone surface.

1 **2**

***Figure* 103:** Cross decorated grave stones.

Scrapped Cross Decorated Grave Stone (Figure 104:1): Dimension is 31 x 15 x 22 cm. It was found at the code of 1792.56/1792.40 in 7/b plan square of A-19 trench. A simple cross of 10.5 cm length and 9.5 cm width was scrapped on a smoothed stone. Device traces are shown on the stone surface.

Grave Stone (Figure 104:2): Dimension is 35 x 40 x 16 cm. It was found at the code of 1792.70 in 4-5/a-b plan square of A-19 trench. A simple cross motif of 25 cm length and 25 cm width was scrapped on a single stone. It is a metal-mixed stone and its metal content is intensely shown in central part of cross motif.



1 **2**

***Figure* 104:** Cross decorated grave stones.

C. POTTERY FINDS

A. Ware Groups

Profiling and decorated amorphous pieces of the Medieval Age pottery found in the Güllüdere excavation are divided into 9 main ware groups on the basis of clay color, admixture materials, surface colors and glaze **(Table 6)**. Polishing, paint decoration and other decorative agents were considered as a discrimination factor in forming of the subgroups and this type of features of each piece was given in the catalogue.

No.	Ware Group	Sup Group	
1	Reddish Brown Ware		
		1E	Polished Ware
		1B	Unpolished Ware
2	Exterior Black-Interior Brown Ware		
3	Black Ware		
4	Red Ware	4A	Polished Wares
		4B	Unpolished Wares
5	Buff Wares	6B	Unpolished Wares
		6E	Polished Ware
6	Cream Slipped-Red Ware		
7	Fine Red Ware		
8	Fine Yellowish Ware		
9	Glazed Ware		

Table 6: Ware Groups

The number of all describable, profiling and decorated amorphous Medieval Age pottery explored in the Güllüdere excavation is 422. Distribution of these pottery materials by main ware groups was calculated. Results are given in Table 7. The polishing ratios observed in pieces are shown in Table 8. In addition, the distribution of these 10 main ware groups by main typological forms is given in Table 9.

Main Ware Group	Number	Ratio
1st Ware Group	61	14%
2nd Ware Group	46	11%
3rd Ware Group	20	5%
4th Ware Group	224	53%
5th Ware Group	41	10%
6th Ware Group	8	2%
7th Ware Group	8	2%
8th Ware Group	9	2%
9th Ware Group	5	1%
TOTAL	422	%100

Table 7: Distribution of pottery by ware groups

No	Polished		Unpolished		Total	
1	28	46%	33	54%	61	100%
2	0	0%	46	100%	46	100%
3	0	0%	20	100%	20	100%
4	124	55%	100	45%	224	100%
5	10	24%	31	76%	41	100%
6	0	0%	8	100%	8	100%
7	0	0%	8	100%	8	100%
8	9	100%	0	0%	9	100%
TTL	171	41%	246	59%	417	100%

Table 8: Polishing ratios of ware groups

Ware No.	1	2	3	4	5	6	7	8	9	TOP
Pithos				11	1					12
Pot	2	4	1	18	3					28
Jug	10	3	3	20		1	3	2		42
Bowl	2	2		13	7		3	2	4	33
Cooking Pot	10	3	3	32	4	2				54
Handle	7	3	4	55	6	3		2		80
Flat Base	18	21	3	17	9	1	1		1	71
Ring Base						1		1		2
Lid	2		2	6	3					13
Cup				5						5
Miniature pot		1		1						2
Decorated Amorphous	10	9	2	44	8		1	1		75
TOTAL	**417**									

Table 9: Distribution of main ware groups by forms

Reddish Brown Ware (1st Ware Group)

It is mixed with stone, limestone, sand, chamotte and mica. Cement color is from reddish brown to various tones of brown (10YR 5/3) (5YR 4/4). Inner and outer parts are generally in the color of cement, thin coated and wet stroked. Since they are generally used for cooking, surfaces are always dark grey and black soot. They are well cooked and produced under wheel. With 61 pieces, wares of this group comprise 14% of all the Güllüdere ware groups. The most important discriminative features are cement

and coat color. All are produced under wheel. 46% of the pieces are weakly polished and other 54% are unpolished but only surface roughness is smoothed. Outer surface is in the color of cement and normal coated while inner parts are generally wet stroked.

***Figure* 105:** Reddish brown ware (1st ware group).

Exterior Black-Interior Brown Ware (2nd Ware Group)

It is mixed with stone, limestone, quartz, sand and mica. Cement is black colored. Inner surface is reddish brown (5YR 5/3) and outer surface is in the cement color and is coated. It is well cooked and all are produced with wheel. With 46 pieces, wares of this group comprise 11% of all the Güllüdere ware groups. The most important discriminative feature is the coating that has black color at out and reddish brown inside. Polishing is not observed in all wares. Roughness at the surface is smoothed. All are shaped under wheel.

***Figure* 106:** Exterior Black-Interior Brown Ware (2nd ware group).

Black Ware (3rd Ware Group)

It is mixed with stone, limestone, sand and mica. Cement is in black and various black tones (7,5YR 2.5/1). It is in the cement's color and normal coated. They are well cooked and produced by wheel. The most discriminative feature is black cement and coating color. With 20 pieces, wares of this group comprise 5% of all the Güllüdere ware groups. They are shaped under wheel. Polishing is not observed but surfaces are smoothed.

***Figure* 107:** Black ware (3rd ware group).

Red Ware (4th Ware Group)

It is mixed with stone, limestone, fine sand and mica. With 224 pieces, wares of this group comprise 53% of all the ware groups and they rank 1st place. The most discriminative feature is the cement in various red colors and the coating of the same color. Surface color is not homogeneous all around the container. It is brownish red or yellowish red tones (2.5YR 5/6), (2.5YR 4/4) (5YR 4/4) and some are in gray color or multicolor (2.5Y 3/1) due to cooking. It has the same color as inner and outer cements and it also normal coated and wet stroked. They are well cooked and produced by wheel. All wares in this group are shown in various colors of gray and black soot due to usage. 55% of the pieces are weakly polished and other 45% are unpolished but only surface roughness is smoothed.

***Figure* 108:** Red ware (4th ware group).

Buff Ware (5th Ware Group)

It is mixed with stone, limestone, fine sand and mica. Cement is in various tones of buff (10YR 5/3), (7,5YR 6/6). Inner and outer surfaces are in reddish yellow (7.5YR 6/6) and grayish brown (2.5Y 5/2) (10YR 5/2) colors and normal coated. They are well cooked and produced by wheel. The most discriminative feature is the camel-color cement and the coating in the same color. With 41 pieces, wares of this group comprise

10% of all the ware groups. 24% of the pieces are weakly polished and other 76% are unpolished and all are produced by wheel.

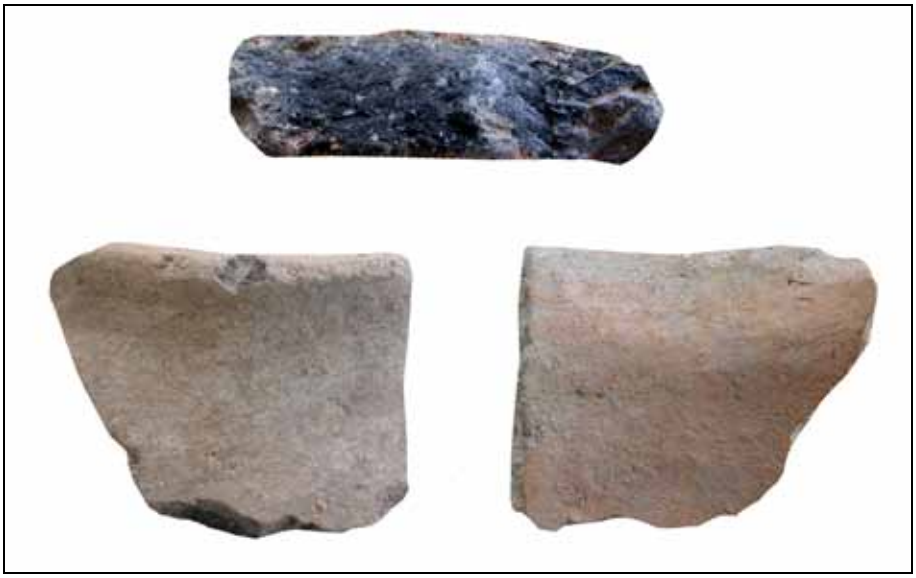


***Figure* 109:** Buff ware (5th ware group).

Cream Slipped Red Ware (6th Ware Group)

It is mixed with stone, limestone, sand and mica. Cement is in red color (2.5YR 5/6). The color is the same as inner cement while outer cement is cream colored (10YR 7/3). It is thinly coated and well cooked and produced with wheel. With 8 pieces, wares of this group comprise 2% of all the Güllüdere ware groups. Cement is in red color. Cream colored outer surface is thinly coated. All are shaped under wheel. All the pieces are unpolished.

***Figure* 110:** Cream slipped red ware (6th ware group).

Fine Red Ware (7th Ware Group)

It is mixed with limestone and mica. Cement is in red color (2.5YR 6/8). The color is the same as inner and outer cements and it is thinly coated. It is well cooked and produced with wheel. Cement has a brick red color. The most important discriminative feature of this group with respect to 4th group is its purified clean cement and compact, nonporous structure. It has the same color as inner and outer cements and it is also normal coated. All are produced by wheel. All pieces are polished but only surfaces are smoothed. With 8 pieces, wares of this group comprise 2% of all the ware groups.

***Figure* 111:** Fine Red wares (7th ware group).

Fine Yellowish Ware (8th Ware Group)

It is mixed with fine sand, limestone and mica. Cement is in red color (7.5YR 6/6). The color is the same as inner and outer cements and it is thinly coated and produced with wheel. Reddish yellow purified clean cement is compact and nonporous.

It has the same color as inner and outer cements and it is thinly coated. It was produced with fact wheel. All pieces are weakly polished. With 9 pieces, wares of this group comprise 2% of all the ware groups.

***Figure* 112:** Fine Yellowish ware (8th ware group).

Glazed Ware (9th Ware Group)

It is mixed with fine sand, limestone and mica. Clean cement is in reddish yellow colored (5YR 6/6). Ware is white to brown glazed. They were produced under fast wheel. All are glazed. Glazing color is white, green and brown. With 5 pieces, wares of this group comprise 1% of all the ware groups.

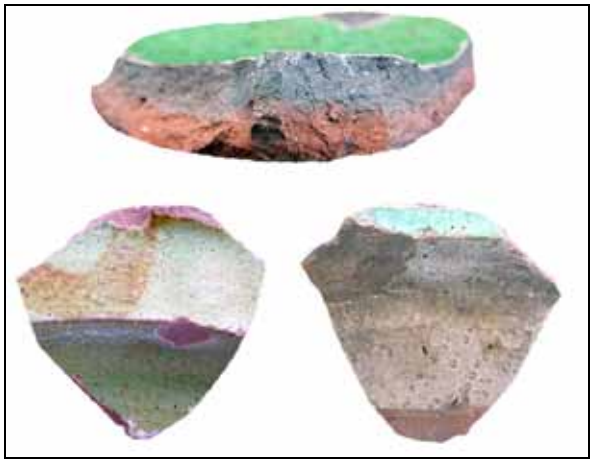


Figure 113: Glazed ware (9th ware group).

D. MEDIEVAL POTTERY CATALOGUE

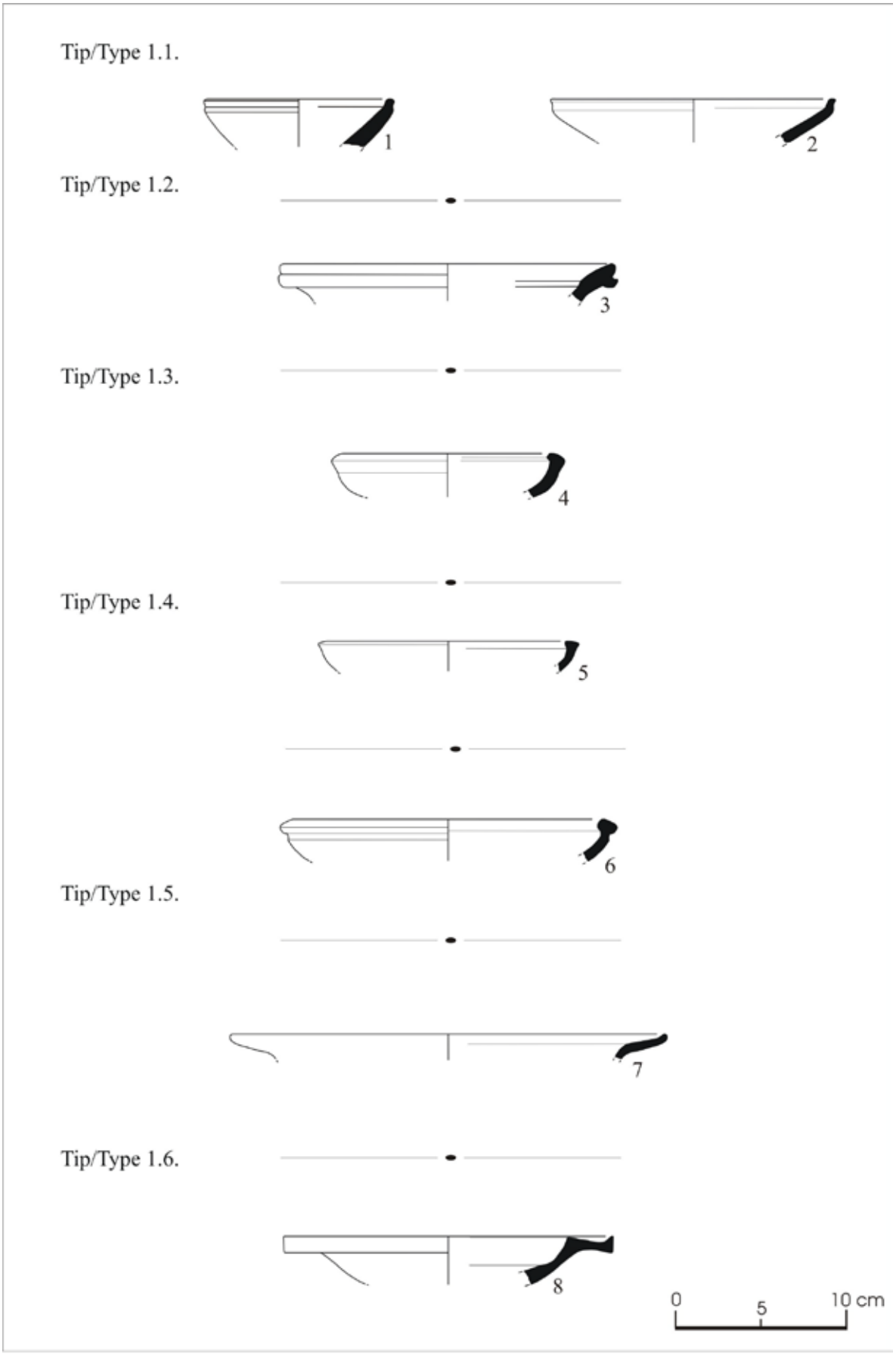
KISALTMALAR/ABREVATIONS

K	Konteks
M	Merkez
MN	Mal No
No.	Numara
T. No	Tip No

K	Kontekst
No.	Number
S	Site
T. No	Type No
WN	Ware No

Res./Fig. 114

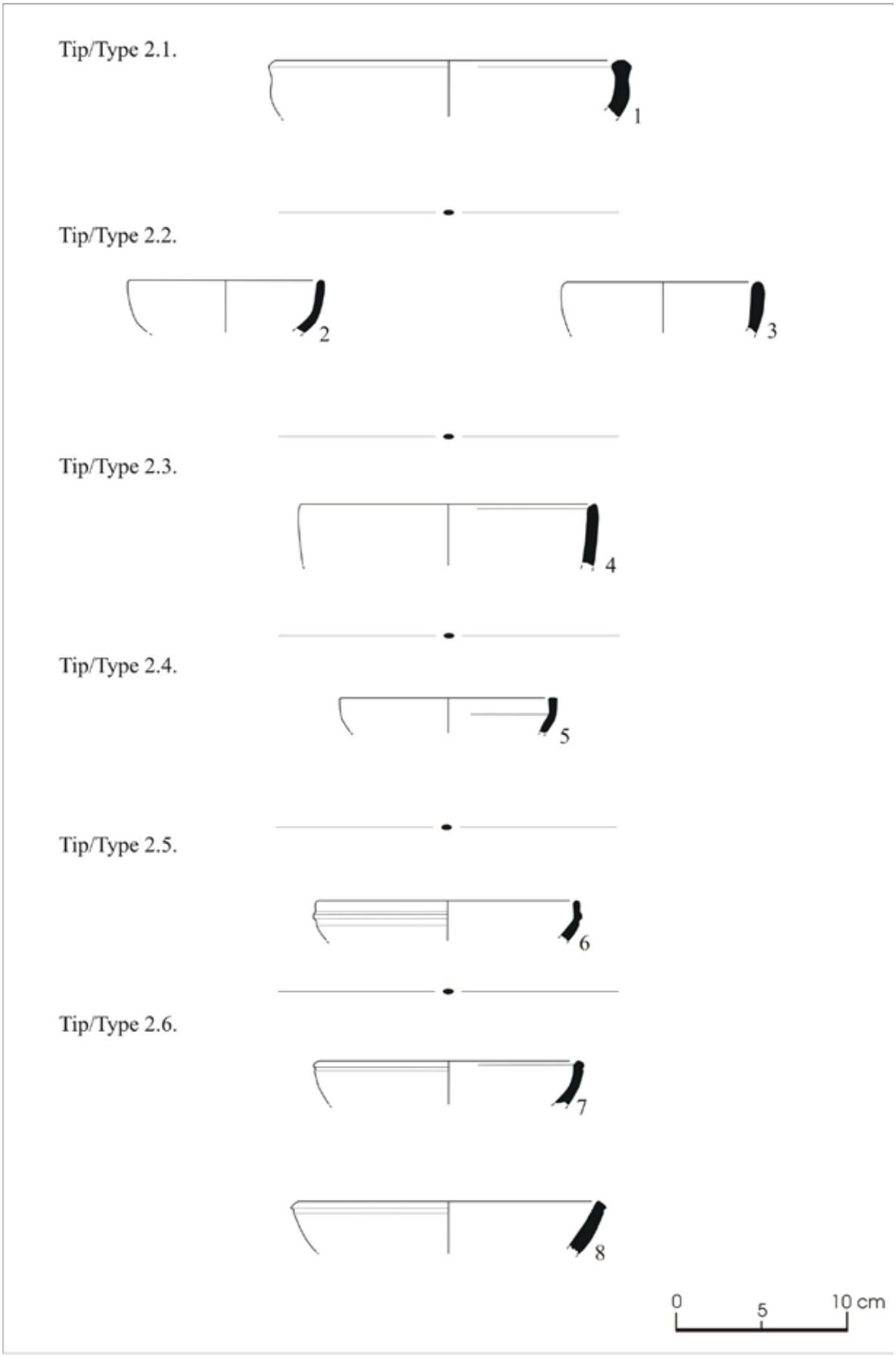
No.	K	T.No	MN/WN
1	A-19	1.1	6
2	B-19	1.1	1
3	B-21	1.2	7
4	B-20	1.3	5
5	B-7	1.4	2
6	B-19	1.5	5
7	B-18	1.6	8
8	B-7	1.7	9


Tip/Type 1.1.
1
2
Tip/Type 1.2.
3
Tip/Type 1.3.
4
Tip/Type 1.4.
5
6
Tip/Type 1.5.
7
Tip/Type 1.6.
8
0
5
10 cm

Res./Fig. 114

Res./Fig. 115

No.	K	T.No	MN/WN
1	B-21	2.1	4
2	B-20	2.2	5
3	B-21	2.2	4
4	B-19	2.3	4
5	B-21	2.4	1
6	B-21	2.5	4
7	B-21	2.6	5
8	A-19	2.7	5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1
Tip/Type 2.2.
2
3
Tip/Type 2.3.
4
Tip/Type 2.4.
5
Tip/Type 2.5.
6
Tip/Type 2.6.
7
8
0
5
10 cm

Res./Fig. 115

Res./Fig. 116

No.	K	T.No	MN/WN
1	B-22	2.7	8
2	B-21	2.7	5
3	B-21	2.7	4
4	B-21	2.8	4
5	B-21	2.8	4
6	A-19	2.9	4
7	B-22	3.1	4

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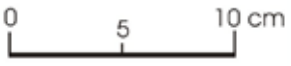
Tip/Type 2.8.

Tip/Type 2.9.

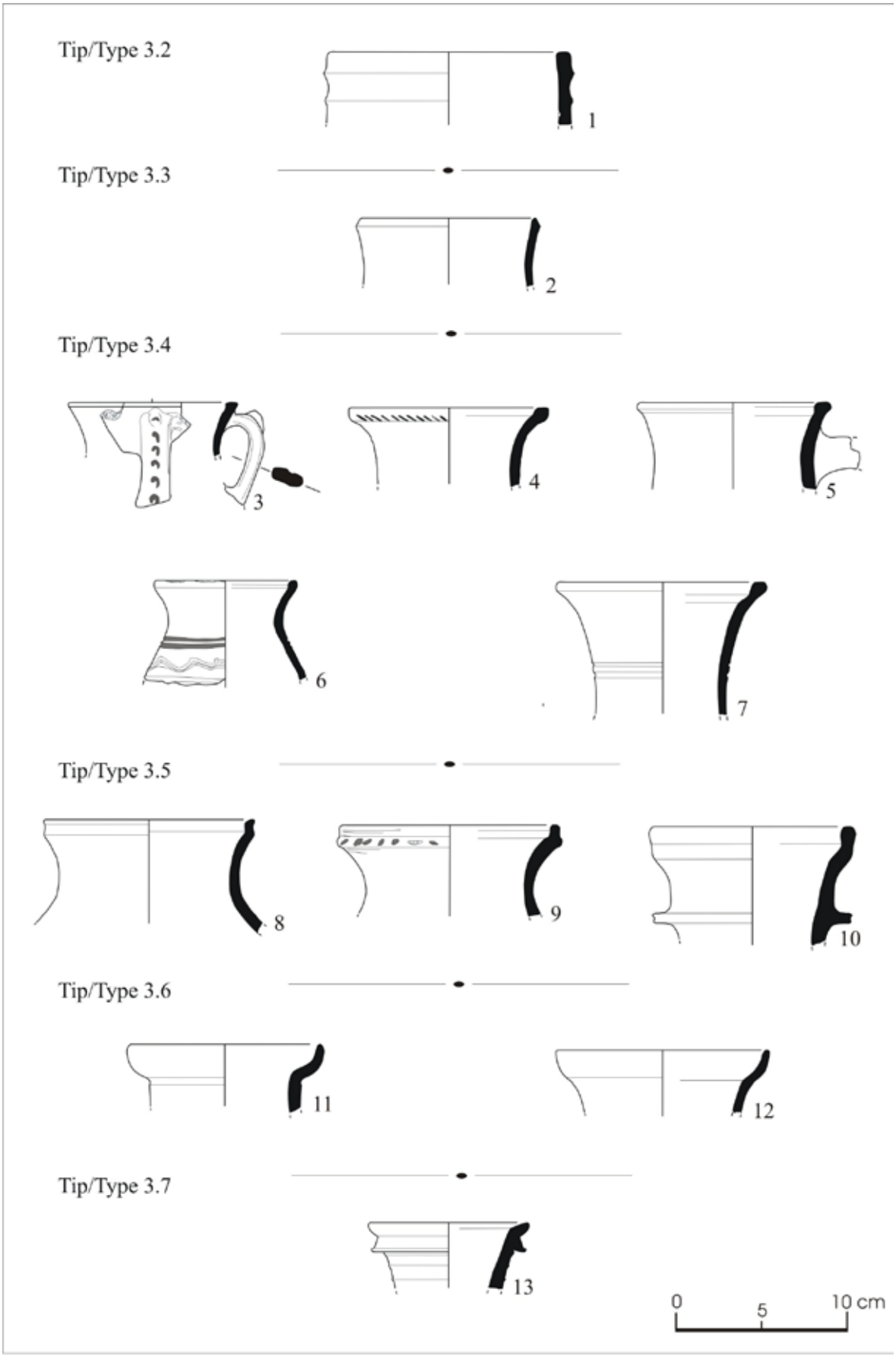
Tip/Type 3.1.



Res./Fig.116

Res./Fig. 117

No.	K	T.No	MN/WN
1	B-21	3.1	1
2	B-19	3.3	2
3	B-21	3.4	4
4	B-19	3.4	1
5	B-21	3.4	4
6	B-21	3.4	1
7	B-21	3.4	4
8	B-22	3.5	3
9	B-21	3.5	4
10	B-21	3.5	3
11	B-19	3.6	4
12	B-21	3.6	1
13	B-20	3.7	7


Tip/Type 3.2
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Tip/Type 3.3
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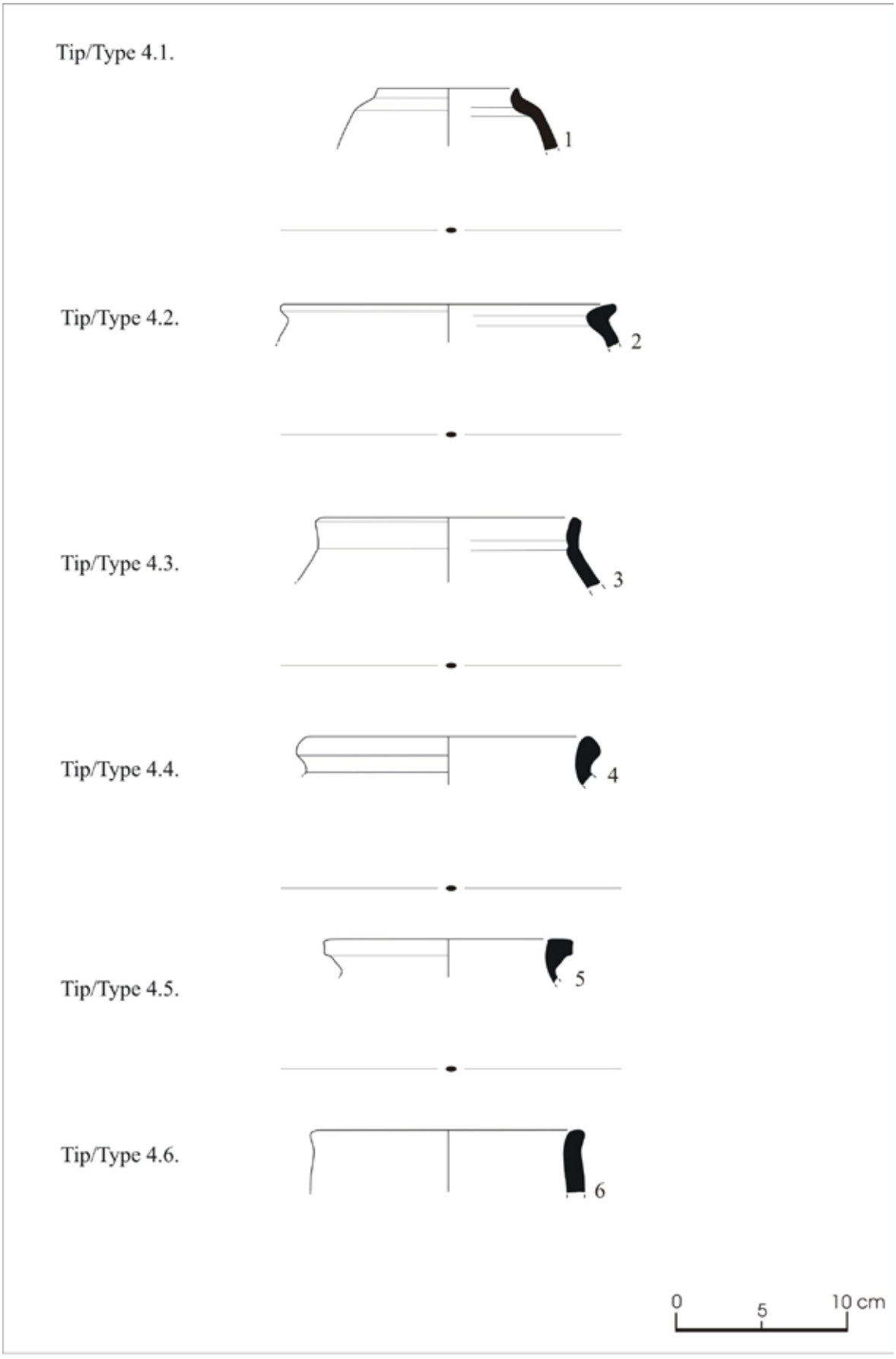
Tip/Type 3.4
3
4
5
6
7
Tip/Type 3.5
8
9
10
Tip/Type 3.6
11
12
Tip/Type 3.7
13
0
5
10 cm

Res./Fig.117

Res./Fig. 118

No.	K	T.No	MN/WN
1	B-22	4.1	3
2	B-19	4.2	5
3	B-20	4.3	4
4	B-21	4.4	1
5	B-22	4.5	4
6	B-22	4.6	4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Tip/Type 4.2.
2
Tip/Type 4.3.
3
Tip/Type 4.4.
4
Tip/Type 4.5.
5
Tip/Type 4.6.
6
0
5
10 cm

Res./Fig.118

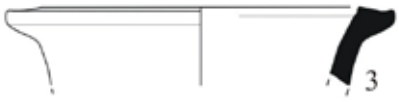
Res./Fig. 119

No.	K	T.No	MN/WN
1	B-22	5.1	2
2	B-19	5.2	4
3	B-19	5.3	4
4	B-21	5.4	4

Tip/Type 5.1.

Tip/Type 5.2.

Tip/Type 5.3.



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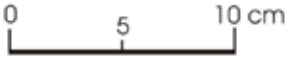
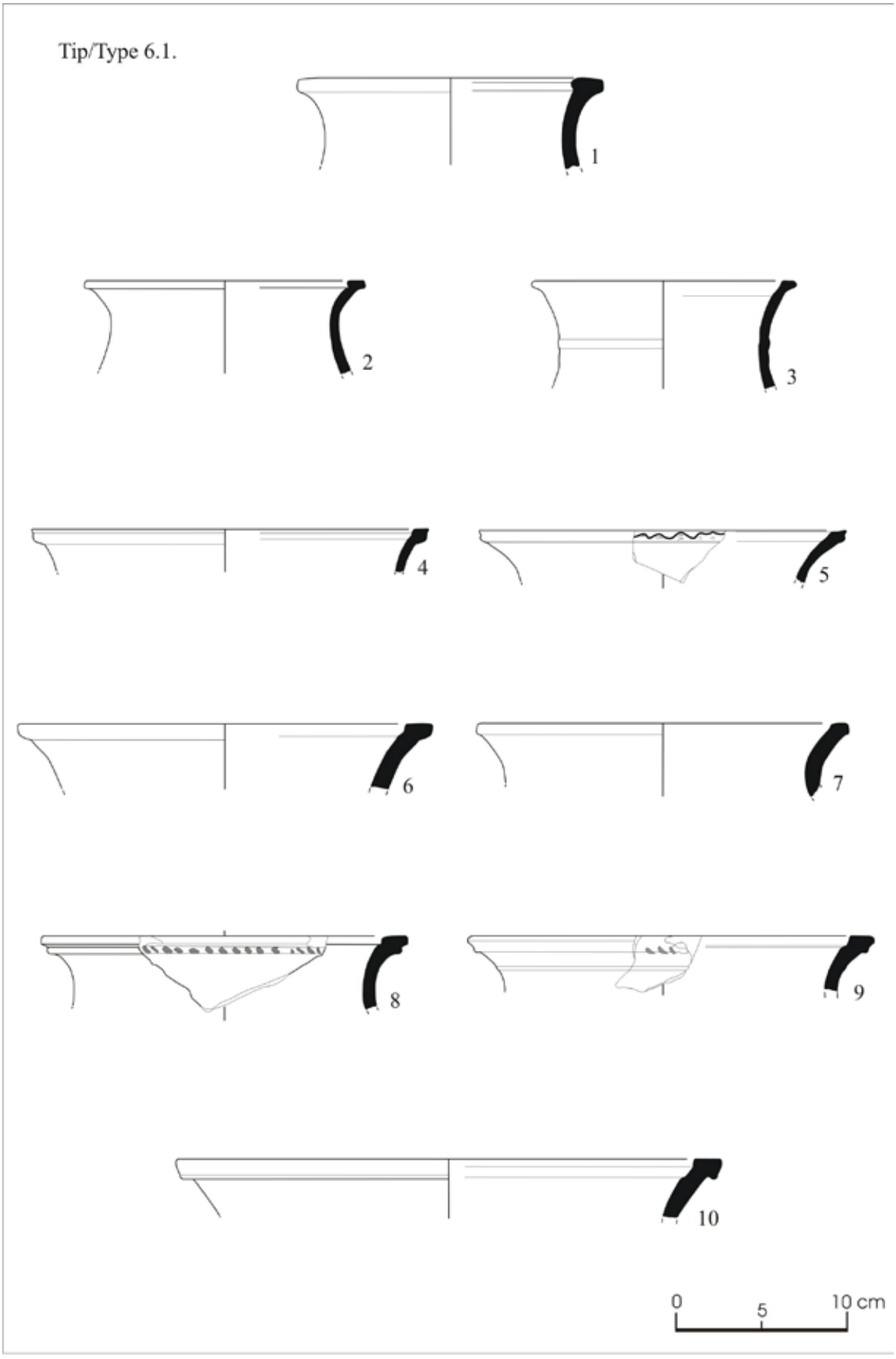


Res./Fig. 119

Res./Fig. 120

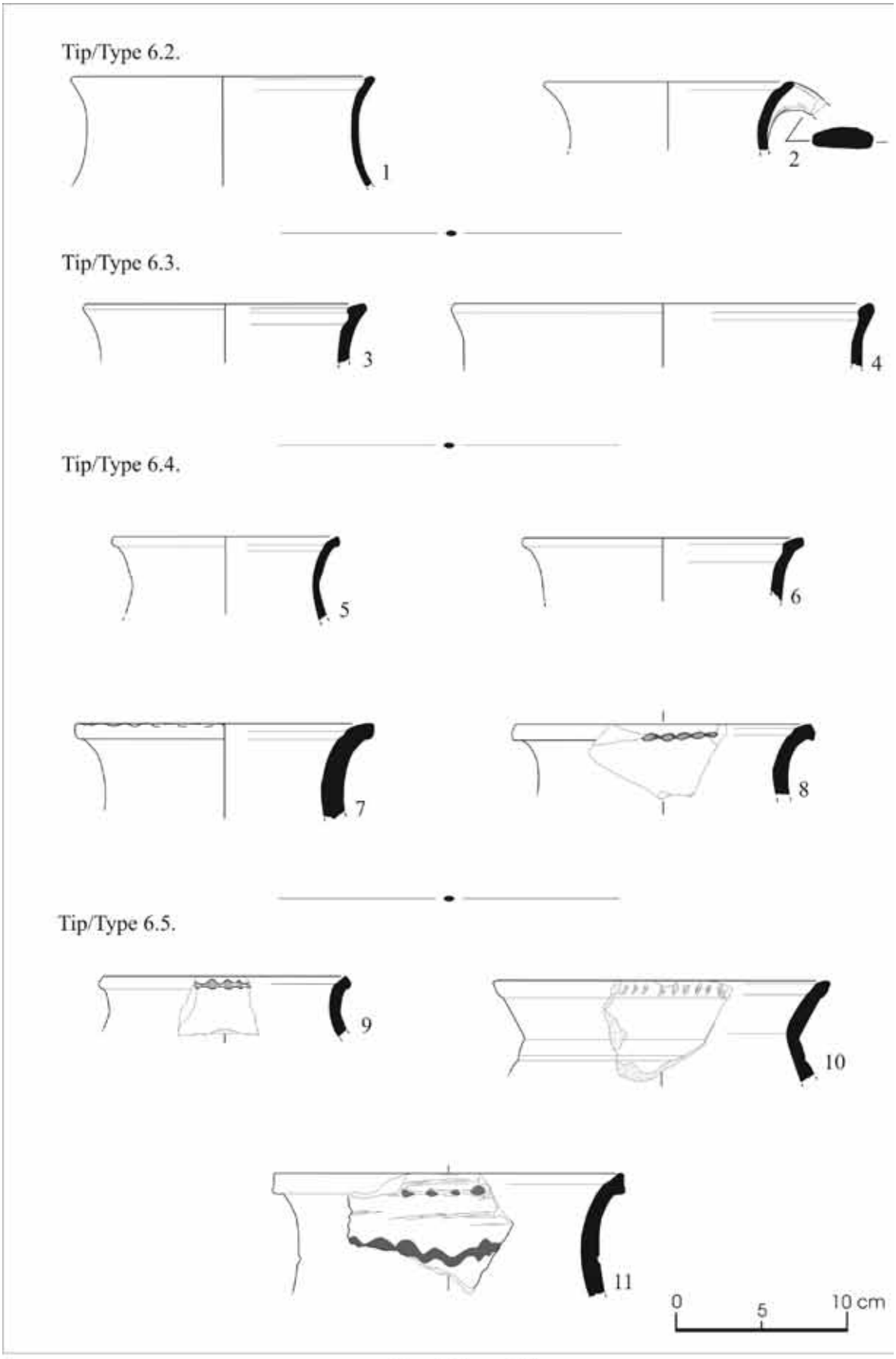
No.	K	T.No	MN/WN
1	B-19	6.1	4
2	B-21	6.1	4
3	B-21	6.1	4
4	B-21	6.1	4
5	B-19	6.1	1
6	B-21	6.1	4
7	B-21	6.1	4
8	B-21	6.1	4
9	B-23	6.1	4
10	B-23	6.1	4



Res./Fig. 120

Res./Fig. 121

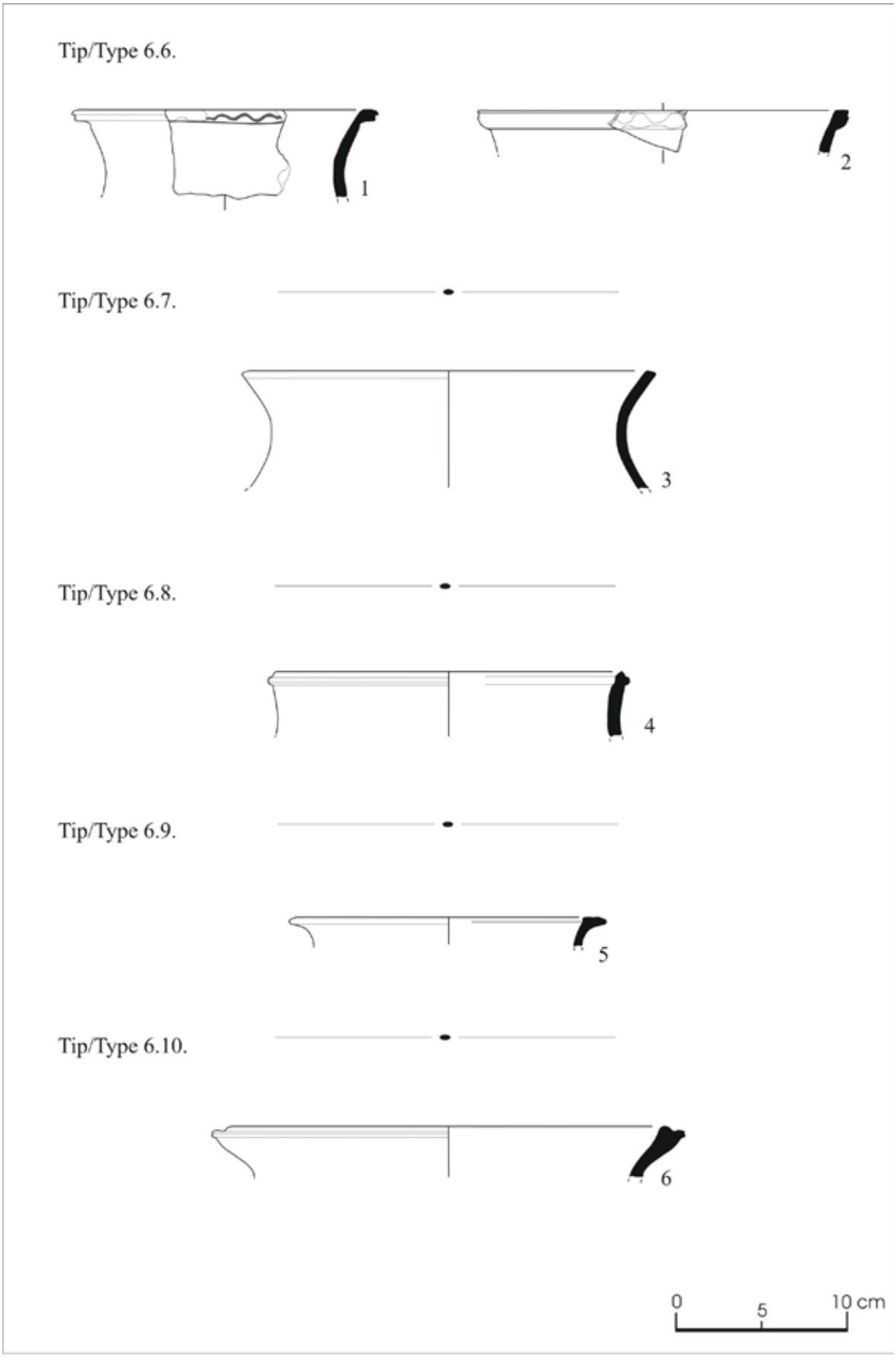
No.	K	T.No	MN/WN
1	B-21	6.2	1
2	B-21	6.2	4
3	B-21	6.3	6
4	B-21	6.3	4
5	B-19	6.4	4
6	B-21	6.4	2
7	B21	6.4	4
8	B-22	6.4	2
9	B-19	6.5	2
10	B-19	6.5	4
11.	B-21	6.5	1


Tip/Type 6.2.
1
2
Tip/Type 6.3.
3
4
Tip/Type 6.4.
5
6
7
8
Tip/Type 6.5.
9
10
11
0
5
10 cm

Res./Fig. 121

Res./Fig. 122

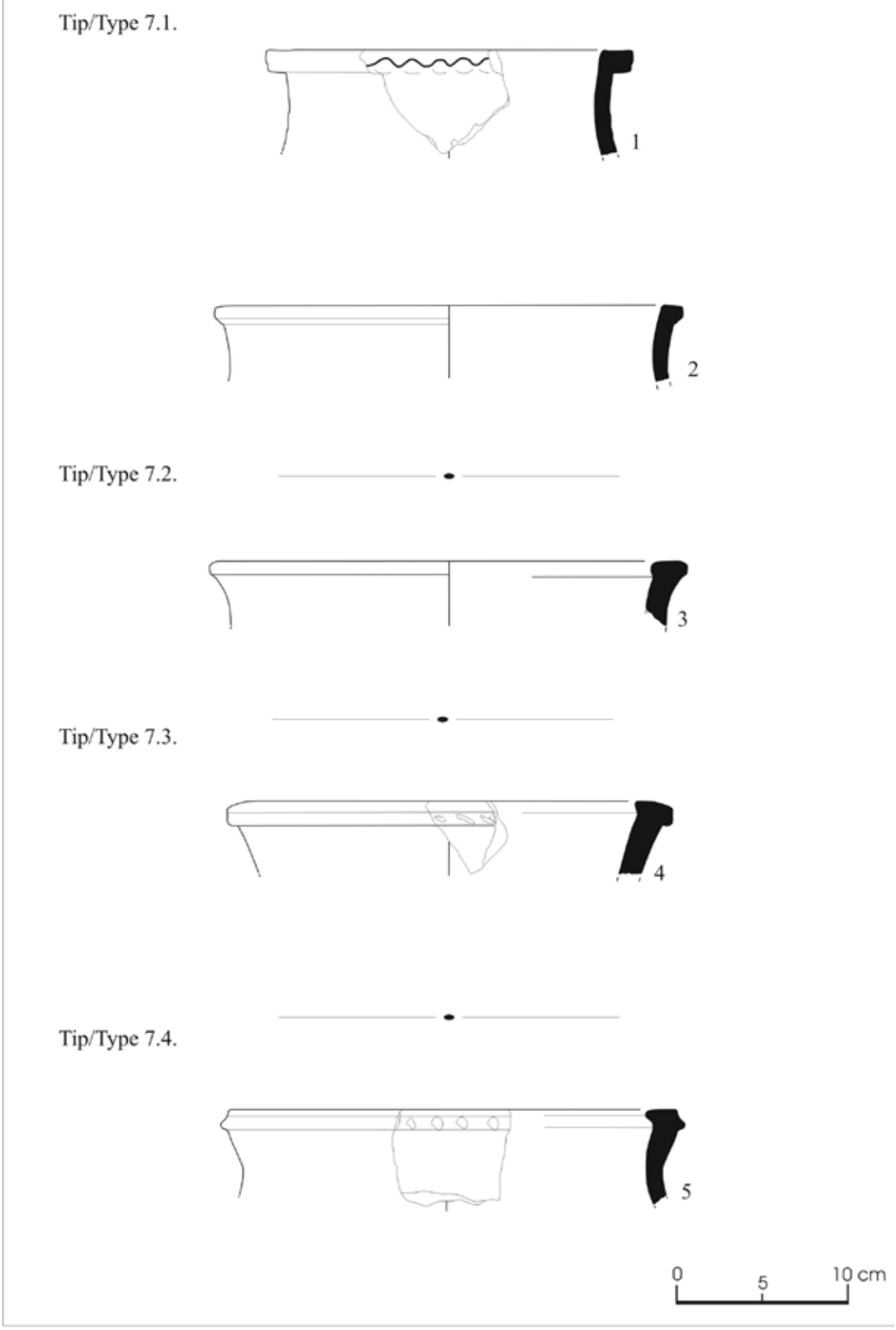
No.	K	T.No	MN/WN
1	B-21	6.6	4
2	B-21	6.6	4
3	B-22	6.7	2
4	B-21	6.8	5
5	B-19	6.9	3
6	B-22	6.10	4


Tip/Type 6.6.
1
2
Tip/Type 6.7.
3
Tip/Type 6.8.
4
Tip/Type 6.9.
5
Tip/Type 6.10.
6
0
5
10 cm

Res./Fig. 122

Res./Fig. 123

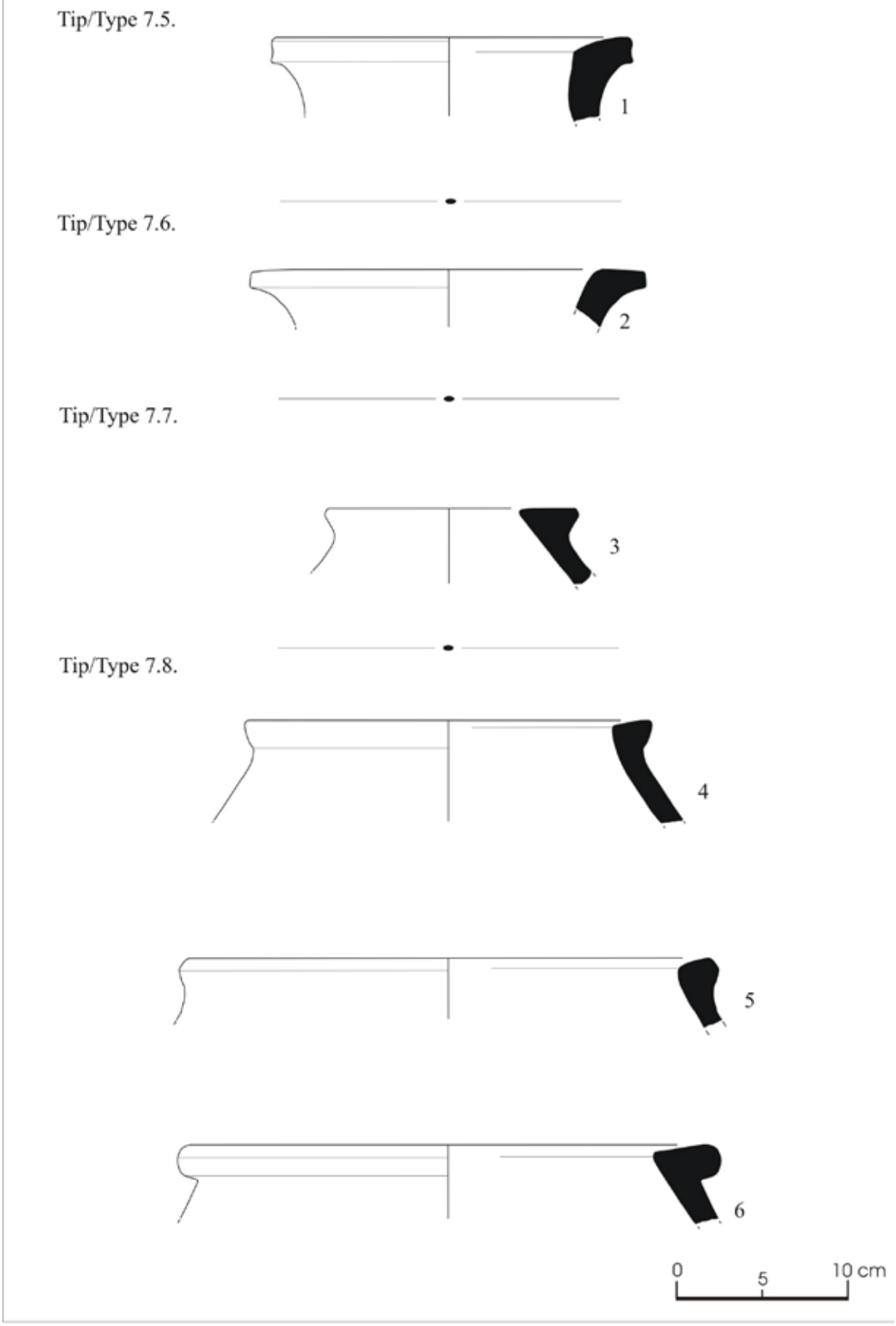
No.	K	T.No	MN/WN
1	B-23	7.1	4
2	B-19	7.1	4
3	B-21	7.2	5
4	B-22	7.3	4
5	B-22	7.4	4



Res./Fig. 123

Res./Fig. 124

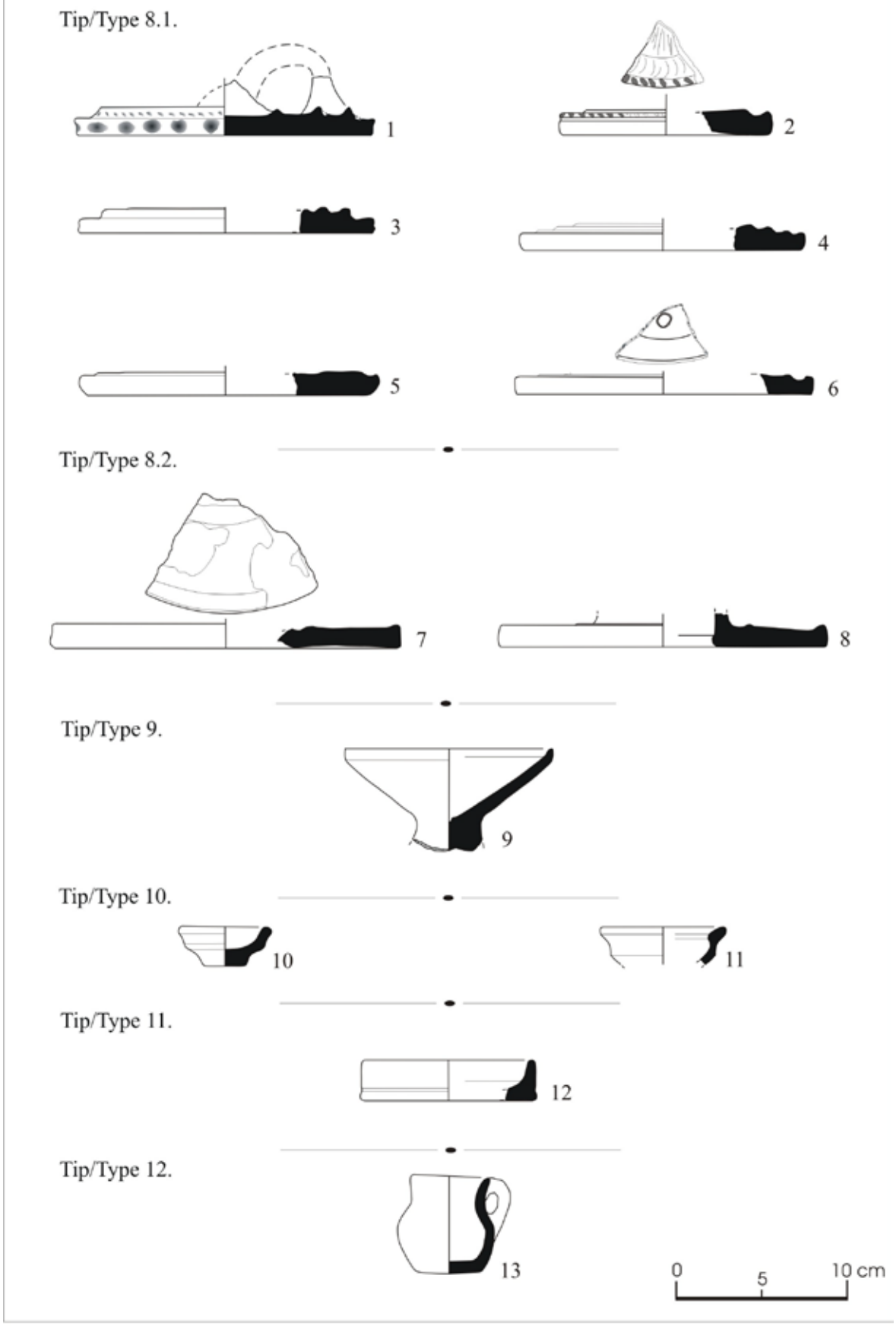
No.	K	T.No	MN/WN
1	B-22	7.5	4
2	B-19	7.6	4
3	B-22	7.7	4
4	B-22	7.8	4
5	B-19	7.8	4
6	B-22	7.8	4



Res./Fig. 124

Res./Fig. 125

No.	K	T.No	MN/WN
1	B-20	8.1	5
2	B-21	8.1	3
3	B-23	8.1	4
4	B-21	8.1	1
5	B-23	8.1	1
6	B-19	8.1	5
7	B-21	8.2	4
8	B-21	8.2	4
9	B-22	9	4
10	B-18	10	9
11	B-21	10	9
12	B-21	11	5
13	C-22	12	4


Tip/Type 8.1.
1
2
3
4
5
6
Tip/Type 8.2.
7
8
Tip/Type 9.
9
Tip/Type 10.
10
11
Tip/Type 11.
12
Tip/Type 12.
13
0
5
10 cm

Res./Fig. 125

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