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Derleyen/Edited by
S. YÜCEL ŞENYURT

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GAZİ ÜNİVERSİTESİ
ARKEOLOJİK ÇEVRE DEĞERLERİ ARAŞTIRMA MERKEZİ

GAZI UNIVERSITY
RESEARCH CENTER FOR ARCHAEOLOGY

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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 President of Gazi University, made important contributions at the award stage and later execution of the project. Prof.

Dr. Ahmet AKSOY and Prof. Dr. Metin AKTAŞ, Deputy Presidents of Gazi University, Prof. Dr. Cemil YILDIZ, Dean of the Faculty of Arts and Science, Prof. Dr. Ergun KASAP, Secretary General of the Rectorate, Prof. Dr. E. Semih YALÇIN, 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. Nadir AVCI, former Cultural Assets and Museums General Director of the Ministry of Culture and Tourism, Mr. İlhan KAYMAZ, Deputy General Director, Mr. Ömer ÇAKIR, Head of the Excavations and Museums Department, and employees of the General Directorate, particularly Ms. Güzen KÖKSAL, 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, General Manager of BOTAŞ, who was generous with his support at the later stages. The BTC Crude Oil Pipeline Project Directors Mr. Hüseyin ERSOY, Mr. H. Doğan ŞİRİKÇİ and Mr. Osman Zühtü GÖKSEL and the pipeline Project Site Director Ms. Burçin YANDIMATA have contributed greatly to execution of the project. Furthermore, Ms. Ebru DEMİREKLER, 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 and Ms. Özgür GÖKDEMİR, 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 study contains the scientific results of rescue excavation works in the frame of Baku-Tbilisi-Ceyhan Crude Oil Pipe Line Archeological Rescue Excavations Project conducted in 3 July–20 November 2003 by the Gazi University – Research Center for Archaeology (GÜ-ARÇED) in Tasmasor 1.5 km east of Çayırtepe (Müdürge) village, central town in the Erzurum city.

The rescue excavation, guided by Mustafa Erkmen, director of the Erzurum Museum, was started with the scientific responsibility of Assist. Prof. Dr. Bora Uysal from the Hacettepe University – Faculty of Science and finished with the scientific responsibility of Assist. Prof. Dr. Yücel Şenyurt from the Gazi University – Faculty of Science. Assoc. Prof. Dr. Selim Erdal from the Hacettepe University conducted the works on human skeletons. Archeologists Hamza Ekmen, Yunus Ekim, Atakan Akçay, Resul İbiş, Belgin Savaş, Göknil Arda, Z. Filiz Bilir, Emsal Koçerdin, İ. Ernur Öztekin, Sibel Akcan, Bedriye Koçak, Gülsüm Şanalır, Elif Yüce, Müge Küçük, Nuran Ökse, Duygu Tuncay, Uğur Abaza, Sıraç Karadağ, Tuba İbiş, Özlem Balkozak, Özgür Giray, Halim Kes, Mustafa Kırdı, Mahmut Polat, O. Hamza Kaycı, Hünkar Keser, Farahnaz Ansari Meşhur and Döndü Topçu, anthropologists U. Güney Arıkan, Serpil Eroğlu and Barış Özener, restorator Emrah Karakurum, geodesy expert instructor Gülşah Beyazoğlu and geophysical expert Assistant M. Özgü Arısoy were participated into the excavation works.[1]

In Tasmasor, in the frame of BTC HPBHP Foundation and Detailed Engineering Stage Works, surface investigations were performed in 2001-2002 by the Middle East Technical University, Research and Application Center for Historical Environment Assets (ODTÜ-TAÇDAM) and Gazi University – Archeological Heritage Management and Administration Unit.[2] Following the surface investigations, due to some technical difficulties, a rescue work was necessitated without changing the route. In this respect, with the permission of Ministry of Culture and Tourism, GenAgel Directorate of Cultural Assets and Museums (previous GenAgel Directorate of Monuments and Museums) and financial aid of BTC HPBHP Directorate, the rescue excavation was started in 3 July 2003 by an excavation team from the Gazi University – Research Center for Archaeology.[3]

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[1] I thank all the team members for their self-denying work during the excavation.
[2] These organizations currently continue for publishing the scientific results of surface investigations..
[3] In the Tasmasor archeological area, Iran Natural Gas Pipeline was previously placed. At the beginning, BTC Crude Oil Pipeline route was planned in parallel to the previous line. In detailed surface investigations, boundaries of Tasmasor archeological area were determined and it was suggested to BOTAŞ that the route should be taken outside of this area. As a result of technical investigations in this

As required by the project, field works conducted in 28-m corridor were completed in about 140 days with all necessary technical documentation and restoration studies.

On the basis of results of detailed surface investigations conducted by GÜ-ARÇED in 2002, the Tasmasor archeological site which was found to cover a large area of 600 x 1000 m dimensions shows two basic integrities as A and B sites. Tasmasor A Site at southeast of area comprises 35 x 40 x 2 m dimensioned small hills and surrounding parts on a limestone lower terrace that is 10-12 m high from the Erzurum plain elevation. B site contains old Tasmasor village ruins and its vicinity at about 250 m northwest of site A. Rescue excavations was performed in a corridor of 650 x 28 m in the site A. Since site B is completely unaffected from the negative effects of pipeline construction activities, no excavation work was carried out there.

Prior to rescue excavations, geophysical, geodesy and grid works were completed. Geophysical studies were performed with proton gradiometer and archeologically sensitive areas were determined before all else. This followed by geodesy works which yield topography of the area and lastly, grid works for 10 x 10 m squaring of the corridor to be excavated.

The findings obtained as a result of rescue excavations conducted in Tasmasor A site indicate the presence of three different archeological integrities. These areas are named as Eastern Excavation Area, Central Excavation Area and Western Excavation Area. In Eastern Excavation Area, stone and foundation remnants of a regular planned architectural complex of a 60 x 28 m area were explored which are dated to Medieval Age on the basis of pottery and other small findings. In Central Excavation Area of 2 m height comprised by a natural rocky part on the hillside, intensely damaged architectural remnants and tombs of the Iron Age and a late period graveyard in an extensively wide area, that demolished some of tombs, were determined. The area 100 m west of the hill where architectural remnants of Iron Age are explored is named as Western Excavation Area.

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respect, suggested route change could not be realized since northern part of archeological site is a swamp area, outer boundary of southern part is very close to Çayırtepe (Müdürge) village and also previous natural gas line necessitated a risky cross pass, and therefore the required route change could not be made. Instead, crude oil pipeline was projected to be placed with a controlled construction activity in the previously area damaged by itself. The last decision is the finishing of archeological rescue works in the projected corridor on the basis of relevant decision of the Erzurum Protection Committee. Following the decision of Protection Committee that is “pipeline can pass”, pipeline construction was completed with controlled studies under the guidance of the Erzurum Museum as well as inspection of archeologists of BOTAŞ and GÜ-ARÇED. In these works, some measures were applied to mitigate the negative effect, such as narrowing of construction area as much as possible, use of light machinery and using of mantle of sand bags.

The architectural findings explored indicate that Tasmasor was settled by the middle Iron Age. Although an Iron Age settlement with at least two stages, tombs of this period and a graveyard of recent period were found on a 2-m high hill, it is impossible to mention of a tumulus there. Instead, it was determined that the settlement on a hillside of Iron Age continues on lower elevations as a flat settlement extending to the west as a single layer in a wide area.

Excavation works conducted in Tasmasor yielded very important information for the Northeast Anatolian region for which limited archeological data are available. Particularly, very important data were obtained for Erzurum and neighboring areas prior to the Iron Age and northwestern part of Northeast Anatolia for the post Iron Age.

Within the Central Excavation Site, the human skeletons explored in the Recent Age necropolis, which destroyed the Iron Age structures on the hilly side, and in Iron Age tombs around the hill were made by Assoc. Prof. Dr. Y. Selim Erdal from the Anthropology Department of the Hacettepe University (See Appendix 1).

PART I
TASMASOR: GEOGRAPHICAL AND HISTORICAL SETTING

S. Y. Şenyurt

A. GEOGRAPHICAL CHARACTERISTICS

Tasmasor is located 7 km northeast of Erzurum, 1.5 km east of the Çayırtepe (Müdürge) village that is contingent on central two, about 2 km north of Erzurum Bypass that connects Pasinler to Ilıca and about 3.5 km east of the road connecting Erzurum to Dumlu and Oltu. The Tasmasor archeological area is named from old Tasmasor[1] village that was abandoned at the beginning of 20th century. 100-150 m north of pipeline route, architectural remnants of that village are well preserved to be easily distinguished from the air photos. Today, Tasmasor site is used as agriculture and pasture field of the Çayırtepe (Müdürge) village **(Figure 8)**.

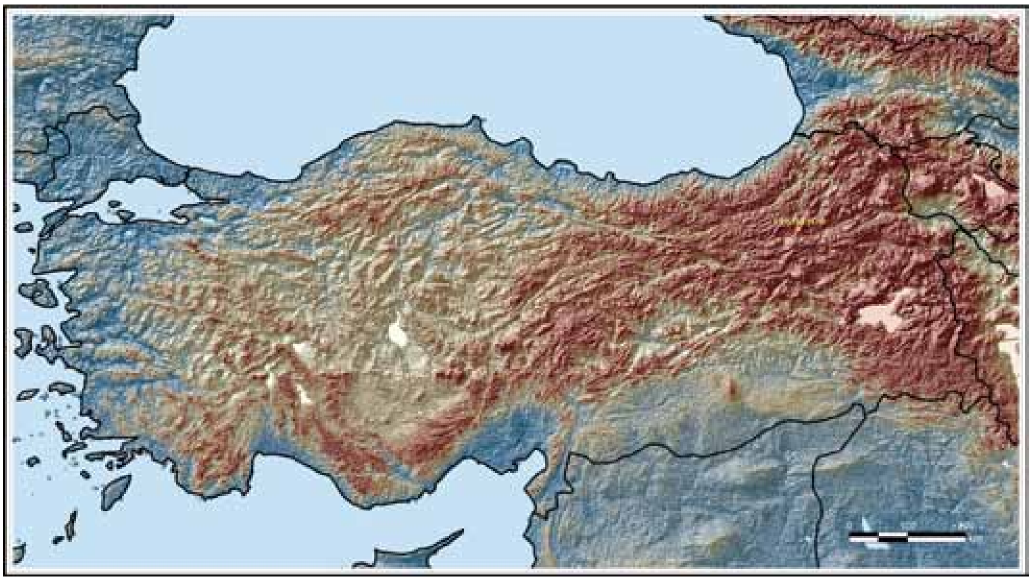

Figure 1: Physical map of Eastern Anatolia and neighboring regions.

In most western edge of the Little Asia continent, the geography, starting from the area where east-west extending mountains are raised and form a dense mass in north and southern parts of the Anatolian peninsula, is called as Eastern Anatolia Region.[2] In this region which is the most mountainous and steepest part of Anatolia, collision of Arabian-Syria block to the Eurasia platform played an important role in formation of

[1] Hewsen (2001: map 169) states the Tasmasor as *T'asmatsor (Tasmosur)*. In the travel book Abbot in 1837, the same village (1842: 207) is mentioned as *Tasmaczor*.
[2] Tarkan 1974: 7.

mountain chains.[3] With this geomorphologic structure, Eastern Anatolia looks like a castle. Physical boundaries of Eastern Anatolia are comprised at east by the Iranian plateau; at west by a line through the high summits of Çimen, Kızıl, Bey, Yılanlı, Gürün, Hezanlı and Derbent Mountains between Erzincan and Sivas; at north by a line starting from the Kızıldağ through the summit of North Anatolia mountain mass consisting of Çoruh-Kelkit mountain chains, Çimen and Pulur mountains, southern slopes of Gümüşhane mountains, Vavuk, Çoruh, Yalnızçam and Cin Mountains; at south by a line starting from the Şakşak mountains at south of Malatya and extending to the east with Hazarbaba, Ak, Haçraş, Sasun and Herekol, and Cudi Mountains that define the border of Iraqi state.[4]

Tasmasor is located in most eastern edge of the Dumlu Plain that comprises the eastern part of Erzurum Plain which is the biggest plain of Northeastern Anatolia. This large plain composing of Aşkale, Ilıca and Dumlu Plains is surrounded with the Dumlu Hill (2963 m) within the Gavur Mountain Mass at north, Eğerli Mountain (2740 m) at south, Turnagöl Mountain (2400 m) at west and Kargapazarı Mountains (3288 m) and Palandöken Mountain (3124 m) at east.[5] The Karasu creek, one of the two biggest branches of the Fırat River starts from the Karaçağıl Mountain within the Kargapazarı Mountains at northeast of this plain and runs toward the west though the northern part of Tasmasor.

Figure 2: Landsat image of Tasmasor and its vicinity.

[3] Sür 1964: 21.
[4] Tarkan 1974: 7.
[5] Sözer 1970: 7.

Figure 3: Büyük Müdürge Swamp on the north of Tasmasor.

The Erzurum Plain comprising an area of about 520 km^2 has a low basement level and therefore, the Karasu River causes some swamp and rushes to form in the plain. The swamp at most eastern part of the plain forms the Big Müdürge Swamp[6] **(Figure 3)** at 2 km north of Tasmasor. There is a cold spring, known as the Tasmasor Çermik at south of this swamp, about 1 km northeast of Tasmasor.

The Çayırtepe creek issuing from the Deveboynu ridges that comprise the southern part of Kargapazarı Mountain and northeastern part of the Palandöken Mountain is divided into two branches on the low terrace in the plain and its eastern branch is known as the Tasmasor creek. This creek borders the west of Tasmasor settlement area.

North and northwestern parts of Tasmasor are opened to the Oltu Plain and although its surrounding areas are covered with alluvium, andesite and basalt lavas and Neogene units at east and south are very close to hillsides of volcanic heights. On the hillside of Kargapazarı plain-facing mountains, volcanic-interlayered upper Miocene sedimentary rocks surround the mountain slope as a 3-4 km wide belt. These sedimentary rocks consisting of marl and clays are white colored and tuff layers are also observed among them.[7] The hill comprising the Tasmasor central excavation area is mainly composed of outcrops where volcanic tuff and agglomerates[8] (volcanic breccia) have not yet been covered with the alluvium.

[6] Sözer 1970: 21.
[7] Sür 1964: 24.
[8] Sözer 1970: 9.

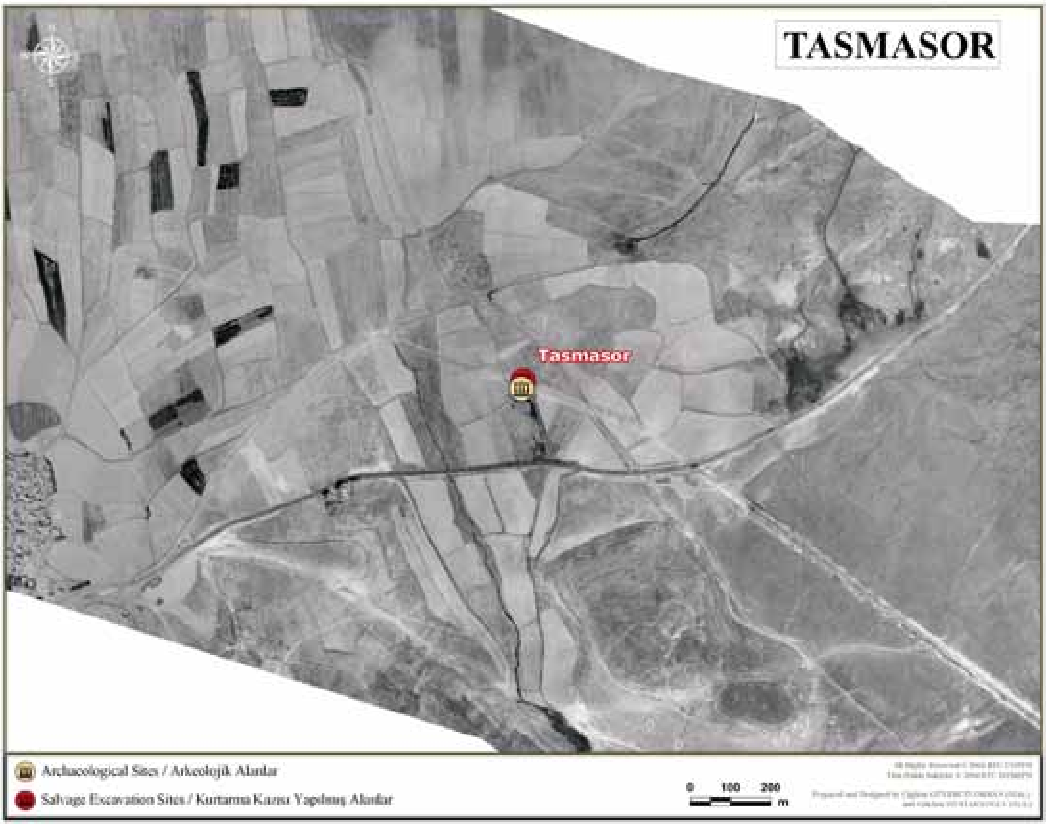

Figure 4: Satellite image of Tasmasor and its vicinity.

Figure 5: Tasmasor and Dumlu Mountains in the distance.

Just east of Tasmasor, slopes of Kargapazarı Mountains which also include Deveboynu volcanic barrier (1950 m) separates the Erzurum **(Figure 2)** and Pasinler Plains. These two big plains were initially included to a single river system and continuation of each other but later, they were separated with the Deveboynu volcanic barrier which was formed as a result of epirogenic activities in Quaternary.[9] Recent railway and roads along the 15-20 m high benches of Hamam and Yıkılgan creeks connect both plains via Deveboynu Pass. Likewise, Tetikom Höyük[10] at just east of Deveboynu and under the Tilkidelikleri ridge is located just next to the road as controlling this geostrategic position.

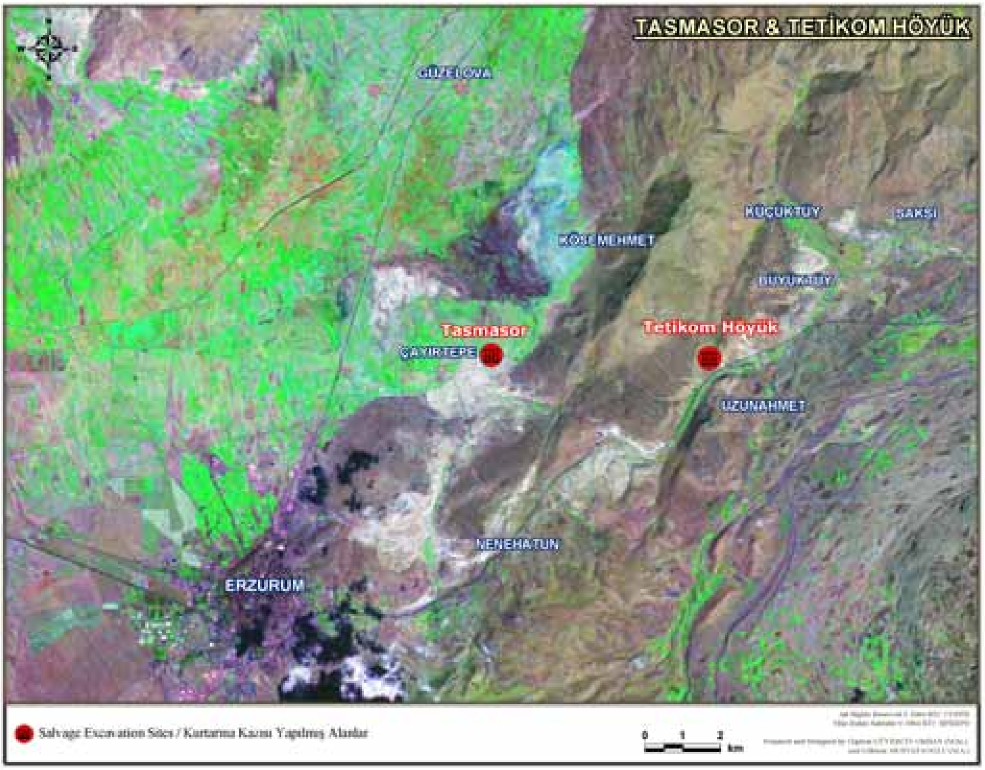

Figure 6: Landsat image of Erzurum area

Recently, the Erzurum Plain is located in the coolest part of Eastern Anatolia.[11] The winter in the region, lasting more than half a year continues to the mid April. The short hot summers indicate that the Erzurum Plain has a "severe inland" [12] climate. In the region, temperature in September-March period is higher in the winter season and

[9] Sür 1964: 33, 39.
[10] In the frame of BTC HPBHP, rescue excavation works were performed in Tetikom. Results of that excavation are prepared for publication by S. Yücel Şenyurt.
[11] Sözer 1970: 11.
[12] Tarkan 1974: 11.

changes from – 5 to -35ºC. Within the certain periods, it is known that warmer or colder seasons were also seen in the past.[13]

Annual average precipitation of the region around Erzurum in the near past is 476 mm as high for spring months which is higher than low depression areas inn other parts of Eastern Anatolia such as Iğdır (272.6 mm), Van (380.7 mm), Erzincan (374.7 mm) and Malatya (363.4).[14]

Figure 7: Flora in Tasmasor area.

Both geographic and climate conditions are very important agents in forming of plant cover on chestnut colored step soils[15] and alluvial soils in the vicinity of the Erzurum Plain. It is known that, on the basis of topographic and orogenesis features, different plant types are grown in alluvial soils at various part of the plain and these soils are very suitable to be used as culture lands[16]. The areas except for alluvial soils in the region are covered with chestnut colored step soils with short grasses that are unique to semi-hot climate zones. Since region is below the forest sub-boundary, there is no

[13] Sözer (1970: 14) states that the presence of these periods is determined with the Gumbel method.
[14] Sözer 1970: 15.
[15] Sözer 1970: 25.
[16] Sözer 1970: 26.

forest area in the vicinity of plain. Although the presence of forest areas in eastern parts of the Palandöken mass is known in the past, it is though that they have been extinct due to destruction of forests in time. Meanwhile, it is suggested that climate conditions in the region are not suitable for forest development. At recent time, poplar, willow, wild oleaster (Hippophae rhamnoides) and medlar (crataegus) trees and brushwood are not common.[17] Among the agricultural plants of alluvial soil, wheat, barley and rye (% 92) are important. The main income of Erzurum plain and neighboring areas is agriculture and stock rising ranks the second.[18]

Considering the plant cover in the narrower geography around Tasmasor, salty-alkali soils of Müdürge swamp are very important[19]. Rush and canes growing around this swamp host hunt animals such as dug and goose and are also used as fuel in winter but may cause malaria due to abundant mosquito during the summer.[20] Such a system is not suitable for development of plants. However, in the vicinity of Tasmasor, fields where dry agriculture is made are also rarely observed at relatively high areas.

Figure 8: Erzurum Plain (animal herds in front and Çayırtepe Village at the back).

[17] Sözer 1970: 26-27.
[18] Saraçoğlu 1956: 319.
[19] Sözer 1970: 26.
[20] Saraçoğlu 1956: 318.

B. *HISTORICAL SETTING*

As shown topographic and geomorphologic characteristics outlined above, the region of Tasmasor is geostrategically very important. The natural pass that connects the Erzurum Plain to the Pasinler Plain is just south of Tasmasor. This natural pass that rises with a lower slope from the Pasinler Plain to the Hamam creek **(Figure 2, 9)** extends towards Erzurum at west from the Nenehatun ridges and towards Tasmasor and then Oltu at north.

Deveboynu volcanic barrier acted as a natural border particularly in the late Iron Era separating different administrative integrities. This barrier resembles the Abos Mountain in antic sources.[21] It is believed that borders of 10th (*Media*) and 13th (*Armenia)* straps during the Darius (A.D. 522-485) period and the borders of 19th (western Armenia) and 18th (eastern Armenia) straps during the Kserkses (A.D. 485-465) and Artaksarkses (A.D. 464-425) periods were separated by the Deveboynu barrier.[22] In this respect, this barrier acted as a natural set to separate geographic integrities of two big and important plains and hinterlands of the Northeast Anatolia. The eastward-running Aras and westward-running Karasu rivers that are issued from Kargapazarı mountains just north of Deveboynu ridge should have fed these geographic integrities and probably facilitated them to have their own cultural and administrative structures. To the east from Devboynu, the region was open to effects of northwestern Iran and Trans-Caucasus via Pasinler Plain and Aras river. Likewise, the fact that 10th strap of Darius period became the Median strap may support this idea. Although the geographic integrity extending to the west via Erzurum plain and Karasu is on the roads providing access to central Anatolia and Black Sea, the region shows strong relations with the northwestern Iran and Trans-Caucasus via Aras valley. This is attributed to the fact that the Deveboynu barrier is not an untraversed barricade to form a separate geography, but it provides a pass that is easily traversed.

The Deveboynu pass and geographic areas at its both sides are geostrategically very important for east-west connections via the Karasu river and its closeness to natural passes and routes towards north and south. The Akveren pass at southwest of the Pasinler Plain and the Tahir pass at east are important places connecting the region to the south. In the Erzurum Plain, there are two important natural routes; the one at east comprising valleys at west of Kargapazarı mountains and the Tortum creek provides access to the Kolhis region at north and the second at west comprising the Kop pas through Aşkale provides access to Bayburt and Trabzon.

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[21] Sagona C. 2004: 49.
[22] Sagona C. 2004: 50-51.

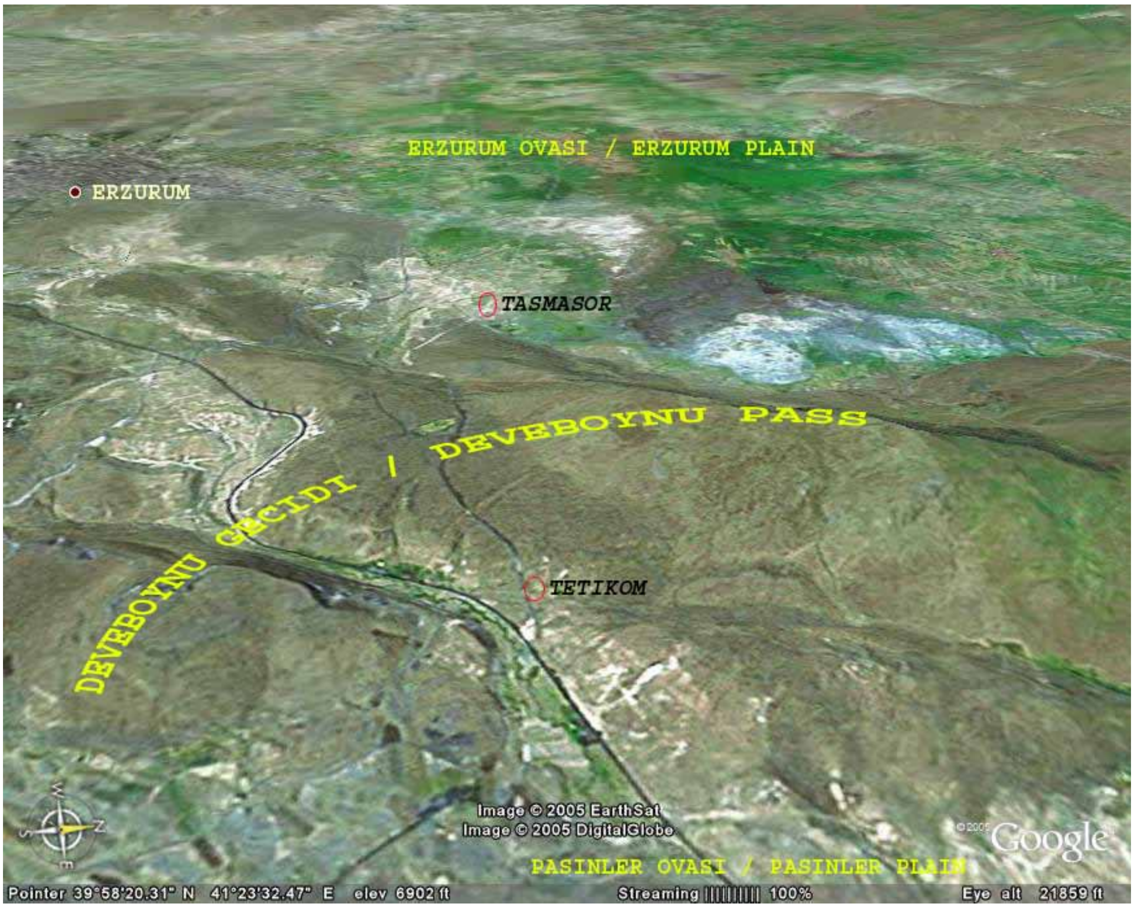

Figure 9: Deveboynu Pass that connects the Pasinler and Erzurum plains.

In the Erzurum region which comprises an important transit point in Trans-Caucasus and Anatolia culture geography, there are several archeological centers that were witnessed a continuous settlement by the late Chalcolithic age. The excavations conducted in Sos Höyük[23] and Bulamaç Höyük[24] in the Pasinler Plain and Karaz,[25] Pulur,[26] and Güzelova[27] in the Erzurum Plain yielded important archeological data on the history that goes back to Chalcolithic Age in the vicinity of Erzurum.

The oldest written records of the Erzurum region are encountered in the Hittite sources. Although the exact borders of the Azzi-Hayasa countries are not clearly known that are mentioned in the yearbooks of the Hittite king Mursili, they are generally localized to Erzurum and its vicinity.[28] It is still controversial that the two names given as Azzi and Hayasa represent two different political powers governed by a single king

[23] Güneri 2002:1-58; Sagona et al. 1996: 29.
[24] Güneri et al. 2003: 249-258.
[25] Koşay and Turfan 1959.
[26] Koşay and Vary 1964.
[27] Koşay and Vary 1967.
[28] Garstang and Gurney 1959, 36-38; Herzfeld 1968: 119; Macqueen 1986: 46-48, 54, 78; Yakar 1992: 508; Yakar 2000: 431; Sagona C. 2004: 27-28.

or they represent a political power in the form of tribe confederation settled on two different geographic regions.[29]

Among the early sources lightening the historical geography of Northeastern Anatolia together with Hittite sources, Assyria king yearbooks have an important place. When the northerly military expedition, in the second year of I. Tiglat-Pileser's power (B.C. 1114-1076), is mentioned, the region was named as the Haria[30] country held by Hurri.[31] In the third year of the same king, the Daiaeni kingdom that is mentioned in the military expedition to the Nairi countries was connected[32] to Diauehi that is mentioned in Urartu sources and localized to Erzurum and its vicinity. The Daiaeni[33] country is also mentioned in third and fifteenth military expeditions of III. Shalmanaser (B.C. 858-824). However, since the relation between Daieni and Diauehi is not clear[34], this localization suggestion is still under debate. However, in addition to Daieni, several other small kingdom and countries mentioned in Hittite and Assyria sources indicate that at the end of 2[nd] thousand years B.C., Northeastern Anatolia was divided into many small politic organizations with no stable borders.

According to Hittite and Assyria sources, written sources of Urartus reveal more understandable information. The first Urartu military expeditions to the Northeastern Anatolia started in the Ispuini (B.C. 830-810) period. The Yazılıtaş writings of Urartu king Menua (B.C. 810-781) found in east of Pasinler are very important to show the dominancy of Urartus in the region. The Diauehi country mentioned in this writings is localized to Erzurum and its vicinity.[35] However, the borders of Diauehi country have not been clearly defined. Some researchers[36] want to see the Pasinler plain and Aras valley as the center of Diauehi country while others[37] claim that the region until Erzurum plain and Tercan is the center of this country. Some workers[38] state that the region from Erzurum to the Çoruh valley to the north is the Diauehi country while some[39] the region from the Muratsu valley to the Malazgirt-Muş-Bingöl and some others[40] accept the region starting from east of Horosan to Sarıkamş ve Kars areas.

[29] Herzfeld 1968: 119; Yakar 2000: 430-431.
[30] Luckenbil 1926: 78.
[31] Luckenbil 1926: 78.
[32] Sagona C. 2004: 30-35.
[33] Luckenbil 1926: 219, 241.
[34] Russel 1984: 187; Burney and Lang 1971: 137.
[35] Russel 1984: 186; Işıklı 2000: 49-72; Sagona C. 2004: 33-35; Köroğlu 2005: 101.
[36] Sagona C. 2004: 35.
[37] Burney and Lang 1971: 136; Çilingiroğlu 1982: 192; Işıklı 2000: 55-56 and dipnot 20.
[38] Diakonof and Kashkai 1981: 25-27.
[39] Barnett 1982: 330; Russel 1984: 185.
[40] Belli and Ceylan 2002: 124.

Following the demolishing of the Urartu kingdom, Erzurum and its vicinity were ruled out by Med, Akemenid-Persian and the Roman Empire in antic age. With a confusion period resulting from southwest spreading of Kimmer ve Iskits, the Urartu state was removed[41] and later, an intermediate stage was taken place, which is stated by some scientists as the "dark age following the demolishing of Urartu"[42] and could not be sufficiently clarified by the written sources and archeological data. In addition to invasion of northern tribes, it is also known that Meds, who rapidly widened with the powering of Kyakseres (B.C. 633-584) in northwest Iran, threatened Eastern Anatolia by B.C. 625. Likewise, in B.C. 590, Medians invaded Van and reached to Kızılırmak river. There is little information on the presence of Med in Eastern Anatolia.[43] The place names of Madani, Amadan, Namdanu and Matiati, that are believed to be in Eastern Anatolia and mentioned in Assyria sources of B.C. 13-9th centuries, are connected to Meds. It is suggested that the name of Matieni which is mentioned in expedition of I. Asurnasirpal (B.C. 1047-1029) to the northern Dicle[44], is an Eastern Anatolia confederation connected to Meds culturally. Moreover, on the basis of similarity of Matieni to Madani that was previously mentioned in Assyria sources given to Aras valley, it is also connected to the same region.[45] Meanwhile, the fact that Herodot used the names of Matiene[46] and Media[47] for the regions close to the Çoruh valley may support this suggestion.[48] In this respect, it is understood that Matiene was an important region at west of Med country.

After the demolishing of the Median State by the Akhemenid dynasty, Eastern Anatolian region was ruled out by the Akamenid-Persian power. Erzincan-Altıntepe region yields important archeological data on Northeastern Anatolia in this period. Historical geography of the region is mainly based on information obtained from Herodot and Xenofon. On the basis of then fact that the Deveboynu barrier between Erzurum and Pasinler is thought to be the equivalent of antic Abos mountain, it is believed that borders of 10th (*Media*) and 13th (*Armenia)* straps[49] in the Darius (B.C. 522-485) period and 19th (western *Armenia*) and 18th (eastern Armenia) straps[50] in the Kserkses (B.C. 485-465) and Artaksarkses (B.C. 464-425) periods are separated by the Deveboynu barrier[51]. Meanwhile, Altıntepe is suggested to be center of 19th strap.[52]

[41] Burney and Lang 1971: 171; Sagona C. 2004: 77.
[42] Burney andLang 1971: 173.
[43] Sagona C. 2004: 42.
[44] Luckenbil 1926: 154.
[45] Sagona C. 2004: 42.
[46] Herodot III: 94.
[47] Herodot I: 104.
[48] Sagona C. 2004: 43.
[49] Herodot III: 92-93.
[50] Herodot III: 94.
[51] Sagona C. 2004: 49-51.

Altıntepe[53], where the presence of Akamenid is proved with archeological and ceramic findings, and the 10th strap, which was the Median strap during the Darius period and given to the east of Pasinler, are believed to be important data proving the presence of Akamenid around Erzurum.

It is suggested that the route extending from east to west via Aras and Karasu valleys is the Median Road and King Road that are mentioned in ancient sources.[54] This suggestion is based on the stone-floored antic road[55] that was found in 1999 in surface investigations in Pasinler. In this respect, for the return road of Xenofon, the army coming from the south reached to Pasinler plain via the Akveren pass and continued to the west through the Deveboynu pass.[56]

Following the retreating of Persians, although Erzurum and its vicinity were affected from the political results of Alexander the Great's eastern expedition, it was not one of the regions dominated by the Hellenistic culture but local cultures such as Urartu, Med, Akamenid/Persian and Armenia preserved their culture in the region. In the Roman period, Satala near Kelkit was one of the garrisons of Roma. In the late Roman period, Erzurum (Theodosiopolis) was focus of attention and it was a pioneering city for defending eastern border of the Roman Emperor against Sasanis. In the Byzantine period, Erzurum was one of the Armenian bishops.[57] With the spreading of Seljuks in Eastern Anatolia with the Malazgirt war (1071), Erzurum and its vicinity were governed by Turks. Following the Malazgirt war, Erzurum was occupied by Saltuks.[58]

Within the frame of historical geography of Erzurum and its vicinity outlined above, Tasmasor is the focus of attention with archeological data on Post-Urartu, Med, Akamenid/Persian and Middle age and particularly with archeological data on the late Iron Age which are less known in Northeastern Anatolia.

[52] Summers 1993: 96.
[53] Summers 1993: 85-108.
[54] For detailed information see Sagona C. 2004: 312, 319, 321-323.
[55] Sagona C. 1999: Fig. 1; Sagona C. 2004: 309.
[56] Sagona C. 2004: 301-311.
[57] Sagona C. 2004: 93.
[58] Sinclair 1989: 281.

Part II
TASMASOR EXCAVATIONS, 2003

S. Y. Şenyurt

Tasmasor was first discovered in 2001 during the surface investigations conducted by ODTÜ-TAÇDAM in the frame of BTC Crude Oil Pipeline Project Detailed Stage works[1]. In 2002, Gazi University – Archeological Heritage Management and Administration Unit carried out a detailed surface investigation in Tasmasor. In that study, a systematic pottery collection work was made considering the distribution of especially settlement and graveyard findings that are distinguished on the in the archeological site.[2]

Due to technical reasons, the route to be affected from the construction works of BTC Crude Oil Pipeline was arranged as a 28-m corridor. Therefore, excavation in the Tasmasor archeological site was favorable only in the 28-m corridor and excavation plan was made accordingly. A grid system also including this corridor was placed on the topographic map that was obtained as a result of geodesy studies in Tasmasor **(Figure 1-2)**. In this respect, the 28-m corridor was divided into squares of 10 x 10 m which are represented with A, B, C letters in N-S direction and 1-50 numbers in E-W direction. However, since only 10 x 8 m part of squares in C line are affected from the construction works, archeological excavation studies were conducted in 10 x 8 m part of these trenchs. As required by the technical contract of BTC Crude Oil Pipeline Project, since no construction and archeological excavation is permitted except for 28 m, the upper soil that is also described as agriculture soil obtained from the archeological excavation and lower soils had to be stored separately and therefore, archeological excavation could not be conducted in some areas.[3] In this respect, in 28-m corridor of the Tasmasor archeological area that is affected from the pipeline construction works, excavations were performed in total of 30 trenchs of 10 x 10 and 11 trenchs of 10 x 8 m.

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[1]This information was obtained from the report that was submitted by ODTÜ-TAÇDAM to the BTC Crude Oil Pipeline Project Directorate.

[2]The results of detailed surface investigation conducted by the Gazi University were mentioned in the study that contains the scientific results of surface investigations carried out by GÜ-ARÇED and an article entitled “Iron Age settlements around Erzincan and Erzurum found in the frame of BTC Crude Oil Pipeline Project”. This study is still in review.

[3]Since no route change was made after the archeological excavation, in order to protect the architectural remnants explored from the possible damage of pipeline construction, this soil was refilled and the area retransformed to its old status. In addition, no work machinery was allowed on the soil storage sites and thus, archeological texture under the soil was protected from possible damages.

Before starting the excavation works and during the excavations, geophysical works were carried out to confirm that no architectural remnant was under the alluvium in the 28-m corridor and in areas where particularly no pottery pieces were detected on the surface. The accuracy of data obtained with Proton Gradiometer were also tested with various sondages.

Figure 1: Aerial photo, topographic map and grid system of Tasmasor.

As mentioned above, in geophysical studies, which were directed to areas of less archeological sensitivity, no anomaly was encountered under the soil that was also confirmed withy sondage works. However, geophysical studies, performed in the area of B-27 and B-28 trenchs where limited number of potteries is found at 30 m west of hill that comprises the central excavation area with intensive pottery pieces, revealed anomalies of a water network constructed with p.t. pipes which was also confirmed by sondage works.

In order to test the results of geophysical studies, a total of 15 different sondages of varying dimensions (1 x 1, 3 x 2, 5 x 2 and 9 x 5 m) were opened in Tasmasor. Sondages which yielded no archeological findings were mostly deepened to the bedrock and if the bedrock is deeply seated, holes were generally deepened 2 m. Among the Sondage holes, architectural remnants of Iron Age were determined in no 8 of 5 x 2 m that comprises the B-21 and B-22 trenchs and Sondage no 9 of 5 x 2 m that comprises the B-14 and C-14 trenchs and therefore, archeological works in these areas were widened in 28-m corridor. As the geophysical and excavation works were progressed, the archeological area in E-W extending 28-m corridor in Tasmasor was thought to be evaluated in 3 different integrities as Eastern Excavation Area, Central (Hill) Excavation Area and Western Excavation Area.

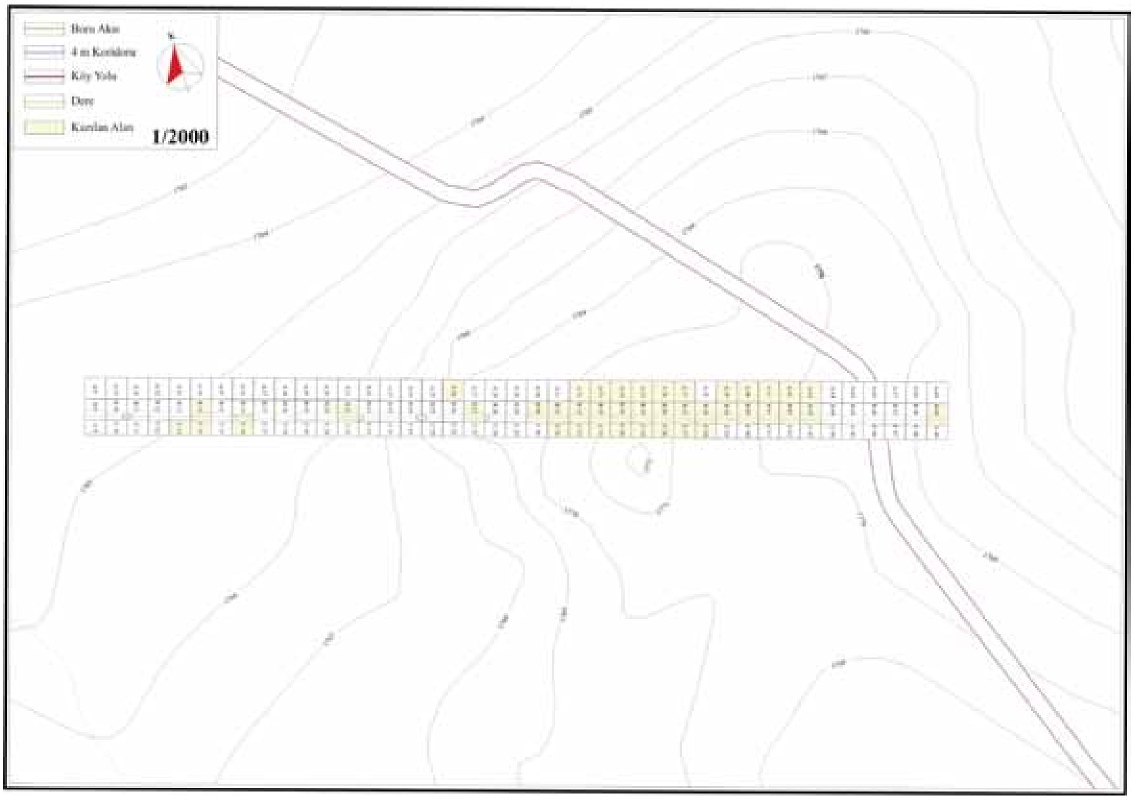

Figure 2: Topographic map and grid system of Tasmasor.

Eastern Excavation Area

Excavation and sondage works conducted in eastern part of 2-m height in Tasmasor were evaluated in the integrity of Eastern Excavation Area. In B-49 trench at most eastern part of the 28-m corridor where less number of potteries are found, no archeological finding was observed and therefore a sondage work of 9 x 5 x 2 m was performed on this trench (Sondage no. 1). Although a depth of 2 m was drilled, no archeological finding was observed.

Figure 3: Eastern Excavation Area and Sondage no. 3.

In A-39 – A-43 and B-39 – B-41 trenchs, a Medieval Age structure complex was found that yields a regular architecture plan whose stone foundations and partly stone floorings are preserved. This complex is composed of a rectangular-planned, long structure and an interconnected square-planned place at east. In studies conduced at southern part of structure complex, although no other architectural finding was observed, it was further checked with sondage works if there is any architectural finding in the lower levels. In this respect, first a 9 x 5 m and then 1 x 1 m holes were opened in the B-43 and B-43 trenchs (Sondage nos. 2 and 3) to a depth of 2 m. Results indicate that there is no architectural finding at southern part of this structure of Medieval Age.

Under the Medieval Age structure complex at this area, two burials of Iron Age were found; one is a simple burial (M-66) in the A-40 trench and another is a pithos burial (M-80) in the A-39 trench. In addition to M-66 and M-80, no other burial was found in the Eastern Excavation Area. These burials should belong to a burial group of Iron Age that is mostly observed in eastern part of Tasmasor Central (hill) Excavation Area.

Central (Hill) Excavation Area

In Tasmasor, the slightly hilly area of 100 x 80 x 2 m at southeastern part of the archeologically sensitive area that is called as the A Area in surface investigations comprises the Central (hill) Excavation Area. This hill is 2-3 m above the colluvium that flowed from slopes at east and south and its upper section is composed of partly compacted Pliocene tuffs.[4]

Figure 4: A view to Eastern Excavation Area from the Central Excavation Area.

In the Central (hill) Excavation Area, excavation works were conducted in a total of 23 trenchs as A-32 – A-37, B-30 – B-38 and C-31 – C-38. In these works, a culture fill was found on the hill with a thickness of 25-30 cm at west and 60-70 cm at eastern side. Thus, this hill, which was previously believed to be a small and flat tumulus, actually contains a graveyard of near past period and an Iron Age settlement established on a volcanic tuff deposit.

[4]In a geomorphologic work on the Pasinler Plain (Collins et al. 2005), geomorphology around Erzurum was studied in detail.

Most part of the hilly area comprising the Tasmasor Central (hill) Excavation Area is almost covered with a graveyard of near past period. Graves explored resemble Christianity burials considering particularly lying directions and joining of hands on the waist. Partly undisturbed wooden remnants determined in some of burials may indicate that this graveyard belongs to a quite recent period.[5]

Figure 5: A view from the antropological works

In particularly eastern part of the hill, some architectural remnants were found which are extremely damaged by the late period graveyard and only stone foundations and stone floorings are partly preserved. The preserved parts reveal that there are three different structure complexes in this area. The first is the A structure in A-35 and A-36 trenchs with relatively preserved stone foundations, the second is the B structure in B-36, B-37 and C-37 trenchs with less preserved stone foundations and the third is the C structure in B-34 – B-35 and C-34 – C-35 trenchs with quite less preserved stone foundations and stone floorings.

[5]Dating studies on wooden remnants taken from these burials have not been completed yet. See Appendix 1 for more detailed information on these burials and skeletons explored.

Figure 6: Iron Age structures and recent period burials in trench A-35.

Inside and mostly outside of structure remnants of the Iron Age, several depots or garbage holes of varying sizes were found that are carved into the volcanic tuff. These holes have diameter of ranging from 40 cm to 1.20 m and depth of ranging from 40 cm to 3.80 m.

Figure 7: A view from the eastern part of Central Excavation Area.

Figure 8: A deep depot hole in B-36 trench.

The hole found in B-36 trench that was previously though to be garbage hole with a depth of 5 m was determined to be a depot hole. In Late Iron Ag, similar deep depot holes are found in Van-Karagündüz Tumulus excavations.[6]

Figure 9: A view of M 2 under the Iron Age foundations.

[6] Sevin et al. 1999: 852.

In studies conducted in Central (hill) Excavation Area, Iron Age burials were found. Some of these burials which show two different burial types as simple burial or cubic burials are found under the stone foundations of overlying the Iron Age structures. This inconvenient position between the architecture and burials may indicate that these burials belong to an earlier stage of the Iron Age. Due to intense destruction of late period burials, positions of some of burials are very important to indicate the presence of at least two different stages, although it is difficult to make a stage distinction among the architectural remnants.

Figure 10: Animal and human skeletons accumulated together.

In a level just below the stone flooring of Iron Age in B-37 trench, a hole was found in which human and animal skeletons are accumulated together. This indifferent attitude of people who settled there at a later stage of the Iron Age may indicate the presence of a large time gap between the two stages.

At the Central (hill) Excavation Area, in addition to burials of an earlier stage of the Iron Age, burials of most probably late stage period were also observed.

Western Excavation Area

A-26, B-14, B-16, B-21, B-27, C-13, C-14, C-16, C-21 and C-27 trenchs in western part of Tasmasor Central (hill) Excavation Area comprise the Western Excavation Area. In order to determine archeologically sensitive areas within the westerly extending 38-m corridor, geophysical and sondage works were carried out. Considering the surface findings, the sondage works at the western edge, in which a little amount of ceramic pieces were obtained, were designed on the basis of 4-m wide narrow corridor that was directly threatened by the pipeline construction works. Since the pipe axis passes through the borders of B and C trenchs, 1-m sondages were conducted on this axis to test all the western area at south of B trenchs and north of C trenchs. In this respect, since architectural remnants were found in sondages opened in B-27 and B-28 with C-27 and C-28, B-21 and B-22 with C-21 and C-22, B-16 and C-16, B-14 and B-15 with C-14 and C-15 trenchs, excavation works were widened to include these trenchs. In addition to them, no architectural finding was observed in sondages of 2 x 4 x 2.5 m in the area where, from east to west, B-24 and B-25 with C-24 and C-25, B-10 and B-11 with C-10 and C-11 trenchs are coincided and 3 x 2 x 1.5 m in B-9, B-7, B-5, B-3 and B-1 trenchs.

In A-26, B-27 and C-27 trenchs in eastern part of Western Excavation Area, about 30 m west of Tasmasor hill, discharge pipes of tiles of a water network and two network distribution mechanisms, one is made of pots and another is made of basalt, were explored.

Figure 11: Medieval water network in western excavation area.

A discharge pipe consisting of coarser tiles in B-27 trench, which transports the water at southern hills of Tasmasor to the Medieval Age settlement at northwest, is divided into two parts with a basalt-made, in-situ moved water distribution mechanism that is perforated at three sides. Northwest and northerly extending thinner discharge pipes that are formed by integration of tiles are evident for the presence of Medieval Age structures that are separate from each other at north. The presence of this water network may indicate that the water in the swamp at northern Tasmasor is undrinkable and thus drinking water is supplied from hills at south.

Another architectural finding in the Western Excavation Area was found during the sondage work conducted at 5 x 2 x 1 m in the area where B-21 and B-22 with C-21 and C-22 trenchs are intercepted. In order to explore the structure of foundation remnants of regular stones which were encountered in that sondage, studies were continued in B-20 and B-21 trenchs. In these trenchs, a structure was found (D structure) whose southern section is intensely damaged but the wall of 2 m at northern part is partly preserved. Pottery findings obtained yield that this structure belongs to Iron Age.

Figure 12: Structure D in B-20 and B-21 trenchs.

After the finding of scattered stone pieces in 5 x 2 x 1 m sondage works in B-16 and C-16 trenchs, more detailed works were conducted in these trenchs. However, these scattered stones explored in these works are thought not to belong to any structure.

The most important architectural integrity found in the Western Excavation Area works was encountered in 5 x 2 x 1 m sondages that are opened in the area where B-14 and B-15 with C-14 and C-15 are joined. Most part of the structure complex, whose well preserved stone foundations and stone flooring are partly explored, is mainly in C-14 trench and with the discovery of its western extent, excavation works were widened to C-13 trench. On the basis of pottery findings in these three trenchs, this structure was though to belong to the Iron Age and was named as the E structure.

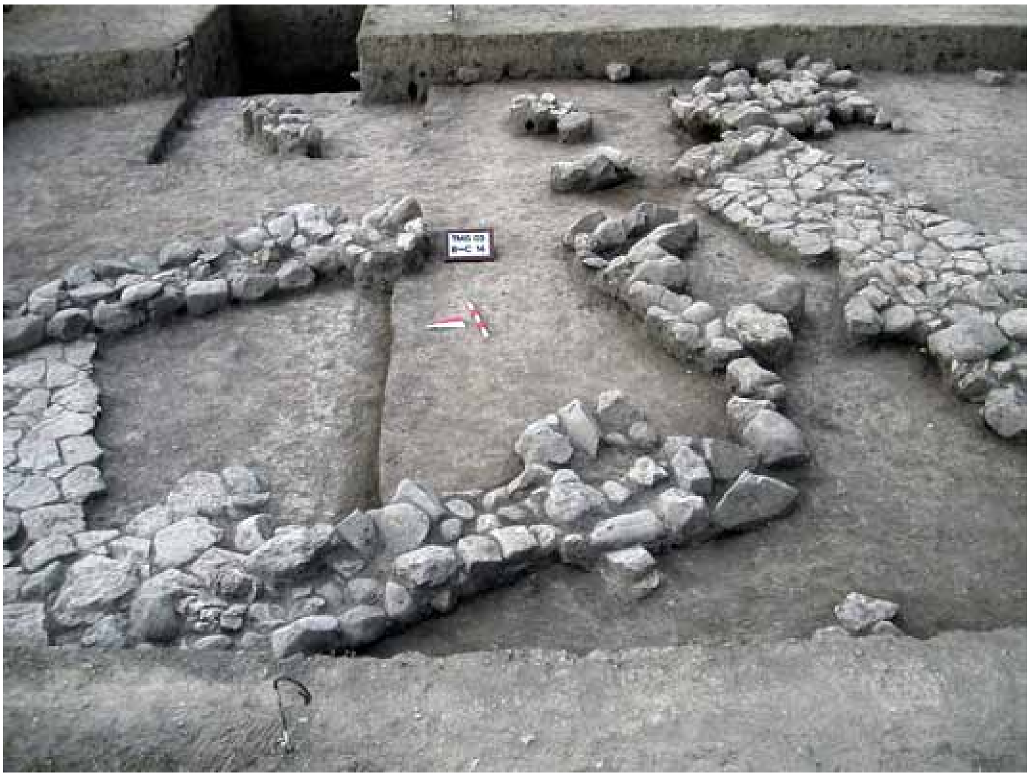

Figure 13: Structure E in B-14, C-14 and C-13 trenchs

Studies in Western Excavation Area were continued with geophysical and sondage works in order to determine the western extent of Tasmasor archeological area in the 28-m corridor. In this respect, along the 120-m long corridor at west of E structure, six different test Sondages of 3 x 2 x 2 m were opened in a 20-m spacing. Test studies indicated that Tasmasor archeological area in this part of 28-m corridor does not extent to the west of E structure.

PART III
TASMASOR IRON AGE ARCHITECTURE

S. Y. Şenyurt

In excavations works conducted in the frame of 28-m route of BTC Crude Oil Pipeline at areas where archeologically sensitivity was determined with surface investigations, geophysical works and control drillings, Iron Age architectural remnants were found at Central (Hill) and Western Excavation Areas of Tasmasor. Stone foundations, stone floorings, silo and garbage holes have been survived from this ancient architecture. Excavation works conducted in a wide area in the 28-m corridor revealed the presence of two different settlement areas one in the Hill Area and another at the plain level 100 m west of former. Although those at the Hill Area is extremely destructed by the late period graveyard, remnants explored at both Areas show similarities with respect to material, construction technique and plan characteristics. However, although pottery findings indicate that these two settlements belong to the same period of Iron Age, they were built at different stages.

The relationship between the settlement and Iron Age burials, found in the vicinity of structures at the hill Area and below the stone foundations of structures, could not be clearly determined. On the basis of available data, these burials that belong to older periods might be derived from Iron Age structures at the western Excavation Area. In addition, another Iron Age burials found in within the stone foundation remnants of D structure in the western Excavation Area indicates that a stage younger then the present structures there was taken place in Tasmasor. Similarly, two Iron Age burials explored in the vicinity of Medieval Age structure at the Eastern Excavation Area are noticeable with their isolated positions. Pottery and small findings yield important data on the relation between Iron Age settlement areas and burials in different parts of Tasmasor.

CENTRAL (HILL) EXCAVATION AREA

The culture fill in the alluvium at the hill Area that is comprised by a volcanic tuff deposit of 100 x 80 m dimension and 2 m height has a thickness of 20 cm to 1 m. Structures, burials, silo and garbage holes of the Iron Age were found on the bedrock of this hill, that was used as a graveyard during the late period. Iron Age structures partly preserved from the destruction of late period burials are particularly concentrated on eastern part of the hill. Architectural remnants of the Iron Age are extremely destructed by the of late period burials and stones used in foundations are found as scattering all around.

Figure 1: General Plan of Iron Age arrchitectural remains on the Central (Hill) Excavation Area.

Figure 2: Iron Age Architecture of the Central (Hill) Excavation Area and destruction of late period burials.

Figure 3: Destruction of late period burials in western part of Central (Hill) Excavation Area.

At the western side of the hill, there is no architectural remnant to indicate any settlement. The fact that bedrock is encountered just below the fine agriculture/culture soil at the surface **(Figure 3)** may indicate that the absence of settlement. Likewise, most of pottery[1] pieces found at hill side excavations are obtained from the eastern part.

Figure 4: Destruction of late period burials in A-33 trench at western part of Central (Hill) Excavation Area.

Three different structure complexes were determined, namely A, B and C Structures, in A-35-36, B-34-37 and C-34-35, 37 trenchs at eastern part of Tasmasor hill side.

STRUCTURE A

Considering the preserved stone foundations, the structure explored in A-35 and A-36 trenchs consists of four places. Architectural remnants obtained from both trenchs have similar material, technique and plan characteristics. The eastern part of structure is comprised by an open courtyard (Place 1) that is accessed at east with 1.68 m wide trench. At northwest of A-36 trench, partly preserved, N-S extending a thick wall (2.48

[1]A total of 8500 pottery pieces found in the place comprise about 40% of all potteries explored in Tasmasor excavation.

m in width and 1.60 m in length) consisting of stones of varying sizes resembles a garden wall that was probably added to A Structure in a later time. Likewise, stone lines directing the entrance at southern edge of wall, wall extent at northern part of eastern wall of Place 2, a wide trench that is probably an entrance at northern wall of Place 2 and the door entrance at northern wall of Place 3 are strong evidences for the Place 3 to be a courtyard.

At southeastern corner of the A structure, east, south and northern walls of the room, called as Place 2, were explored. Among them, eastern wall (96 cm in width and 4.30 m in length) and southern wall (96 cm in width) belong to outer walls of the structure and the wall at north (52 cm in width and 4.40 m in length) is a thin sectional wall. Stone foundation at southwestern corner of rectangular shaped Place 2 is completely destroyed by late period burials.

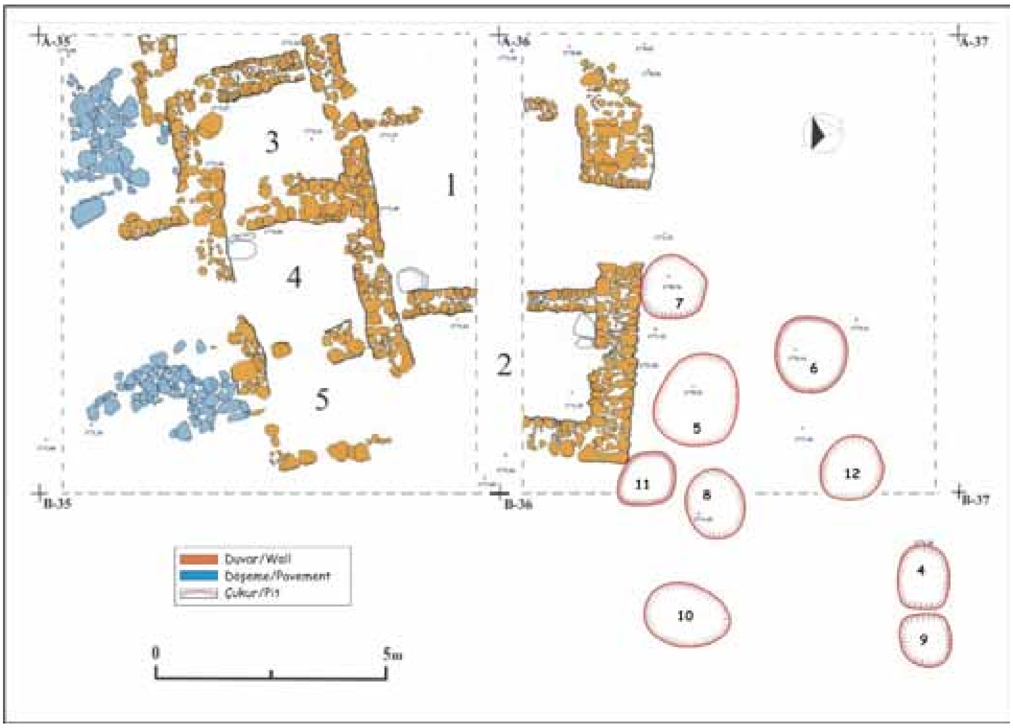

Figure 5: Genaral Plan of structure A on the Central (Hill) Excavation Area.

Figure 6: Stone foundations of structure A in A-36 and A-37 trenchses, from southeast.

Among the places forming the western section of the A structure, the one at northwestern corner is called as Place 3. The trench at southwestern corner of place is thought to be a door entrance. Likewise, regular stone lines at west of this trench and a flat, large stone (76 x 40 x 20 cm) in front part may indicate that this is an entrance. Of the place, that is made of coarse stones at both sides and small ones at the center, stone foundation at north (80 cm in width) is well preserved. Eastern section of the southern wall (92 cm in thickness) of the room is also found as well preserved. However, stones found at western part of the same wall are believed not to be the continuation of the wall but a door trench accessing to Place 4.

Some stone foundations preserved at southern part of A-35 trench, that is extremely destructed by the late period burials, comprise the Place 4 of the A structure. Particularly N-S extending stone foundation with the same characteristics as a continuation of the eastern wall of Place 3 clearly indicates the presence of a place there. The 80-cm long wall at southern edge of that wall is partly preserved and it extends to the north. From the western stone foundations of Place 4, only some stone series in southwestern corner and southern extent of western wall in Place 3 were preserved.

Preserved architectural remnants of Place 5 that are between the Place 2 and Place 4 and supposed to complete the southwest of the A structure, are composed of a single coarse stone line at the southern wall and a few stone lines of the western wall.

Stone floored area explored at northwest part of the A structure and the surrounding complex comprised by stone line with a single preserved series surrounding **(Figure 9)** must be another place of this place probably used a stable.

Figure 7:. Eastern section of Structure A and silosin trench A-36

A total of nines holes with depth ranging from 50 to 95 cm were found in front of the A structure trench to the east. These holes opened within the volcanic tuff at outside of the structure might have been used as silos. Foundation stones found in the one at south with a depth of 65 cm (Hole 5) indicate that it is a silo emptied when the settlement was abandoned rather than a hole that was closed for dumping of waster material. Similarly, a processed stone that could be a wooden column bed (a material not supposed to be thrown to the garbage) found at the bottom of another hole of 94 cm depth (Hole 6) **(Figure 8)** may indicate that this hole is a depot that was emptied when the structure was abandoned. This area set on volcanic tuff at eastern part of structure has very suitable soil structure for storage of dry grains and leguminous plants and therefore, it is believed it was used as a silo.

Figure 8: Waste material in Hole 6 in A-36 trench.

Figure 9: Iron Age architectural remains from north in trench A-35.

STRUCTURE B

Stone foundation remnants explored in B-36 and 37 trenchs **(Figure 10)** represent for the B structure. However, present architectural remnants do not allow us to completely understand the Genaral plan characteristics of this structure. Although west and northern walls are partly preserved, eastern wall of the structure has not been preserved since it is close to eastern part of hill side. It is believed that a few sequential stone series belong to foundation left over from the eastern wall. Partly preserved flooring stones at eastern section of the structure seem to belong to stone flooring outside of the building. N-S extending stone foundation of structure has a thickness of 64 cm and length of 3 m while preserved part of E-W extending stone foundation has a thickness of 72 cm and length of 1.82 m. At northern section of eastern wall, only a small part of 88 cm thickness and 1.60 m length was preserved. In-situ broken pieces of potteries were found on the basement at south of the long wall **(Figure 10)**. At this site, a few E-W extending stone lines in a direction parallel to the northern wall should belong to a partly preserved sectional wall. The B structure which has an inner dimension of 2.40 x 3 m on the basis of present architectural remnants is probably a rectangular shaped structure with two sections.

Figure 10: Architectural remains of Structure B, from south.

Figure 11: Architectural remains of Structure B from the south.

Northern and western outer parts of the B structure are covered with petrified, compact volcanic tuffs. The holes just outside of northern wall that were probably used as garbage or silo were opened into these compact tuffs. Moreover, 3 big and 2 small holes explored in C-37 trench at southeast of structure must be storage holes belonging to this structure. It is seen that stone foundations of west and northern walls of structure are placed as two lines in rapid succession. Inner and outer parts of these partly preserved foundations are made of coarser stones while central parts are filled with stone and debris of smaller sizes. Some stones used at the foundation were smoothed.

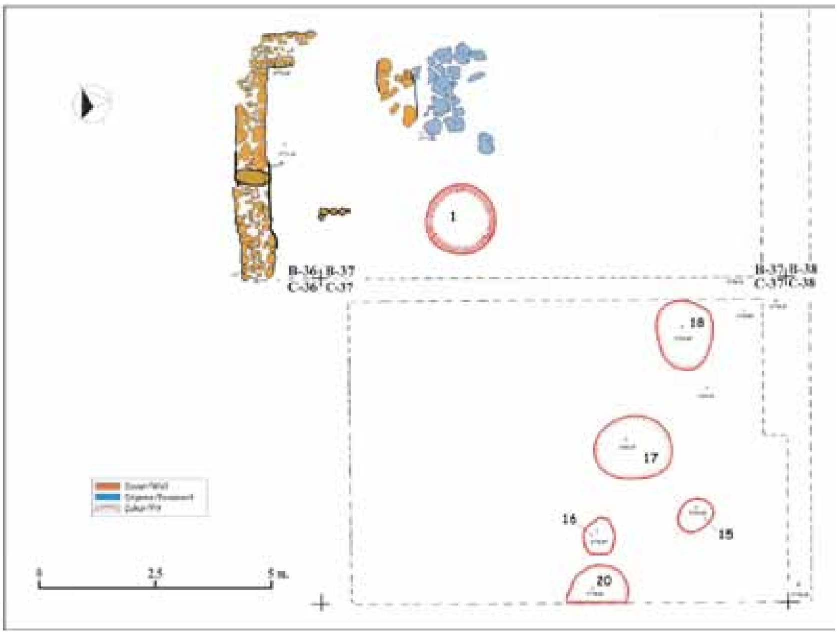

Figure 12: Structure B and silo and garbage pits at south.

Figure 13: Human and animal bones found in B-37 trench.

Just below the eastern wall that is composed of a few preserved stone latticing of the structure, two burials (M-44 and M-49) were explored which probably belong to a stage younger than the structure. Similarly, at south of eastern stone flooring about 1.5 m below the flooring level, a hole was determined in which human and animal bones are piled. The reason and the period this pile, in which a human skull is also found, are not fully determined.

STRUCTURE C

At hill side of Tasmasor, partly preserved stone-covered flooring at northwestern corner of C-34 trench and a stone foundation remnant consisting of two lines of coarse stones just next to that belong to a different architectural integrity called as the C structure. Scattered collected stones explored in C-34, 35 and B-34, 35 trenchs indicate that there are one or a few structure in this area. However, since these architectural remnants are 5-10 cm below the surface soil, they have been extremely disturbed by the late Age burials.

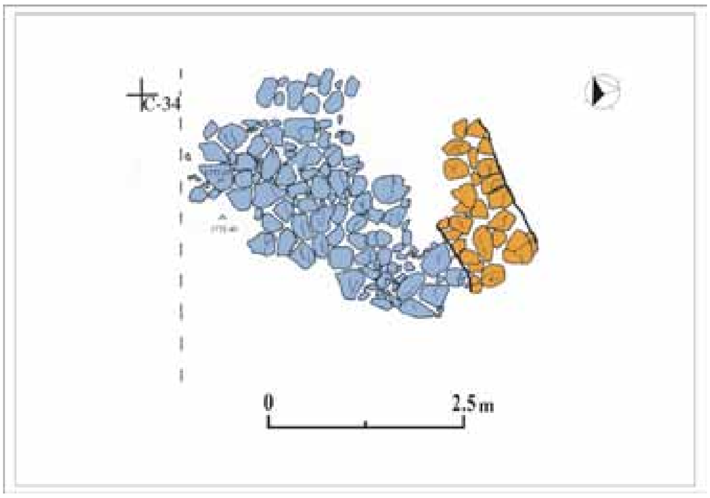

Figure 14: Iron Age architectural remains in trench C-34.

In C-34 trench, a partly preserved stone-covered area consisting of coarse and flat stones looks like a flooring outside of the place. Only 2.20-m part is preserved of a northwest extending stone foundation just next to east of this flooring. In the construction of this 96 cm thickened wall, coarse stones were used at sides and smaller ones at the inner part. A few stone piles just west of the wall resemble intense flooring.

Material and technique are the common features determined in architectural remnants explored in Tasmasor hill side. Since stone foundations and basement floorings are close to the surface, the type of material used on the walls could not be determined. The fact that no mud brick was found in the excavations may show that wooden or cane type materials were used for the walls. However, considering the thickness of foundation and the region's climate condition, it is highly probable that mud brick or stone were used on upper parts of walls.

Figure 15: Iron Age architectural remains in trench C-34.

Stones used at foundations and stone floorings of structures are not common to Tasmasor but they are mostly collected from river beds. Structures stones with some smoothed surfaces might have been taken from basalt and andesite type rocks exposing around. In stone foundations, it was determined that coarse stones were placed to form the inner and outer parts of wall while smaller ones were filled into the central parts of the wall. This is a common application in Iron Age structures of the Western Excavation Area. At out and inner parts of buildings, coarse and flat stones were used on stone-covered areas that are used as basement or road flooring.

Figure 16: Iron Age architectural remains in trench C-34.

Remnants found at the hill side indicate that structures have mostly rectangular plans extending in N-S direction. In other words, narrow fronts of buildings are faced to north and south while long fronts are towards the west and east. In the settlement area that is mostly concentrated in eastern part of the hill side, volcanic tuff was leveled and structures were provided with a smooth surface. In some cases, this rock texture acted as natural flooring at out and even inner surfaces of buildings. The most noticeable feature is that this tuff texture was used as silo hole and less dominantly as garbage holes. Considering its structure and high position on the ground, dry grains and leguminous plants must have been well preserved within this texture. Likewise, observation of this type of silos around the Iron Age structures established on the alluvium in the Western Excavation Area may indicate that the humidity of soil in this area is suitable for storage.

Stone lattice technique and arch-like structure of walls on foundations of Iron Age architectural remnants found in the central (Hill) Excavation Area are comparable with stone foundations observed in Urartu layers at Horom, Armenia. Wall lattice technique in which coarse stones are used at outer surfaces and smaller ones at the inner sides and the interior architecture style in which thin sectional walls are used in connection with the main walls are very similar to the structure remnant[2] explored in Horom B2 excavation. Considering the lattice technique in which coarser and smoother stones are used at inner part of structure, preserved stone wall remnants of the B structure in this area resemble the structure remnant[3] of Urartu period (A.D. 8-7th centuries) in C2 Area in Horom. Stone floored areas in western section of Tasmasor A structure are common application in the Urartu period architecture.[4] This type of stone flooring application within the place may show that that place could be a stable as well as a stone floored courtyard.

WESTERN EXCAVATION AREA

From 90 m west of Tasmasor hill side, another settlement area was discovered that widens towards the west. At this Area of 28-m corridor, due to overlying fill, architectural remnants explored at a depth of 30-40 cm are well preserved in comparison to those on the hill. At this Area, two structural complexes were found, namely D Structure (B-20 and 21) and E Structure (B-14, C-13 and C-14). Stone foundation remnants and stone floorings in both structures are found to be partly preserved.

These structures discovered in explanatory drilling works at Western Excavation Works were found as 60 m distant from each other. In the 28-m corridor, explanatory drilling works conducted in 60-m area between these two structures reveal no other architectural element. Drilling works indicated that structures were completely established on main soil and there was underlying cultural layer.

Since there are some differences in Genaral plan characteristics and construction techniques of E and D structures, pottery and small findings played an important role in evaluation of these structures as the same settlement integrity.

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[2] Badaljan et al. 1993: 15-18, fig. 13.
[3] Badaljan et al. 1993: 18-19, fig. 18.
[4] Badaljan et al. 1993: 18, 21, fig. 19; 1997: 211-215, Abb. 19.

STRUCTURE D

The integrity of architectural remnants partly explored in B-20 and B-21 trenchs at the Western Excavation Area is called as D Structure. Stone foundation remnants partly preserved at northern side and other stone-made arrangements give limited information on plan and construction technique of the building. The northern wall whose outer and inner surfaces are surrounded with coarser stones and central part is filled with smaller stones, has a thickness of about 2.10 m. The western edge of wall in B-20 trench is completely destroyed. However, the pile at south consisting of coarse stones should be protectable part of the western wall facing to northern wall. The slightly bended extent which has been preserved with a single line of coarse stones adjacent to eastern edge of the northern wall must be the eastern wall of structure. Southern section of D structure has been quite destroyed and foundation stones in this area could not be preserved. The pile at southeast consisting of coarse and irregular stones might be foundation remnants of eastern section of southern wall. Considering the well preserved northern wall and intensely destroyed other stone remnants, the D structure has a square-like plan.

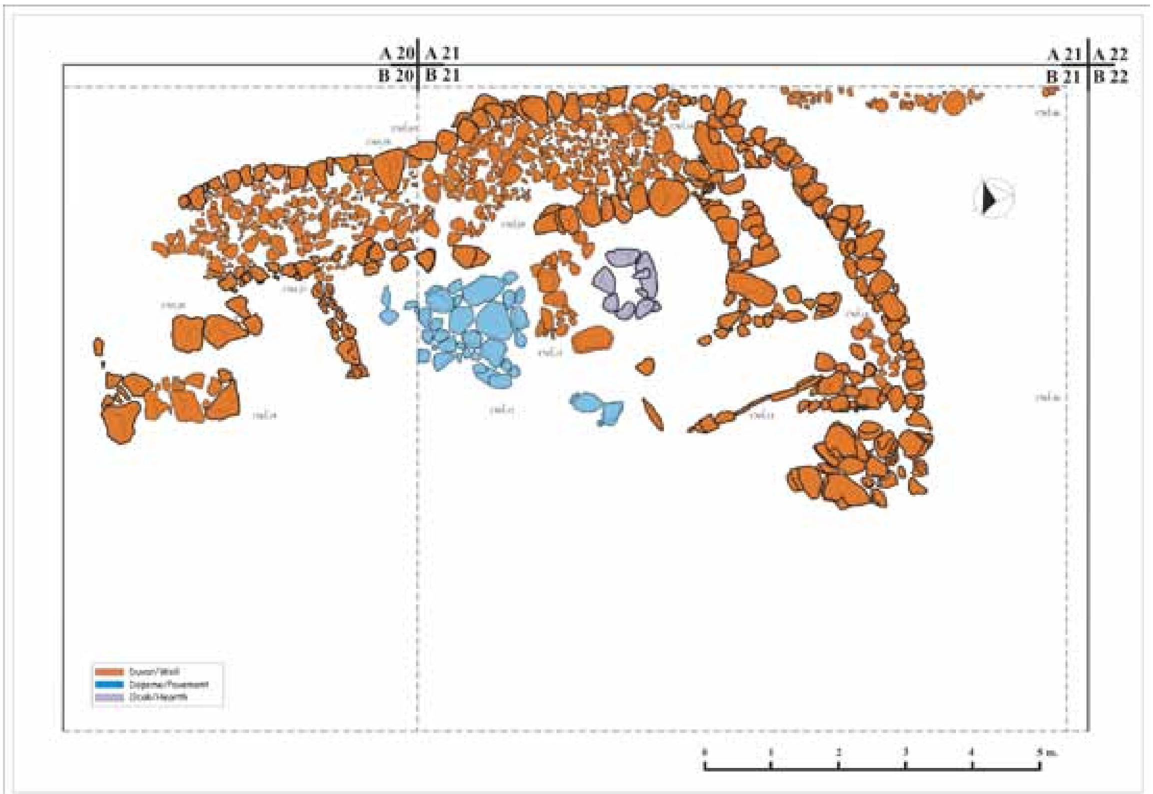


Figure 17: Genaral plan of Structure D.

Figure 18: Thick northern wall of Structure D and hearth arrangement at the inner part.

Remnants found at northeast section of B-21 trench look like a coarse in-fill material and consist of small-size and irregular placed stones as a continuation of northern wall of the D structure. Since they are outside of the excavation Area, the connection of these remnants to the D structure could not be fully understood.

Remnants found inside the D structure provide important information on interior architecture of the structure. At the center of a square-planned place on northeastern corner, there is a hearth consisting of various sizes of stones. This place of 2.45 x 2.20 m dimension whose north and eastern parts are limited with inner walls of the structure is surrounded with stones at north and eastern sections. It is believed that this is an inner arrangement to define the limits of hearth. At the south of hearth place, there is a rectangular area of 2.80 x 3.60 m that is surrounded with vertically placed flat stones. This place which is rested on south and eastern inner walls of the D structure must have been related to the hearth place functioning as a cellar or stone bench. The area outside of hearth place and rectangular area at south is covered with stone flooring. In B-20 trench, a thin wall of 36 cm thickness extending to the northern inner wall looks like a sectional wall.

Figure 19: General view of Structure D.

Particularly well preserved northern wall and partly preserved eastern wall with irregular surfaces may indicate that there is no broad architecture in the building. However, northern wall of about 2.10 m thickness shows that building was strong and protective.

In the D structure, a late period burial (M-230) was found above the rectangular place at southeast corner of structure. No burial object was observed next to the Hocker type skeleton. This burial, considering its burial style, probably belonging to Iron Age may indicate that D structure was still under the alluvium during the Iron Age.

STRUCTURE E

The integrity of architectural remnants partly explored in B-14, C-13 and C-14 trenchs at the Western Excavation Area is called as E Structure. During the drilling work conducted at the junction of B-14, B-15, C-14 and C-15 trenchs in an area of 2 x 5 m width, a foundation remnant of 1.60 m length and 60 cm thickness with two lines of preserved stone lattices was observed, and then, excavation works were widened to cover B-14, C-14 and C-13 trenchs. As a result, architectural remnants noticeable with smooth stone foundation walls and stone floorings were explored **(Figure 20)**.

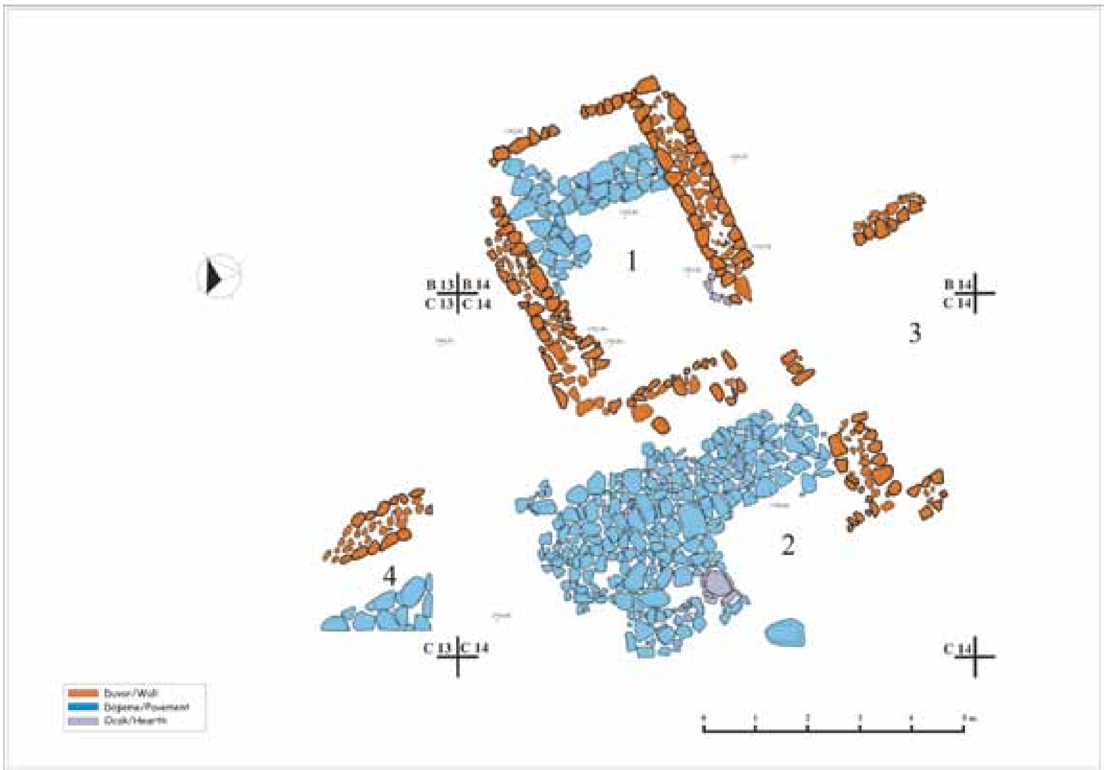


Figure 20: Genaral plan of Structure E.

Stone foundation and flooring remnants of the E structure in this area indicated the presence of a large building with interconnected 4 places. Among these places, the one at north (Place 1) has been well preserved to have detailed information. Although stone floorings of place at south (Place 2) are well preserved, its surrounding walls are completely destroyed. The place (Place 3) comprising the eastern edge of the complex can be identified with partly preserved stone foundation remnants. The place (Place 4) at west of Place 2 is composed of a little part of northern wall and some sections of inner place stone flooring which are explored in C-13 trench.

Figure 21: Southerly view of Genaral plan of Structure E.

The Place 1 of 3 x 4.44 m forming the northern side of the building has N-S extending a rectangular plan. On stone foundations of east and western walls of the place with a partly preserved single line, coarse stones were used on out and inner surfaces and smaller fill stones were placed into the central parts. The southern wall of place is intensely destroyed whose single line of coarse stones is preserved at the northern wall. Partly preserved southern wall also comprises the northern wall of Place 2. At northern wall of the Place 1 with preserved single line of stones, it is interesting that any of the remnants from outer and inner parts was preserved like on east and western walls. Since northern wall of northern edge of the eastern wall is not sufficiently long to meet the inner fill and outer surface, northern wall is thought to be made of single line of stones.

In Place 1, the stone flooring smoothly covered with flat stones is particularly preserved at northern part of the place. The soil between the flooring and foundation consisting of a single line of stones at north may indicate that there might be a stone bench in the past. Likewise, the fact that northern borders of stone flooring in this Area are preserved to form a smooth line may support this postulation. In this respect, stone floored section in the place should have been used as walking area. There is a similar case at south of this stone flooring. At inner part of western wall of the place, stone flooring of 0.96 x 2.48 m continues towards the northern wall. However, no stone flooring was detected in southern section of the place indicating that this place was used as a wooden- or mat-floored divan or living room. At southern part of the eastern wall, a semi-circular arrangement was observed that was formed by vertical placement of flat stones resembling a hearth. However, since northern edge of eastern wall is ended at this Area, it is difficult to describe the arrangement and southeastern corner of place.

Figure 22: General view of Structure E from the north.

The Place 2 explored in C-14 trench is Genarally noticeable with its well preserved stone flooring. Less preserved southern wall of Place 1 was used as northern wall of Place 2. Although stone foundation remnants of this wall are partly preserved, the fact that northern border of stone flooring of the Place 2 is ended with a smooth line may support the presence of a wall there. Stone foundation remnant of 1 x 2 m preserved at southeast corner of place extends in N-S direction in accordance with eastern wall of Place 1. Southern edge of this foundation remnant is connected to another stone foundation remnant which is southern walls of the Place 2 and Place 3. Both these foundation remnants at south and smooth southwestern border of stone flooring may indicate that unpreserved southern wall of Place 2 crosses there.

Western wall of the E structure revealed no foundation remnant. However, the fact that western border of inner stone flooring of the place is ended with a smooth line provides information on the location of destroyed western wall.

Figure 23: Inner pavement of room 2 and hearth place.

Except for rectangular area of 2.80 x 1.60 m at southwest, the inner part of Place 2 is completely stone floored. This non-floored area may belong to a stone bench or section that was left for a special purpose. Just west of this area at eastern border of stone flooring, a circular hearth was found which is surrounded with vertically placed flat stones and covered with coarse stones at the bottom.

Architectural remnants of Place 3 consist of stone foundations partly preserved at east of B-14 and C-14 trenchs. Eastward extending stone foundation remnant of southern wall preserved at southwestern corner of Place 2 is indicative of the presence of another place there. This stone foundation that is connected with Place 2 was opened in an area of 0.68 x 2.20 m in C-14 trench. Meanwhile, the use of coarser stones on outer and inner surfaces and small fill stones at the central parts indicates that this stone foundation has the same architectural technique with that observed at strong foundations of Place 1. The 1.60 m long, partly preserved stone foundation found at southeastern part of B-14 trench extends in E-W direction and it seems to belong to northern wall of Place 3.

Figure 24: Architectural remains of structure E, from northeast.

Architectural remnants of Place 4 relevant to E structure were detected at southeast corner of C-13 trench. The stone foundation with a preserved length of 1.80 m where coarser stones were used on outer and inner surfaces and small fill stones at the central parts is found on the same axis with the foundation remnants that are thought to be the common wall of Place 1 and Place 2. Stone flooring remnants just south of this wall prove that place extends towards the south. The pavements in which coarse and flat stones were used has similar features with pavements in other places.

Considering the direction and connections of walls and some arrangements in the interior places such as stone pavement, stone bench and hearth, architectural remnants explored in B-14, C-13 and C-14 trenchs are indicative of places belonging to the same structure. On the basis of pottery findings, this building is dated to Iron Age and it shows significant similarities to other structures in Tasmasor.

Smooth stone flooring and particularly stone covering of some parts of the interior place in the E structure are common characteristic of the Urartian domestic architecture as also known from the Horom Iron Age settlement.[5] The areas of these

[5] Badaljan et al. 1993: 18, Fig. 18.

places without stone pavement must have been arranged as a higher platform in comparison to floor.[6] Considering the cold climate conditions of Eastern Anatolia, wooden or mat covered floors, raised soil stone benches must have been preferred for sitting or sleeping within the place.

Considering shape and technical characteristics, hearth or fire places seen in Places 1 and 2 of the E structure is comparable to circular hearth[7] in the second room of the structure found in the Horom D1 area which is dated to Middle Iron Age.

The present architectural findings explored in a limited area indicate that the E structure is a big building with a few rooms. Stone foundations found are extremely smooth and coarser stones were used in all inner and outer surfaces. On the basis of both wall lattice technique and its plan consisting of a few rooms, the E structure is comparable to the Middle Iron Age structure in the Horom B2 area[8].

[6] For a similar application and comment, see Badaljan et al. 1993: 21, fig.19.
[7] Badaljan et al. 1997: 213, Abb. 19.
[8] Badaljan et al. 1997: 215-216, Abb. 21.

Part IV

TASMASOR IRON AGE BURIALS

A. Akçay

Among 236 burials explored in rescue excavations conducted in Tasmasor, 19 are dated to Iron Age. Of these 19 burials, 5 are pithos burials and remaining 14 burials are inhumations. The fact that most of the inhumations were found under or lower levels of the foundation walls of Iron Age architectural structures may indicate that Iron Ages in Tasmasor have two or more stages.

Most of the inhumations were destroyed by late stage burialyard and burial gifts were encountered in some of burials. Although small natural stones were determined in some inhumations indicating that the burial is surrounded with stones, the burials are not generally surrounded with stones and simple soil burials were applied. Among the 12 inhumations, 10 burials are in SW-NE direction and 2 are in E-W direction showing that there is a common direction for the Iron Age burials. Burial gifts found in some of burials are important burial traditions.

Plate and bowls obtained from some of inhumations might be related to “dead food”. In addition to cooked soil containers that are generally found to be facing to the face of dead, other important burial gifts are stone and glass beads. Among the beads made of frit, agate and glass, those made of blue spotted white stone known as “eye beads” are the common gifts found in the Iron Age burials.

Among 5 Pithos burials explored in Tasmasor, 4 were determined to be used for child burial. Some of Pithos burials in which long, egg-shaped, simple rimmed, coarse pots are used, are closed as broken on the dead while sides of some were closed with coffin stone. Bowl with ewer and handle closing the rim of Pithos no. M-120 is a common bowl type of the Middle Iron Age and it is known that similar bowls are used as the pithos lid in Iron Age burials of other regions. The fact that all the pithos are placed in E-W direction on the soil indicates that there is a common direction for these burials.

	Burial No	Contex	Burial type	Burial Type	Burial Direction
1	M-1	B-36	Simple Soil	Hocker	Southwest-Northeast
2	M-2	B-36	Simple Soil	Hocker	Southwest-Northeast
3	M-3	B-36	Simple Soil	Hocker	-
4	M-7	B-36	Simple Soil	Hocker	-
5	M-8	B-35	Simple Soil	Hocker	East-West
6	M-44	B-37	Simple Soil	Hocker	Southwest-Northeast
7	M-49	B-37	Simple Soil	Hocker	Southwest-Northeast
8	M-66	A-40	Simple Soil	Hocker	East-West
9	M-80	A-39	Pithos	Hocker	East-West
10	M-100	A-35	Pithos	Hocker	East-West
11	M-108	A-35	Simple Soil	Hocker	East-West
12	M-120	C-37	Pithos	Hocker	Southwest-Northeast
13	M-123	A-35	Simple Soil	Hocker	East-West
14	M-131	C-37	Pithos	Hocker	Southwest-Northeast
15	M-144	A-33	Simple Soil	Hocker	Southwest-Northeast
16	M-169	C-36	Simple Soil	Hocker	Southwest-Northeast
17	M-207	B-27	Pithos	Hocker	East-West
18	M-229	B-27	Simple Soil	Hocker	Southwest-Northeast
19	M-230	B-21	Simple Soil	Hocker	Southwest-Northeast

Table 1: Tasmasor Iron Age Burials.

Inhumations

M-1

The burial was found at a depth of 20 cm from the surface at elevation of 1771.67 m in 1/f-g plan squares of the B-36 trench. The burial of 102 x 71 cm dimensions opened in white colored tuffs comprising the Tasmasor hill side (Central Excavation Area) is very close to modern soil level and therefore, it has been weakly preserved. There is no architectural arrangement for the natural rocks surrounding the skeleton in the soil but only the natural tuffs were used for this purpose. Oval shaped burial hole was opened in N-S direction and the skeleton was buried into the burial in the same direction and as hocker position. The face and body of burial, which was determined to belong to a child as a result of primary anthropologic investigations, are faced to the east. Skull was lying down on the right side to indicate the southern corner of the burial and the arms of skeleton were broken from the elbow, and hands are placed to be in front of the face. In the burial which is very close to the surface and has been damaged by the late period burials, except for a p.t. bowl that is placed in front of hands and knees of skeleton, a frit stone necklace was found around the chest and skull of skeleton.

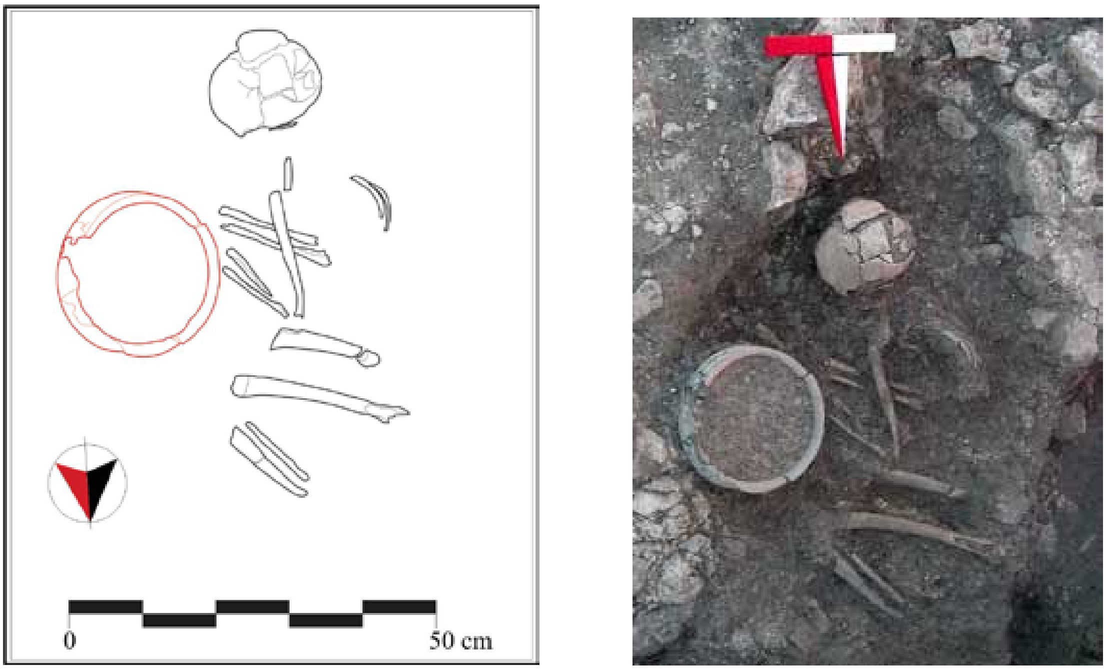


Figure 1: M-1 burial

M-2

The burial was found at a depth of 15-20 cm from the surface at elevation of 1771.45 m in 10/i-j plan squares of the B-36 trench. The burial explored under the eastern wall of the A structure in the Central Excavation Site is largely destroyed. The burial whose most part is under the foundation walls of Iron Age structure and only skull and front arm bones are partly preserved, was at southwest corner of eastern wall of structure and skeleton was lying down in N-S direction in hocker position as the skull is at south. Considering the structure, burial was found to belong to a previous stage and, as a result of primary anthropologic investigations, it was determined to belong to an adult female. No finding was obtained from the burial.

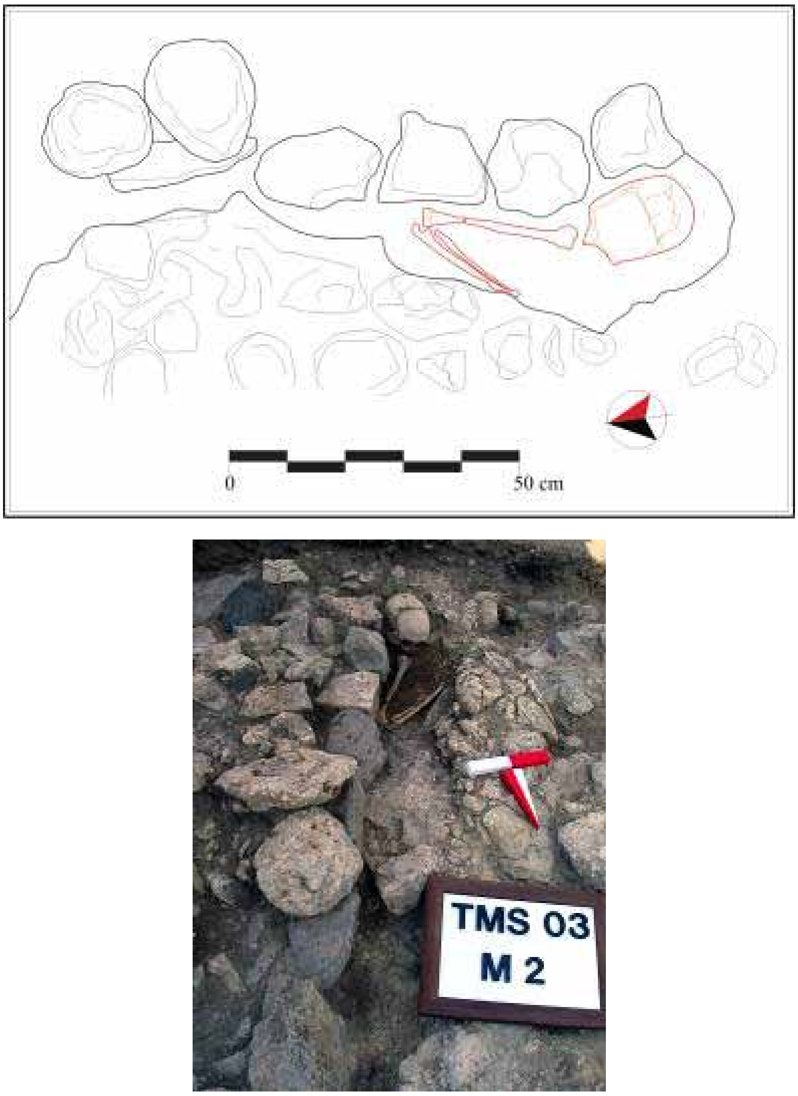


Figure 2: M-2 burial.

M-3

The burial was found at a depth of 15 cm from the surface at elevation of 1771.50 m in 3/j plan squares of the B-36 trench. This burial is quite weakly preserved and it is about 20 cm higher than another Iron Age burial at south (burial M-7). Only skull and two lower jaw bones were obtained from the skeleton and skull bones were found as scattered at northern part of burial. Although it has lost its in-situ position, a black stone bead was found during the collection of skeleton which was placed into an N-S extending hole. The general architectural features of burial at north of another Iron Age burial (burial M-7) could not be fully understood. It is thought that both burials were destroyed during the construction of the A structure dated as Iron Age.

M-7

The burial was found at a depth of 30-35 cm from the surface at elevation of 1771.35 m in 3-4/j plan squares of the B-36 trench. The circular shaped burial opened into the tuffs is about 118 x 106 cm. The burial which was opened into the soft rock at northern side of bedrock on which northern wall of the A structure is established, is lower than the level of structure. A similar case was also observed in M-3 burial just north of M-7. Both burial holes were destroyed at later periods probably during the construction of the Iron Age structure. Although it has lost its in-situ position, skeleton was placed into N-S extending burial hole on its left side facing to the east in hocker position as the skull is at north. Except for parallel arm bones and broken skull, no other piece of skeleton was found. Skeleton was determined to belong to an adult male.

Figure 3: M-7 burial.

M-8

The burial was found at elevation of 1771.60 m in 1/b plan squares of the B-35 trench. Coarse stones found around the skeleton which was placed in hocker style into an oval hole of 64 x 50 cm indicate that burial was surrounded with stones. However, burial arrangement was destroyed by the late stage burials and later by younger Iron Age structures. The skeleton was placed in hocker style into the E-W extending burial hole and the head is faced to west and the face is towards to north. Legs have been completely pulled inward and arms are joined on the chest. One blue and one brown stone bead were obtained from the burial that was determined to belong to a child.

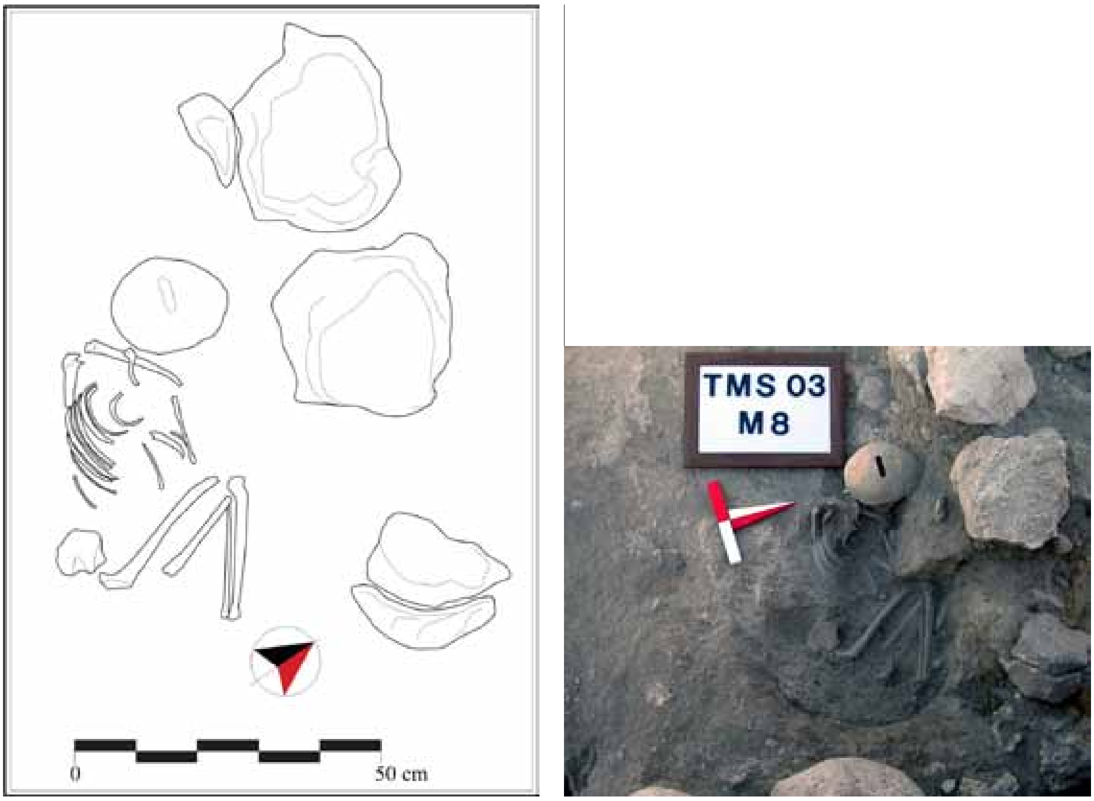


Figure 4: M-8 burial.

M-44 and M-49

The burial was found at a depth of 35 cm from the surface at elevation of 1770.80 m in 6-7/d plan squares of the B-37 trench. Skull bones were found as scattered at northeastern part of the burial. Most part of skeleton that is under the eastern wall of the A structure were observed within M-49 burial which was explored in 6-7/b plan squares in the same trench. Bones obtained from extremely weakly preserved burial were determined to belong two different people one is male and another is female. In fact, these two burials which are separated by the Iron Age structure comprise a single burial in which two burials (one is male and another is female) were made. Skull and body part of the skeleton were found to be partly preserved in the M-49 burial and other scattered skull pieces found next to the skeleton indicate that burials were made in E-W direction as the hocker style. The face of skeleton found in M-49 burial is towards the south and stones of varying sizes found around the burial reveal that burial was surrounded with stones. Among the Tasmasor Iron Age burials, this is the only burial in which double burials were made differing from others by means of burial style. No finding was obtained from the burial.

Figure 5: M-49 burial.

Figure 6: M-49 burial.

M-66

The burial was found at a depth of 45 cm from the surface at elevation of 1768.95 m in 4-5/b-c plan squares of the A-40 trench. Skeleton was placed on its right side into an oval shaped, 128 x 65 cm hocker inhumation and face of skeleton is towards the north. Arms were left in front of body as bended from the elbow and legs were broken from the knees and pulled to the hip. No finding was obtained from the burial. The burial obtained under the Medieval Age structure is the second burial found in this site. No architectural arrangement was observed around burial and burial was determined to be opened into a calcareous soil at the main soil level. The burial just below the flooring stones of the Medieval Age structure is very close to base level of structure indicating that a leveling was made during the construction of Medieval Age structure in the area of Tasmasor Eastern Excavation Site. Meanwhile, foundation stones of structure may belong to a previous stage and structure might be two-stage one (Classical Medieval Age). Various Iron Age pottery pieces obtained from the structure and the level of M-66 burial are also in support this postulation.

Figure 7: M-66 burial.

M-144

The burial was found at a depth of 15 cm from the surface at elevation of 1771.25 m in 5/d-e plan squares of the A-33 trench. Skeleton was placed into an oval shaped, SW-NE extending 138 x 59 cm burial that was opened into soft soil on the bedrock. Bones of the weakly preserved burial belong to an adult female. Hand and foot bones of the northward-facing skeleton were collected as scattered. It is interesting that burial has not been damaged by late period burials which were explored at lower levels. A few moderate size stones obtained around the skull may indicate that burial was surrounded with stones.

M-169

The burial was found at elevation of 1771.70 m in 2/e-f plan squares of the C-36 trench. The skeleton which was placed on its right side into SW-NE extending burial and it is faced to south. Coarse stones as if left on the skeleton surround the burial. These stones caused breaking of skull and they were fallen down onto the burial due to destruction by late period burials. In the skeleton, legs were bended from the knees, abdomen was pulled inward and arms were folded as hands in front of the face. No hole was opened in the soil and the burial was made as hocker style and skeleton was lying down on the main soil. The burial in which no gift was found belongs an adult female.

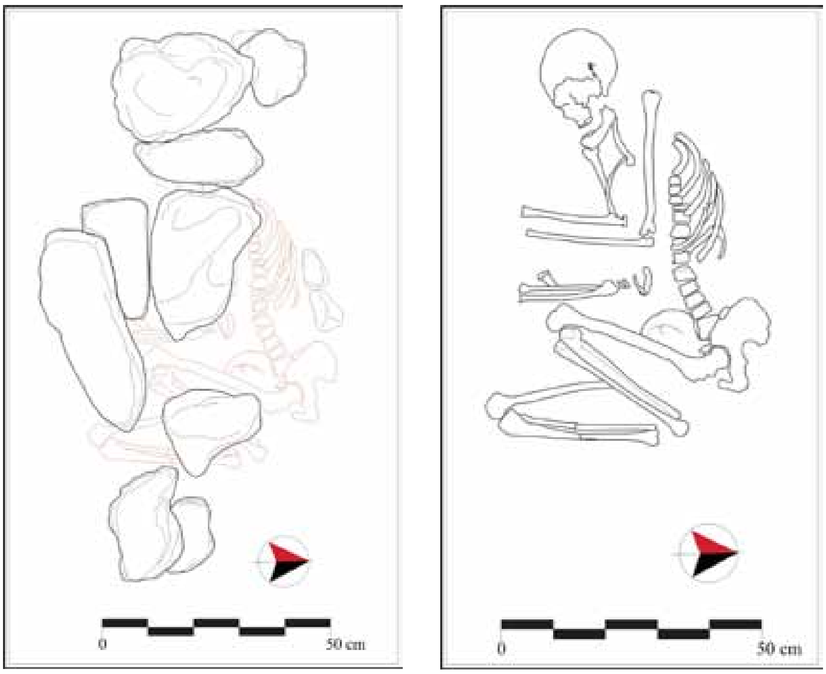


Figure 8: M-169 burial.

M-230

The burial was found in 3-5/f-g plan squares of the B-21 trench. The burial which belongs to a later stage was obtained in upper levels of the preserved eastern wall of the D structure and it did not damage the structure. The SW-NE extending burial is of 140 x 80 cm. The weakly preserved skeleton was lying down in hocker position and its face is towards to west. No gift was found in the burial.

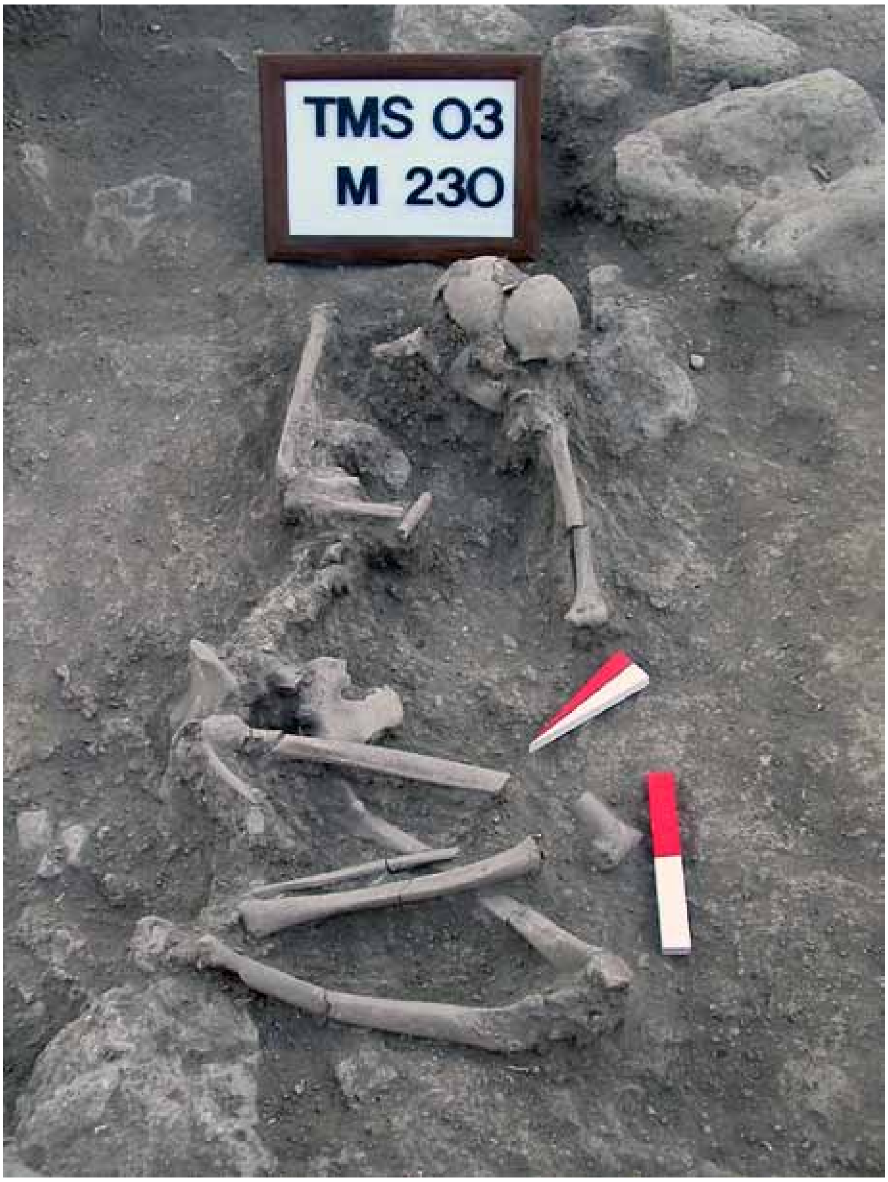


Figure 9: M-230 burial.

Pithos Burials

M-80 Pithos Burial

The burial was found at elevation of 1769.50 m in 6/e-f plan squares of the A-39 trench. The burial that was obtained at a depth of 30-35 cm at northeast of Medieval Age structure exposed in Tasmasor Eastern Excavation Site is the only pithos burial at this area. The skeleton was lying down on the soil in hocker style and its surface was closed with a smashed half pithos. In this respect, burial is not a complete pithos burial. Skeleton was placed into the eastward facing pithos in E-W direction. Most part of the skeleton with hocker position was destroyed. The broken pithos was placed on the lying dead and its bottom and near bottom parts were closed on the head and shoulders of the dead. There is a 0.5 cm diameter hole on the bottom of pithos burial. In addition to a bronze bracelet on the right arm of skeleton, two broken glass beads were found from the burial. This type of Middle and Late Iron period burials covered with broken pithos or pottery pieces are also observed in Van Karagündüz.

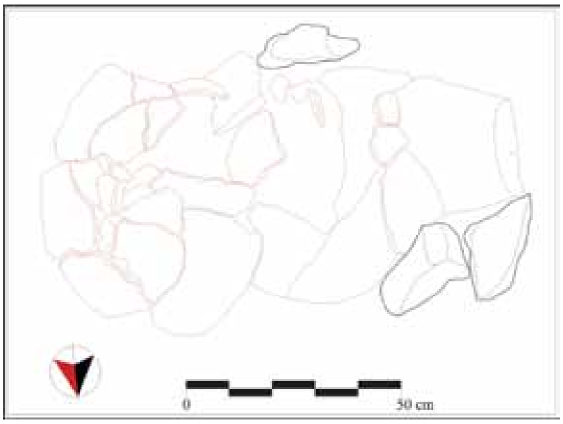


Figure 10: M-80 burial

M-100 Pithos Burial

The pithos burial in A-35 trench was placed into a shallow hole opened on the main soil. The rim of pithos is closed with a coarse coffin stone and it is surrounded with coarse stones. Skeleton was placed into the pithos in E-W direction and its bones were mostly found at the bottom. The burial which belongs to a child was lying down in hocker position. Like in pithos no. M-80 burial, there is a 0.5 cm diameter hole at the bottom of pithos. This type of pithos with a perforated bottom is found in Erzurum and its vicinity by the Early Iron Age.

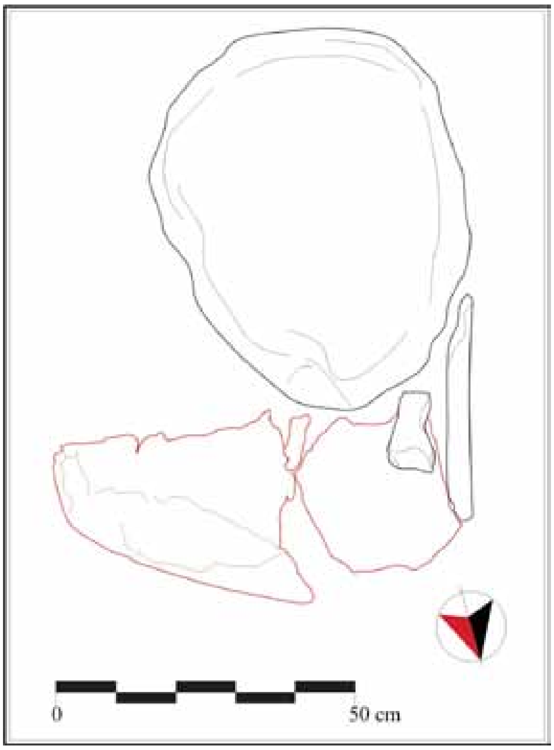


Figure 11: M-100 burial

M-120 Pithos Burial

The pithos in E-W direction was placed into 70 cm x 1.25 m hole within the main soil in the C-37 trench. It was placed as its rim is faced to the east and the rim was closed with a handled bowl with a ewer. Scattered bones pieces of a weakly preserved child were obtained from a well preserved pithos. In addition to almost melted bones, no other finding was obtained from the pithos. Analogues of this burial are observed in late Iron Age in Palestine and (32031) …

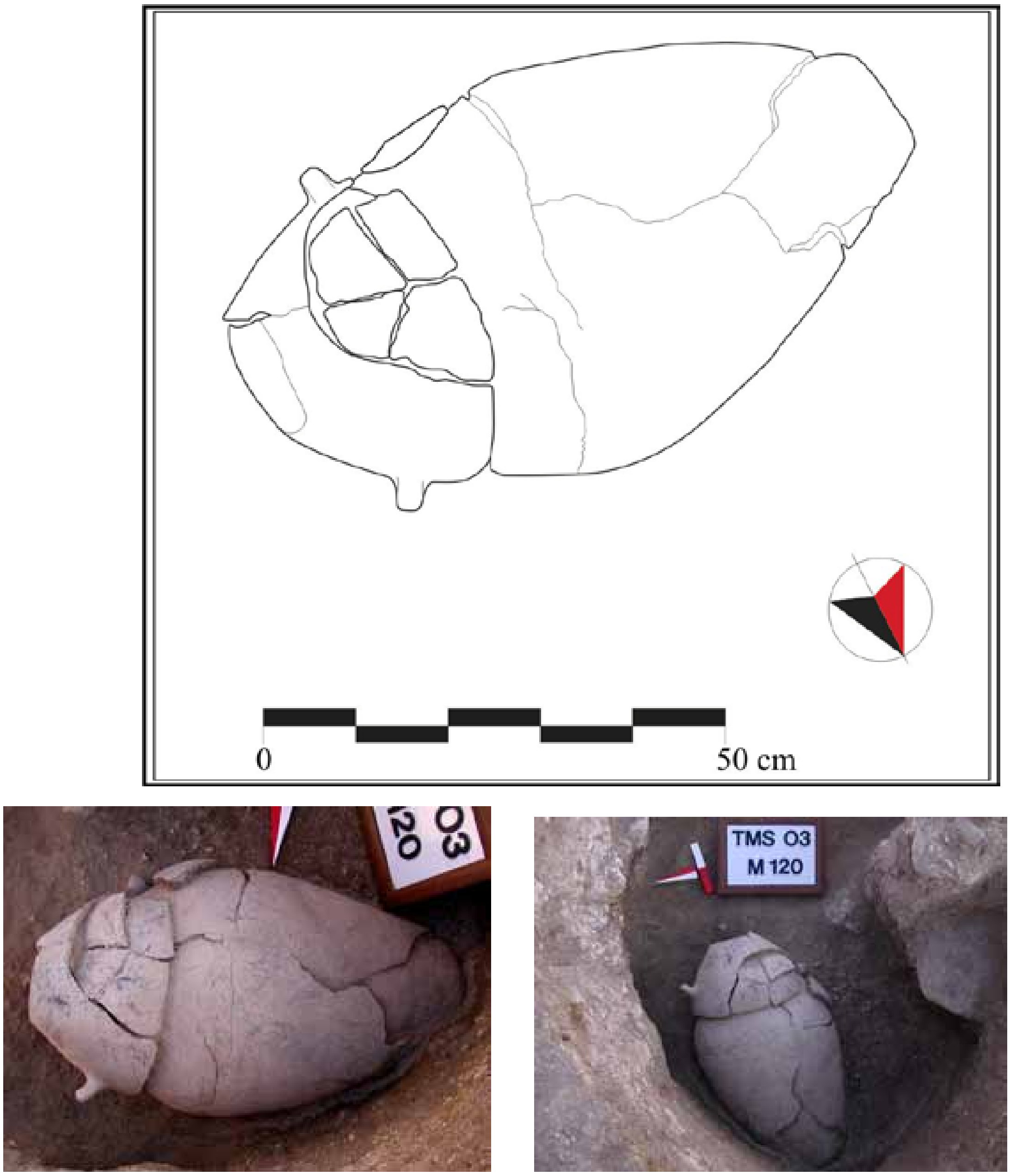


Figure 12: M-120 burial

M-131 Pithos Burial

The burial obtained in C-37 trench is extremely weakly preserved. The burial resembling M-80 burial is not a complete pithos burial and skeleton was covered with broken pithos pieces. SW-NE extending skeleton was lying down in a shallow hole opened in the bedrock that is surrounded with tuffs and most of overlying pithos pieces is not well preserved. Surrounding natural rocks were used as an architectural arrangement around the burial. The face of skeleton which belongs to an adult female lying on her right side is towards the southeast. Except for a total of 7 beads, no other finding was obtained from then burial.

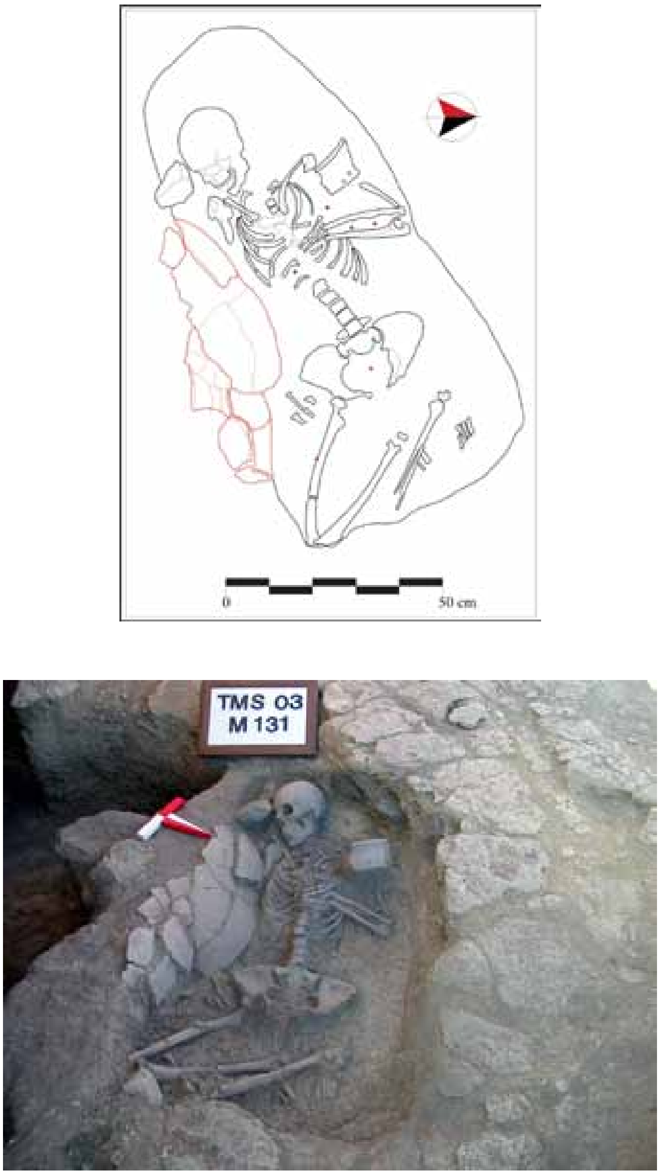


Figure 13: M-131 burial

M-207 Pithos Burial

The pithos burial in B-27 trench is in E-W direction. The pithos belongs to a baby and its rim is towards to east. Skull bones are weakly preserved at the rim of pithos and the baby skeleton was placed into the pithos from the top upon breaking and face of skeleton is towards the east. No finding was obtained from then burial

Figure 14: M-207 burial

PART V
TASMASOR IRON AGE SMALL FINDINGS

Y. Kamış

Small Findings Catalogue

ABBREVIATIONS

AÇ : Rim diameter
BG : Head width
CK : Wall thickness
Ç : Diameter
DÇ : Hole diameter
DK : Bottom thickness
DpÇ : Bottom diameter
G : Width
HN : Cement number
K : Thickness
KG : Preserved width
KK : Preserved thickness
KU : Preserved length
KY : Preserved height
MN : Munsell number
OG : Shoulder width
OK : Central thickness
U : Length
UÇ : Tip thickness
Y : Height

Terracotta Finds

Camel Riton:

The cooked soil riton obtained in 1/e plan square from the B-33 opening portrays a kneeling down ***camel***. Although there are some small deficiencies on the body of ribbon which is obtained almost in complete form, its *handle* part is deficient that is believed to extend from the rear of its head to the back. At the back of riton that is enlarging to the trunk, the hump was raised as decanter rim. The fractures on decanter rim of 4 cm height and 5 cm width indicate that the rim is joined with a handle that continues from the riton head to the back.

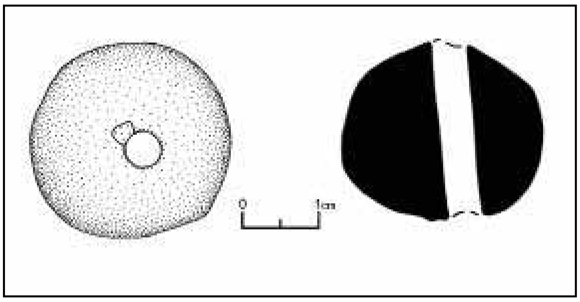
A notch decoration extending from both sides of camel mouth to the neck forms a gem-like appearance. The camel is portrayed with distinctive cheek holes and its rim has been used as a ewer of 1 cm diameter. Just under the gems that are portrayed at both sides of the body, line decorations in 6 mm spacing are noticeable which extend to the legs. At the edge of hump, triangular intricate chamfer decorations are found that extend to the tail. At the end of chamfers, a small tail is portrayed. The legs adjacent to the body start from both sides of tail and extend to the feet and the distance between them is 4 cm.

Figure 1: Camel Rhyton.

Line decorations starting from lower part of neck on front side and continuing to the legs are cut by a horizontal band in the vicinity of knee. Deficient pieces on trunk and neck of the riton were completed with plaster and painted with colors suitable to the original form.

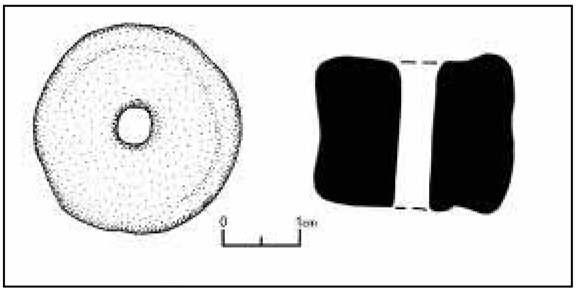
Disks:

Disk (19034):



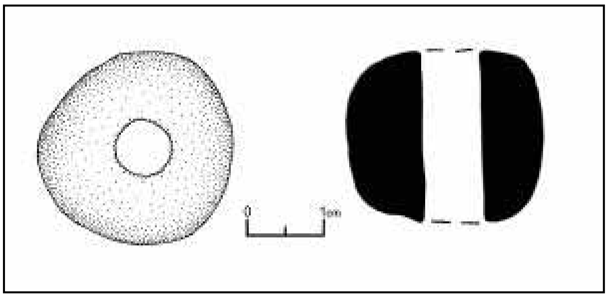
The circular disk obtained from A-36 opening is pinkish and grayish camel colored. The disk has a diameter of 2.6 cm and hole diameter of 3 mm.

Disk (24002):



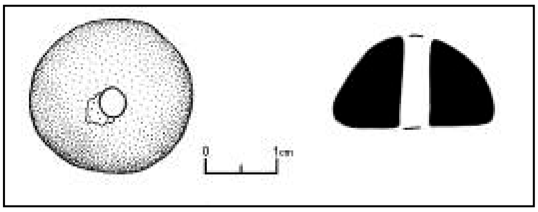
The cylindrical disk obtained from A-40 opening is thin coated and polished and outward-bulged at top and bottom and inward-bulged at the central part. The disk has a height of 2.2 cm, diameter of 0.75 cm and hole diameter of 5 mm.

Disk (25009):



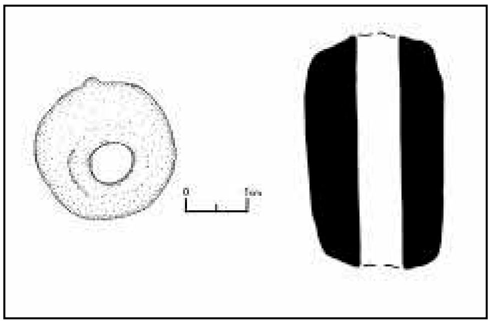
The cylindrical disk obtained from A-35 opening is grayish black colored. The disk has a height of 2.3 cm, diameter of 2.7 cm and hole diameter of 8 mm.

Disk (13005):



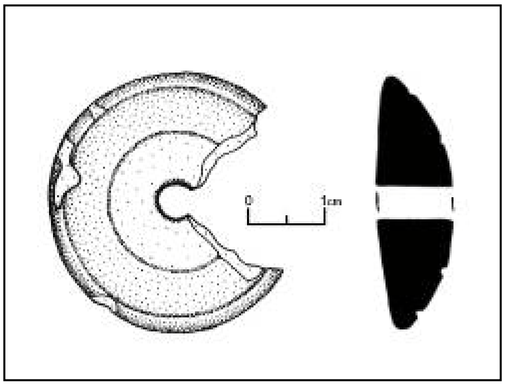
The surface of semi-conical (discoid) shaped disk obtained from B-34 opening is reddish camel and cream colored. The disk has a height of 1.3 cm, diameter of 2.3 cm and hole diameter of 0.4 cm.

Disk (13013):



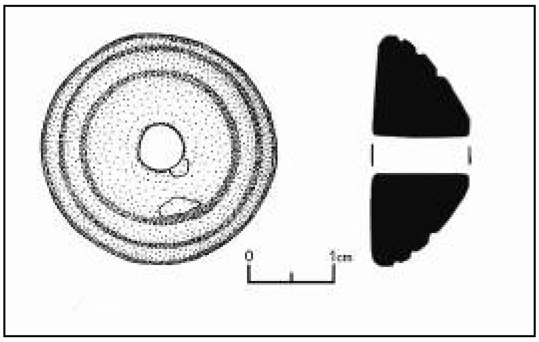
The cylindrical disk obtained from B-34 opening is brownish camel colored. The disk with a polished surface has a height of 3.8 cm and diameter of 2.3 cm. Hole diameter is 7 mm.

Disk (14009):



The disk has two lines of thin chamfer decoration and its 1/4 part is deficient. The disk has a diameter of 3.4 cm, height of 1 cm and hole diameter of is 5 mm. Disk with a clean cement is grayish black colored on the surface.

Disk (15048)



The semi-ellipsoidal disk obtained from B-36 opening has three lines of chamfer decoration. The black colored disk has a diameter of 2.25 cm, height of 1.15 cm and hole diameter of is 5 mm.

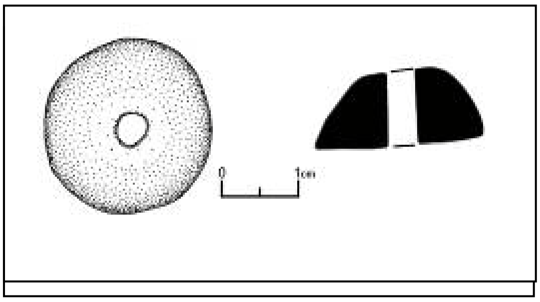
Disk (20014)

The disk obtained from B-39 is in cylindrical form and has a hole diameter of 9 mm. some polish traces are observed on grayish black colored disk. It has a length of 2.4 cm and diameter of 2.2 cm.

Stone Finds

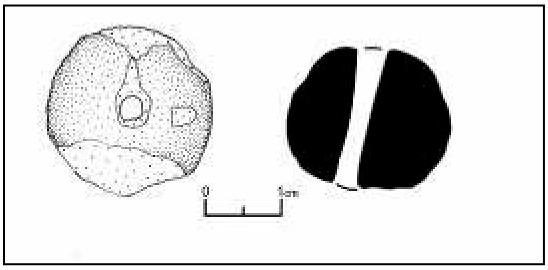
Stone Disks:

Disk (26045):



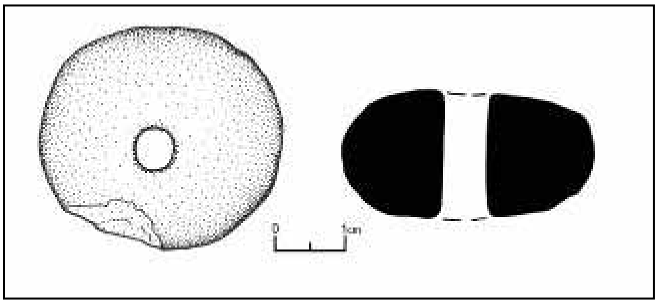
It was obtained from A-33 opening. The disk has a diameter of 2.2 cm, height of 1.1 cm and hole diameter of is 4 mm. The lower part of milky brownish semi-conical disk is broken.

Disk (15059):



The white marble disk obtained from B-36 opening has a height of 1.9 cm, a diameter of 2.2 cm and hole diameter of is 3 mm. There are fractures on the upper surface.

Disk (15058):



The beige marble disk obtained from B-36 opening is in oval form. Its height is 1.9 cm, diameter is 4 cm and hole diameter is 6.5 mm. The disk with a small fracture on one of the sides is quite well smoothed.

Beads:

Stone Beads:

Blue Stone Beads: 4 blue stone beads. Blue stone beads have diameter of 4.5 to 6.5 cm.

Stone Beads: Two beads, one is gray and another is yellow. They were obtained from M-131 no. pithos tomb.

Stone Bead: There are 3 red circular rings on turquoise colored, blue-stone made, circular bead. It was obtained from M-8 no. simple soil tomb.

Stone Bead: The cylindrical bead made of brown agate has veined structure. It was obtained from M-8 no. tomb.

Stone Beads : Among the circular beads, bead no. 134 is made of light blue stone and it has three circular white spots. They were obtained from M-131 no. tomb.

Stone Beads : Among the 13 beads obtained from M-131 no. tomb, 6 are made of frit and 5 are made of stone. 2 are made of glass. There are blue circular rings on the stone beads.

Frit Beads:

Frit Beads: A number of 92 beads that are made of frit were collected around skull and neck of a skeleton from the M-1 simple soil tomb.

Amulet:

Amulet (Necklace Piece) : Beige colored, droplet-shaped amulet of 2 cm length and 1.3 cm thickness obtained from B-42 opening has a hanging hole on its upper part.

Grinding Stones:

11 grinding and crushing stones are generally circular and oval shaped and all of them are made of basalt. Their size is between 8 and 12 cm and some erosion traces are shown on the surface. Among them, crushing stone no. ***172*** has a different shape and its preserved length is 29 cm.

Bone Finds

Bone Pandantife:

During the Tasmasor excavation, a total of 11 bone pandantifes were found. Bone pandantifes with length ranging from 3 to 4.5 cm are generally perforated from their upper and central-upper parts. The surface of bone pandantifes is generally polished and some of them are double perforated.

Bone Borer:

Among 3 bone pieces to be classified as bone borers, piece no. **17** is a broken bone needle with a sharpened edge. The needle with a completely polished surface has a preserved length of 7.3 cm. Piece no. **154** is a broken awl. This awl which was coated with a bright material has a broken tip and its preserved length is 3.1 cm. Another piece of the bone borer group is the awl no. **25** with a conical form. This awl with extremely eroded surfaces has a length of 6.6 cm and width of 1.3 cm.

Bone Roller:

The cylindrical bone roller was shaped by carving from both tips and its upper part has a semi-spherical form and the lower part is cut-circle shaped. The roller with a length of 4.3 cm is completely polished.

Processed Bone:

There are intricate rings and parallel line motifs on decorated and painted bone piece most of which was obtained as broken. Among the rings is painted in red tones. The completely polished piece has a preserved length of 4.8 cm and a thickness of 7 mm.

Metal Finds

Bronze Bracelets:

Among 3 bracelets, 2 are bronze and one is iron, bracelet no. 4 which is the best preserved one, was found in-situ position on the arm of skeleton within the M-80 no. tomb. The bracelet with a diameter of 5.1 cm and thickness of 3 mm has two snake headed tips. Bracelet no. 148 has been intensely corroded. Spirals of the bracelet are partly observed but their no decoration on it. Bronze bracelet no. 149, whose only half part is obtained, is covered with malachite.

Bronze Needle (65-89):

It was obtained as 3 pieces. The tip of intensely corroded spiral headed needle is not preserved.

Glass Finds

Glass Beads:

Droplet motifs are found on two glass beads that are obtained from M-131 no. pithos tomb.

PART VI
TASMASOR IRON AGE POTTERY FINDINGS

S. Y. Şenyurt, Y. Kamış, A. Akçay

Type No	Subtype	Explanation
		SHALLOW BOWLS/PLATES
Type 1		**Simple Shallow Bowls**
	1.1	Simple rimmed, flat shallow bowls
	1.2	Slightly inward-inclined, simple rimmed shallow bowls
	1.3	Steep-necked, simple rimmed, shallow bowls
	1.4	Steep-necked, thickened rimmed, shallow bowls
	1.5	Steep-necked, outward-pulled rimmed shallow bowls
Type 2		**Inward-Inclined Rimmed, Shallow Bowls**
	2.1	Inward-inclined, sharp rimmed, shallow bowls
	2.2	Inward-inclined, thickened rimmed, shallow bowls
	2.3	Inward-inclined, inward-thickened, flat rimmed, shallow bowls
Type 3		**Keeled Shallow Bowls**
	3.1.	Inward-inclined, simple rimmed, keeled shallow bowls
	3.2.	Flat, keeled shallow bowls
	3.3.	Thickened rimmed, keeled shallow bowls
	3.4.	Outward-pulled rimmed, keeled shallow bowls
		BOWLS
Type 4		**Simple Bowls**
	4.1	Simple rimmed, flat bowls
	4.2	Thickened rimmed, flat bowls
	4.3	Inward-cut rimmed, flat bowls
	4.4.	Simple rimmed, circular bowls
	4.5.	Thickened rimmed, circular bowls
	4.6.	Outward-pulled rimmed, circular bowls
Type 5		**Inward-Inclined Rimmed Bowls**
	5.1	Inward-inclined, simple rimmed bowls
	5.2.	Inward-inclined, inward-folding rimmed bowls
	5.3.	Inward-inclined, thickened rimmed bowls
	5.4.	Inward-inclined, inward- and outward-thickened rimmed bowls
	5.5.	Inward-inclined, inward-pulled rimmed bowls
	5.6.	Inward-inclined rimmed, vertical-profiled bowls
Type 6		**S Profiled-Killed Bowls (Akamenite Bowls)**
	6.1.	Short-necked, S profiled, keeled bowls
	6.2.	Short-necked, wide-spiraled, S profiled, keeled bowls
	6.3.	Long, flat-necked, S profiled, keeled bowls
	6.4.	Long, steep-necked, S profiled, keeled bowls
		DEEP BOWLS/CONTAINERS
Type 7		**Simple Deep Bowls**
	7.1	Flat, (bell-shaped), deep bowls
	7.2	Circular-profiled, deep bowls
Type 8		**Outward-Inclined Rimmed, Long-Necked Deep Bowls**
Type 9		**Inward-Inclined Rimmed Deep Bowls**
	9.1	Inward-inclined, deep-rimmed, deep bowls
	9.2	Inward-inclined, flat-rimmed, deep bowls
Type 10		**Bowls with Ewer**
	10.1.	Simple rimmed, long, bowls with ewer
	10.2.	Thickened rimmed, short bowls with ewer

		POTS WITH NO NECK
Type 11		**Pots with no Neck**
	11.1.	Inward-inclined, simple rimmed, pots with no neck
	11.2.	Outward-inclined, simple rimmed, pots with no neck
	11.3.	Slightly outward-pulled rimmed pots with no neck
	11.4.	Outward-thickened rimmed pots with no neck
		SHORT-NECKED POTS
Type 12		**Short, Wide-Necked Pots**
	12.1.	Short, wide-necked, wide-spiraled, simple rimmed pots
	12.2.	Short, wide, funnel-necked, thickened rimmed pots
	12.3.	Short, wide-necked, wide, short-spiraled, outward-inclined rimmed pots
	12.4.	Short, wide-necked, narrow-spiraled, outward-inclined rimmed pots
	12.5	Short, wide-necked, long-spiraled, slightly outward-inclined pots
	12.6.	Short, wide-necked, outward-inclined pots
	12.7.	Short, wide, outward-turned necked, simple rimmed pots
	12.8.	Short, wide, outward-turned necked, thickened rimmed pots
	12.9.	Short, wide, outward-turned necked, outward-pulled rimmed pots
	12.10.	Short, wide, outward-turned necked, long-spiraled pots
		LONG-NECKED POTS
Type 13		**Long-Necked Pots**
	13.1.	Long, steep-necked, simple rimmed pots
	13.2.	Long, steep-necked, outward-inclined rimmed pots
	13.3.	Long, outward-inclined necked, outward-pulled rimmed pots
	13.4.	Long-necked pots with sluice on the rim
		WATER JUGS
Type 14		**Water Jugs**
	14.1.	Simple rimmed water jugs
	14.2.	Thickened rimmed water jugs
		VASES
Type 15		**Outward-Bending Necked, Simple Rimmed Vases**
		JARS
Type 16		**Jars**
	16.1.	Short-necked, outward-inclined, simple rimmed, long jars
	16.2.	Short-necked, outward-pulled rimmed, long jars

Fig. 1

1. 57001-3: B-20. MN: 3.1. Type: 1.1. Bowl rim piece. Moderate-little stone, intense ceramic powder, mica added. Black (5Y 2.5/1) cemented; outer surface is light brown (7.5YR 6/3) coated and polished; inner surface is dark reddish gray (2.5YR 3/1) coated and polished. Moderately cooked. Wheel made.
Comp: Kleiss 1976: abb.1: 5 (Qal'eh Gavur, Urartu)

2. 15031-5: B-36. MN: 4.1. Type: 1.1. Bowl rim piece. Very little stone and intense mica added, very well purified cemented. Dark grayish (7.5YR 4/1) cemented; both surfaces are red (2.5YR 4/6) coated and polished. Very well cooked. Wheel made.
Comp:

3. 19035-3: A-36. MN: 4.1. Type: 1.1. Bowl rim piece. Moderately-little stone, chalk, less thin chaff added. Black, reddish brown (5YR 4/4) cemented; outer is yellowish brown (5YR 5/6) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1979: abb.4: 7 (Bastam, Urartu)

4. 11005-4: B-32. MN: 8. Type: 1.1. Bowl rim piece. Intense chalk, stone, mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and red (10R 4/6) multi colored, coated and polished. Badly cooked. Hand made.
Comp: Russel 1980: fig.23: 223: 13 (Middle Iron Age)

5. 27003-10: C-35. MN: 7. Type: 1.1. Bowl rim piece. Moderate-little stone, chalk, ceramic powder, mica added. Black (N 2.5) cemented; outer and inner surfaces are reddish brown (5YR 4/4) and black (N 2.5) multi colored, coated and weakly polished. Well cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.159: 9 (Çimentepe, B.C. 900-300)

6. 19035-7: A-36. MN: 3.1. Type: 1.1. Bowl rim piece. Moderate-little stone, chalk, little fine chaff, intense mica added. Gray, dark brown (7.5YR 5/6) cemented; outer and inner surfaces are dark brown (7.5YR 4/6) coated and polished. Well cooked. Made on heavy wheel.
Comp: Sagona and Sagona 2004: fig.159: 9 (Çimentepe, B.C. 900-300)

7. 39000-13: C-33. MN: 1.1. Type: 1.1. Bowl rim piece. Moderate-little stone, chalk, ceramic powder, fine little mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is yellowish reddish (5YR 5/6) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 41: 5 (Qalatgah II, Urartu)

8. 28012-4: B-42. MN: 2. Type: 1.2. Bowl rim piece. Little stone, less mica, fine sand and plant added. Light yellowish brown (10YR 6/4) cemented, black; outer surface is light yellowish brown (10YR 6/4) coated and smoothed; inner surface is light yellowish brown (10YR 6/4) coated and smoothed. Moderately cooked. Hand made.
Comp: Kleiss 1976: abb.1: 6 (Qal'eh Gavur, Urartu)

9. 51003-4: B-21. MN: 4.1. Type: 1.2. Bowl rim piece. Little stone, chalk, sand and mica added. Red (2.5YR 4/6) cemented; outer and inner surfaces are red (2.5YR 5/6) coated and polished. Well cooked. Wheel made.
Comp:

10. 31007-5: A-33. MN: 3.1. Type: 1.2. Bowl rim piece. Coarse-little stone, less mica, sand added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp:

11. 31002-2: A-33. MN: 1.1. Type: 1.2. Bowl rim piece. Little-less stone, sand and mica added. Black (N 2.5) cemented; outer and inner surfaces are very dark gray (10YR 3/1) coated and polished. Well cooked. Hand made.
Comp: Kroll 1976: Abb. 18: 4 (Qiz Qaleh, Urartu-Akamenid)

12. 27027-7: C-35. MN: 1.1. Type: 1.2. Bowl rim piece. Very little stone, chalk, intense fine mica added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are fine black (N 2.5) mica added coated, bright polished. Well cooked. Wheel made.
Comp: Kroll 1976: Abb. 18: 7 (Qiz Qaleh, Urartu-Akamenid)

13. 25006-16: A-35. MN: 1.2. Type: 1.2. Bowl rim piece. Little chalk, mica, fine sand added. Black (10YR 2/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

14. 19035-5: A-36. MN: 1.1. Type: 1.2. Bowl rim piece. Very little chalk, less sand and mica added. Black (10YR 2/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) and dark brown (7.5YR 3/3) multi colored, coated and unpolished. Well cooked. Hand made.
Comp:

15. 15031-11: B-36. MN: 3.1. Type: 1.2. Bowl rim piece. Coarse-moderate stone, fine sand, and mica added. Red (2.5YR 4/8) cemented; outer surface is reddish brown (5YR 5/4) coated and polished; inner surface is reddish brown (5YR 5/4) and dark reddish gray (2.5YR 3/1) multi colored coated and polished. Well cooked. Hand made.
Comp:

16. 24003-8: A-40. MN: 4.1. Type: 1.2. Bowl rim piece. Little, less chalk, intense sand, less mica added. Thick gray pithy, red (5YR 4/8) cemented, outer and inner surfaces are red (5YR 4/6) coated and polished. Well cooked. Made on heavy wheel.
Comp: Sagona and Sagona 2004: fig.138: 2 (Çayıryolu Hill 2, B.C. 900-300).

<u>Fig. 2</u>

17. 23026-5: A-41. MN: 2. Type: 1.3. Bowl rim piece. Little stone and mica added. Yellowish red (5YR 5/6) cemented, gray pithy; outer surface is dark gray (10YR 4/1) and brown (7.5YR 4/4) multi colored coated and polished; inner surface is dark gray (10YR 4/1) and brown (7.5YR 4/4) multi colored coated and polished. Badly cooked. Wheel made.
Comp: Kleiss and Kroll 1980: abb.8:19 (Seqindel, Urartu)

18. 32022-1: C-37. MN: 7. Type: 1.3. Bowl rim piece. Coarse stone, chalk, intense-coarse ceramic powder, mica added. Dark reddish brown (5YR 3/4) cemented; outer surface is brown (7.5YR 4/4) and black (N 2.5) multi colored, coated and polished; inner surface is brown (7.5YR 5/4) coated and polished. Moderately cooked. Wheel made.
Comp: Kroll 1976: Abb. 26: 4 (Ceraqah-e Amir, Urartu)

19. 12005-3: B-33. MN: 7. Type: 1.3. Bowl rim piece. Moderate-little stone, mica, ceramic powder and chalk added. Black (2.5Y 2.5/1) cemented; outer surface is brown (7.5YR 4/2) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp:

20. 19047-1: A-36. MN: 7. Type: 1.3. Bowl rim piece. Very little stone, intense chalk, ceramic powder, mica added. Dark gray (5YR 4/1) cemented; outer and inner surfaces are very dark

gray (5YR 3/1) and dark reddish brown (5YR 3/3) multi colored, coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.141: 7 (Çayıryolu Hill 4, B.C. 800-300).

21. 52004-4: C-14. MN: 2. Type: 1.4. Bowl rim piece. Moderately-little stone, less coarse stone, fine sand, mica and plant added. Grayish brown (10YR 5/2) cemented, gray pithy; outer surface is gray (10YR 5/1) coated and polished; inner surface is gray (10YR 5/1) coated and polished. Badly cooked. Wheel made.
Comp: Sevin 1985: Fig.2: 1 (Elmalık, B.C.6th century)

22. 801-7: S-8. MN: 2. Type: 1.4. Bowl rim piece. Moderate-little stone, fine sand, ceramic powder, mica and chalk added. Dark yellowish brown (10YR 4/4) cemented, gray pithy; outer surface very dark gray (7.5YR 3/1) coated and polished; inner surface is very dark gray (7.5YR 3/1) coated and polished. Badly cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.147: 11 (Değirmentepe, B.C. 900-300).

23. 51000-3: B-21. MN: 1.1. Type: 1.4. Bowl rim piece. Little stone, chalk ceramic powder and intense mica added. Black (N 2.5) cemented, black pithy; outer surface is black (N 3) coated and polished; inner surface is black (N 3) coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.179:11 (Örenşar 4, B.C. 500-330)

24. 51004-3: B-21. MN: 3.1. Type: 1.5. Bowl rim piece. Little stone, sand and mica added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Moderately cooked. Wheel made.
Comp:

25. 14035-1: B-35. MN: 3.1. Type: 1.5. Bowl rim piece. Moderate stone, ceramic powder, less sand, less mica added. Dark brown (7.5YR 5/6) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Moderately cooked. Made on heavy wheel.
Comp: Kaygaz 2002: lev.47: 6 (Karagündüz, Late Iron Age)

26. 52006-1: C-14. MN: 1.1. Type: 1.5. Bowl. Moderately intense little stone, chalk, ceramic powder and mica added. Black (7.5YR 2.5/1) cemented, black pithy; outer surface is dark gray (7.5YR 3/1) coated and polished; inner surface is dark gray (7.5YR 3/1) coated and polished. Moderately cooked. Wheel made.
Comp:

Fig 3

27. 27008-8: C-35. MN: 2. Type: 2.1. Bowl rim piece. Moderate stone, chalk, ceramic powder, intense mica added. Black (N 2.5) cemented; outer and inner surfaces are dark gray (7.5YR 4/1) coated and unpolished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.188: 11 (Çengilertepe, B.C. 500-300)

28. 39001-1: C-33. MN: 1.1. Type: 2.1. Bowl rim piece. Moderate-little stone, chalk, fine sand, intense mica added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are thin black (7.5YR 2.5/1) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: abb.6: 8 (Verahram, Urartu)

29. 50015-2: B-27. MN: 8. Type: 2.1. Bowl rim piece. Little, very less chalk, stone, intense sand added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and reddish brown (5YR 5/4) multi colored, uncoated and unpolished. Well cooked. Wheel made.
Comp:

30. 44000-1: B-14. MN: 7. Type: 2.1. Bowl rim piece. Moderate-little stone, less mica and chalk added. Grayish brown (10YR 4/2) cemented; outer surface is dark gray (10YR 3/1) and brown (10YR 5/3) multi colored, mica added coated and smoothed; inner surface is brown (10YR 5/3) coated and smoothed. Moderately cooked. Hand made.
Comp: Ökse 1988: abb.55 (Kaleköy, Iron Age)

31. 14007-2: B-35. MN: 3.1. Type: 2.1. Bowl rim piece. Fine sand and mica added cement. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are light brown (7.5YR 6/3) coated and polished. There is red (2.5YR 4/6) painted band decoration on the rim. Well cooked. Wheel made.
Comp:

32. 44007-8: B-14. MN: 8. Type: 2.1. Bowl rim piece. Coarse white stone, less chalk, ceramic powder, less mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Badly cooked. Hand made.
Comp: Russel 1980: fig.23: 223: 13 (Middle Iron Age)

33. 18003-4: B-40. MN: 1.1. Type: 2.1. Bowl rim piece. Very little chalk, ceramic powder and intense mica added. Black (N 2.5) cemented; outer surface is brown (7.5YR 5/4) coated and polished, inner surface by the rim is dark red (10R 2.5/6) paint coated. Well cooked. Wheel made.
Comp:

34. 50000-1: B-27. MN: 4.1. Type: 2.1. Bowl rim piece. Very little-less ceramic powder, sand and mica added. Black (N 2.5) cemented; outer surface is thick red (2.5YR 4/6) coated and polished; inner surface is very dark gray (7.5YR 3/1) coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.138: 2 (Çayıryolu Hill 2, B.C. 900-300).

35. 13011-7: B-34. MN: 2. Type: 2.1. Bowl rim piece. Intense-little stone, chalk, ceramic powder, thin chaff added. Brown (7.5YR 4/4) cemented; by the rim surfaces are dark gray (10YR 4/1), uncoated and unpolished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.22: 264.6 (Middle Iron Age)

36. 39009-5: C-33. MN: 2. Type: 2.1. Bowl rim piece. Intense, thin chaff, less stone, chalk, intense ceramic powder added. Dark reddish brown (2.5YR 3/3) cemented; by the rim surfaces are dark gray (10YR 4/1) coated and polished. Moderately cooked. Made on heavy wheel.
Comp:

37. 26011-1: A-34. MN: 9. Type: 2.1. Bowl rim piece. Very well purified, tight cemented, less mica added. Brown (7.5YR 5/4) cemented; by the rim surfaces are brown (7.5YR 5/4) coated, dull red (10R 4/4) paint band decorated on the rim surrounding all the neck, unpolished. Very well cooked, Wheel made.
Comp:

38. 51007-2: B-21. MN: 3.1. Type: 2.1. Bowl rim piece. Little stone, fine sand, ceramic powder and mica added. Reddish brown (5YR 4/4) cemented; outer surface is reddish brown (5YR 4/4) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp: Ökse 1988: abb.745 (Kaleköy, Iron Age)

39. 10007-1: B-32. MN: 4.1. Type: 2.1. Bowl rim piece. Thin chaff, less stone, intense ceramic powder, chalk and mica added. Gray pithy, red (2.5YR 5/8) cemented; outer surface is very dark gray (10YR 3/1), dark brown (7.5YR 5/6) and red (7.5YR 5/4) multi colored, coated and polished. Well cooked. Wheel made.

Comp: Sagona and Sagona 2004: fig.188: 12 (Çengilertepe, B.C. 900-300).

Fig. 4

40. 15000-13: B-36. MN: 3.2. Type: 2.2. Bowl rim piece. Less chalk, mica, ceramic powder, intense large, moderate stone added. Brown (7.5YR 3/2) cemented; outer and inner surfaces are brown (7.5YR 4/3) coated and polished. Moderately cooked. Wheel made.
Comp:

41. 24030-3: A-40. MN: 3.1. Type: 2.2. Bowl rim piece. Less chalk, mica, chaff, moderate sand, intense stone added. Reddish brown (5 YR 4/4) cemented; outer and inner surfaces are reddish brown (2.5 YR 4/4) coated and polished. Moderately cooked. Wheel made.
Comp: Russel 1980: fig.23: 266.30 (Middle Iron Age)

42. 24024-2: A-40. MN: 3.1. Type: 2.2. Bowl rim piece. Less stone, chalk, mica, sand, ceramic powder added. Brown (7.5YR 4/4) cemented; outer surface is brown (7.5YR 4/2) coated and polished; inner surface is dark gray (2.5Y 4/1) coated and polished. Moderately cooked. Hand made.
Comp:

43. 27017-9: C-35. MN: 2. Type: 2.2. Bowl rim piece. Less stone, chalk, mica, ceramic powder, intense sand added. Dark gray (2.5Y 4/1) cemented; outer surface is light gray (5Y 5/1) coated and polished; inner surface is gray (2.5Y 5/1) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: abb.6: 22 (Verahram, Urartu); Kroll 1979: Abb.2: 3 (Qal'eh Vaziri, Urartu)

44. 800-4: S-8. MN: 8. Type: 2.2. Bowl rim piece. Intense ceramic powder, little stone, intense chalk and mica added. Black pithy, red (10R 4/8) cemented; outer and inner surfaces are black (10R 2.5/1) and red (10R 4/6) multi colored, coated and polished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 213: 13 (Middle Iron Age)

45. 11000B-14: B-32. MN: 7. Type: 2.2. Bowl rim piece. Fine chaff, less stone, intense ceramic powder, chalk and mica added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are brown (7.5YR 4/4) and black (N 2.5) multi colored, coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.179:11 (Örenşar 4, B.C. 500-330)

46. 25001-11: A-35. MN: 3.1. Type: 2.2. Bowl rim piece. Less chalk, mica, sand, moderate stone added. Dark brown (7.5YR 3/3) cemented; outer and inner surfaces are light brown (7.5 YR 6/4) coated and polished. Well cooked. Hand made.
Comp: Kaygaz 2002: lev.20: 4 (Karagündüz, Late Iron Age)

47. 30004-4: B-43. MN: 3.1. Type: 2.2. Bowl rim piece. Moderate-little stone, intense sand, ceramic powder, mica added. Black (N 2.5) cemented; outer surface is brown (7.5YR 5/6) coated and polished; inner surface is brown (10YR 5/3) coated and polished. Well cooked. Made on heavy wheel.
Comp: Sevin 1985: Fig.2: 1 (Elmalık, B.C. 6th century)

48. 24014-10: A-40. MN: 3.1. Type: 2.2. Bowl rim piece. Moderate chalk, ceramic powder, mica added. Black (N 2.5) cemented; outer and inner surfaces are brown (7.5YR 3/3) coated and polished. Well cooked. Made on heavy wheel.
Comp: Sevin 1985: Fig.2: 3 (Elmalık, B.C. 6th century)

49. 44004-13: B-14. MN: 1.1. Type: 2.2. Bowl rim piece. Less-little chalk, sand, intense mica added. Black (N 2.5) cemented; outer and inner surfaces are thin black (N 2.5) coated and polished. Well cooked. Made on heavy wheel.
Comp: Sevin 1985: Fig.5: 7 (Yeşilalinner 2, B.C.6th century); Ökse 1988: abb.54 (Kaleköy, Iron Age)

50. 20011-7: B-39. MN: 1.1. Type: 2.2. Bowl rim piece. Moderately intense moderate-little stone, chalk and mica added. Black (10YR 2/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Well cooked. Hand made.
Comp: Summers 1993: Fig.5: 7 (Akamenid?); Goff 1985: fig 2: 28 (Med).

51. 12035-2: B-33. MN: 3.2. Type: 2.3. Bowl rim piece. Very little, less ceramic powder, mica, sand added. Reddish yellow (7.5YR 6/8) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Very well cooked. Wheel made.
Comp:

52. 28008-15: B-42. MN: 2. Type: 2.3. Bowl rim piece. Less stone, chalk, mica, ceramic powder, intense sand added. Dark gray (7.5YR 4/1) cemented; outer and inner surfaces are gray (7.5YR 5/1) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.179:11 (Örenşar 4, B.C. 500-330)

53. 15040-3: B-36. MN: 1.1. Type: 2.3. Bowl rim piece. Little and less stone, ceramic powder, mica added. Black (7.5YR 2.5/1) cemented; outer surface is dark gray (7.5YR 4/1) coated and polished; inner surface is black (N 2.5) coated and polished. Well cooked. Hand made.
Comp:

54. 37000-4: C-36. MN: 3.1. Type: 2.3. Bowl rim piece. Less mica, chaff, moderate chalk, little stone added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Moderately cooked. Hand made.
Comp:

55. 43007-4: A-43. MN: 3.1. Type: 2.3. Bowl rim piece. Very little-less stone, chalk, intense mica added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Well cooked. Made on heavy wheel.
Comp: Summers 1993: fig.9: 5; Kroll 1976: abb.10: 20 (Qaleh Siah, Urartu).

<u>Fig 5</u>

56. 32023-6: C-37. MN: 8. Type: 3.1. Bowl rim piece. Moderate-little stone, intense chalk, fine chaff, little mica added. Black pithy, yellowish red (5YR 4/6) cemented; outer surface is black (N 2.5) and red (10R 4/6) multi colored, coated, polished. Badly cooked. Wheel made.
Comp:

57. 39007-3: C-33. MN: 7. Type: 3.1. Bowl rim piece. Intense coarse-moderate stone, fine sand, chalk and mica added. Black (N 2.5) cemented; outer surface is yellowish brown (5YR 5/6) coated and unpolished; inner surface is yellowish brown (5YR 5/6) coated and unpolished. Moderately cooked. Hand made.
Comp: Ökse 1988: abb.797 (Kaleköy, Iron Age)

58. 14035-3: B-35. MN: 4.2. Type: 3.1. Bowl rim piece. Coarse, intense stone, ceramic powder, very fine mica, less fine chaff added. Very dark gray (10YR 3/1) cemented; outer surface is reddish brown (2.5YR 4/4) and dark reddish gray (2.5YR 4/1) multi colored, coated and polished; inner surface is red (10R 4/6) coated and polished. Moderately cooked. Wheel made.
Comp:

59. 12002-3: B-33. MN: 2. Type: 3.1. Bowl rim piece. Less chalk, quartz, mica, chaff, moderate sand, intense stone added. Dark gray (10YR 3/1) cemented; outer surface is grayish brown (2.5Y 5/2) coated and polished; inner surface is dark reddish gray (2.5 YR 4/1) coated and polished. Well cooked. Wheel made.
Comp:

60. 20007-9: B-39. MN: 3.1. Type: 3.1. Bowl rim piece. Little chalk, mica, sand, moderate stone added. Brown (7.5YR 4/4) cemented; outer surface is brown (7.5YR 5/3) coated and weakly polished; inner surface is reddish brown (5YR 5/4) coated and polished. Well cooked. Wheel made.
Comp:

61. 14020-1: B-35. MN: 5. Type: 3.1. Bowl rim piece. Very little stone, mica, chalk, chaff added. Yellowish red (5YR 5/6) cemented; outer and inner surfaces are reddish yellow (5YR 6/6), coated and polished. Moderately cooked. Hand made.
Comp: Kaygaz 2002: Plate.28: 5 (Karagündüz, Late Iron Age)

62. 12005-8: B-33. MN: 8. Type: 3.2. Bowl rim piece. Moderate, coarse stone, chalk, thin chaff, mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) and brown (10YR 5/3) multi colored, coated and polished. Badly cooked. Hand made.
Comp:

63. 11005-2: B-32. MN: 4.2. Type: 3.2. Bowl rim piece. Little mica and chalk added. Red (10R 4/6) cemented, black pithy; outer surface is red (10R 4/6) coated and polished; inner surface is red (10R 4/6) coated and polished. Badly cooked. Wheel made.
Comp:

64. 27002-6: C-35. MN: 4.1. Type: 3.2. Bowl rim piece. Little stone, fine sand and mica added cement. Red (2.5YR 5/6) cemented; at outer surface the main part of container is thick red (10R 4/6) coated, thick dark red coated for the inside (10R 3/6). Well cooked. Wheel made.
Comp:

65. 35004-1: C-34. MN: 8. Type: 3.2. Bowl rim piece. Very little stone, ceramic powder added. Brown cemented (7.5YR 4/4); outer surface is brown (7.5YR 4/3) uncoated and unpolished; inner surface is dark reddish (10R 3/6) and black (N 2.5) multi colored, red (10R 3/6) pain coated. Moderately cooked. Wheel made.
Comp: Ökse 1988: abb.278 (Değirmentepe, Iron Age)

66. 31000-3: A-33. MN: 8. Type: 3.2. Bowl rim piece. Very little stone, intense sand, mica added. Dark gray (5YR 4/1) cemented; outer and inner surfaces are black (N 2.5) and dark red (10R 3/6) multi colored, coated and bright polished. Well cooked. Wheel made.
Comp:

Fig 6

67. 51004-6: B-21. MN: 4.2. Type: 3.3. Bowl rim piece. Moderate-little stone, chalk, chaff and mica added. Reddish brown (5Yr 4/4) cemented; outer surface is red (10R 4/6) coated and polished; inner surface is red (10R 4/6) coated and polished. Moderately cooked. Wheel made.
Comp:

68. 19009-2: A-36. MN: 1.1. Type: 3.3. Bowl rim piece. Less chalk, mica, ceramic powder, moderate stone, intense sand added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Sagona et al. 1995: fig.11: 5 (Sos Tumulus)

69. 37012-1: C-36. MN: 3.1. Type: 3.3. Bowl rim piece. Moderate stone, ceramic powder, little sand, little mica added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp: Kaygaz 2002: Plate.28: 4 (Karagündüz, Late Iron Age)

70. 40008-5: C-32. MN: 2. Type: 3.3. Bowl rim piece. Less stone, chalk, mica, ceramic powder, intense sand added. Dark gray (2.5 Y4/1) cemented; outer and inner surfaces are gray (5Y 5/1) coated and polished. Moderately cooked. Hand made.
Comp: Sumner 1986: İll 1:j (Akamenid)

71. 801-2: S-8. MN: 3.1. Type: 3.3. Bowl rim piece. Moderate stone, intense ceramic powder and mica added. Very dark grayish brown (10YR 3/2) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Well cooked. Wheel made.
Comp:

72. 52004-6: C-14. MN: 2. Type: 3.4. Bowl rim piece. Moderate-less stone, mica, chalk and little ceramic powder added. Very dark gray (10YR 3/1) cemented; outer surface is dark grayish brown (10YR 4/2) coated and polished; inner surface is dark grayish brown (10YR 4/2) coated and polished. Moderately cooked. Wheel made.
Comp: Sumner 1986: İll 1:d (Akamenid).

73. 23023-7: A-41. MN: 2. Type: 3.4. Bowl rim piece. Moderate-less stone, fine sand, mica, little chalk and plant added. Black (2.5Y 2.5/1) cemented; outer surface is grayish brown (10YR 5/2) coated and polished; inner surface is grayish brown (10YR 5/2) coated and polished. Moderately cooked. Wheel made.
Comp:

74. 804-19: S-8. MN: 7. Type: 3.4. Bowl rim piece. Coarse intense chalk, stone, ceramic powder added. Reddish brown (5YR 4/4) cemented. Outer and inner surfaces are black (5YR 2.5/1) and brown (7.5YR 4/3) multi colored coated and polished. Moderately cooked. Wheel made.
Comp: Summers 1993: fig.9: 1; Sagona and Sagona 2004: fig.160: 1 (Çimentepe, B.C. 600-200); Sagona and Sagona 2004: fig.138: 17 (Çayıryolu Hill 3, B.C. 800-600).

75. 18015-1: B-40. MN: 3.1. Type: 3.4. Bowl rim piece. Little chalk, mica, chaff, moderate sand, intense stone added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Well cooked. Made on heavy wheel.
Comp: Summers 1993: fig.5: 9 (Akamenid?); Parker 1999: fig.2: 8 (Middle Iron Age)

Fig. 7

76. 51003-2: B-21. MN: 3.1. Type: 4.1. Bowl rim piece. Fine sand and mica added. Red (2.5YR 5/6) cemented, black pithy; outer surface is reddish brown (5YR 4/4) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp: Kroll 1976: Abb. 3: 4 (Sangar, Urartu).

77. 53000-3: B-12. MN: 7. Type: 4.1. Bowl rim piece. Little stone, very intense sand, chalk, mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and reddish brown (5YR 4/4) multi colored, coated and unpolished. Moderately cooked. Hand made.
Comp:

78. 19012-4: A-36. MN: 7. Type: 4.1. Bowl rim piece. Little-coarse stone, chalk, ceramic powder, fine chaff, intense mica added. Dark brown (7.5YR 3/4) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/4) multi colored, coated and polished. Moderately cooked. Hand made.

Comp: Kleiss and Kroll 1980: abb.7: 21 (Seqindel, Urartu); Ökse 1988: abb.733 (Kaleköy, Iron Age); Sagona and Sagona 2004: fig.154: 1 (Eymür Castle, B.C. 800-300).

79. 26018-3: A-34. MN: 8. Type: 4.1. Bowl rim piece. Little chalk, intense mica, ceramic powder added. Gray pithy, red (2.5YR 4/8) cemented; outer and inner surfaces are very dark gray (5YR 3/1) and red (2.5YR 4/8) multi colored, coated and polished. Moderately cooked. Hand made.
Comp:

80. 15068-3: B-36. MN: 4.1. Type: 4.1. Bowl rim piece. Tightly cemented, very little chalk, stone and mica added. Yellowish red (5YR 5/6) cemented; inner surface is red (10R 4/8) coated, outer surface red (10R 4/8) coated until neck, dull yellow (cream) (2.5Y 7/3) coated from the neck and black (N 2.5) point and red (10R 4/8) ribbon-shaped paint decorated at the outer surface. Well cooked. Wheel made.
Comp:

81. 11000A-4: B-32. MN: 1.2. Type: 4.1. Bowl rim piece. Less mica, little stone and ceramic powder added. Dark gray (10YR 3/1) cemented; outer surface is dark gray (10YR 3/1) coated and polished; inner surface is dark gray (5YR 3/1) coated and polished. Well cooked. Hand made.
Comp: Kroll 1976: Abb. 3: 4 (Sangar, Urartu).

82. 27027-10: C-35. MN: 1.1. Type: 4.1. Bowl rim piece. Moderate stone, chalk and mica added. Dark gray (7.5YR 4/1) cemented; outer surface is dark gray (7.5YR 3/1) and brown (7.5YR 4/3) multi colored coated and polished; inner surface is black (N 2.5) uncoated and unpolished. Well cooked. Wheel made.
Comp: Sagona 1999: fig.4: 4 (Kevenlik, Iron Age).

83. 15043-4: B-36. MN: 3.1. Type: 4.1. Bowl rim piece. Intense coarse moderate stone, fine sand, less mica and chalk added. Reddish brown (5YR 4/4) cemented, gray pithy; outer surface is very dark gray (5YR 3/1) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp:

84. 31004-9: A-33. MN: 7. Type: 4.1. Bowl rim piece. Little-moderate stone, ceramic powder, little chalk, intense mica added. Black (N 2.5) cemented; outer and inner surfaces are brown (7.5YR 4/4) and black (N 2.5) multi colored, coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.116: 4 (Danışment, B.C. 500-330).

85. 31004-23: A-33. MN: 4.1. Type: 4.1. Bowl rim piece. Coarse-moderate stone, fine sand and little mica added. Yellowish red (5YR 5/6) cemented, black pithy; outer surface is red (2.5YR 4/6) coated and polished; inner surface is red (2.5YR 4/6) coated and polished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.175: 4 (Kilisetepe 2, B.C. 500-330).

86. 19039-1: A-36 MN: 7. Type: 4.1. Bowl rim piece. Very coarse stone, chalk, intense chaff and less mica added. Black pithy, yellowish red (5YR 4/6) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/6) multi colored, coated and weakly polished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.109:6 (İncili, B.C.800-300); fig.138: 18 (Çayıryolu Hill 3, B.C. 900-300)

87. 32040-2: C-37. MN: 1.1. Type: 4.1. Bowl rim piece. Coarse-moderate stone, chaff and mica added. Black (2.5Y 2.5/1) cemented; outer surface is black (2.5Y 2.5/1) coated and smoothed; inner surface is grayish brown (10YR 4/2) coated and smoothed. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.116: 4 (Danışment, B.C. 500-330).

88. 26020-1: A-34. MN: 7. Type: 4.1. Bowl. Intense coarse-moderate stone, mica and fine sand added. Black (2.5Y 2.5/1) cemented; outer surface is black (N 2.5) and light brown (7.5YR 6/4) multi colored, coated and smoothed; inner surface is black (N 2.5) and light brown (7.5YR 6/4) multi colored, coated and smoothed. Badly cooked. Hand made.
Comp:

89. 11000B-10: B-32. MN: 8. Type: 4.1. Bowl rim piece. Very coarse stone, chalk, mica added. Gray pithy, dark reddish brown (7.5YR 3/3) cemented; outer and inner surfaces are black (N 2.5) and yellowish reddish (5YR 4/6) multi colored, coated and unpolished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.116: 4 (Danışment, B.C. 500-330).

90. 14052-1: B-35. MN: 1.1. Type: 4.1. Bowl rim piece. Intense coarse stone, chalk, mica and chaff added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated**;** inner surface is black (N 2.5) coated. Moderately cooked. Hand made.
Comp: Kroll 1979: Abb. 7: 5 (Said Tadjeddin, Urartu).

91. 19035-9: A-36. MN: 1.1. Type: 4.1. Bowl rim piece. Less chalk, mica, ceramic powder, moderate stone, intense sand added. Black (7.5YR 2.5/1) cemented; outer surface is reddish brown (2.5YR 4/3) coated and polished; inner surface is black (10 YR 2/1) coated and polished. Moderately cooked. Hand made.
Comp: Kleiss and Kroll 1980: abb.7: 21 (Seqindel, Urartu); Ökse 1988: abb.733 (Kaleköy, Iron Age); Sagona and Sagona 2004: fig.154: 1 (Eymür Castle, B.C. 800-300).

Fig. 8

92. 27010-3: C-35. MN: 1.1. Type: 4.1. Bowl rim piece. Coarse-moderate stone, chaff and less mica added. Dark gray (10YR 3/1) cemented, black pithy; outer surface is dark gray (10YR 3/1) coated and polished; inner surface is dark gray (10YR 3/1) coated and polished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.116: 4 (Danışment, B.C. 500-330).

93. 27027-11: C-35. MN: 8. Type: 4.1. Bowl rim piece. Coarse, intense stone, sand, chalk, ceramic powder, intense mica, less thin chaff added. Black (N 2.5) cemented; outer and inner surfaces are very dull red (10R 2.5/2) and black (N 2.5) multi colored, coated and polished. Badly cooked. Hand made.
Comp: Ökse 1988: abb.779 (Değirmentepe, Iron Age).

94. 15031-6: B-36. MN: 1.1. Type: 4.1. Bowl rim piece. Intense chalk, stone, fine sand, intense mica added. Black (N 2.5) pithy, very dark brown (7.5YR 2.5/2) cemented; outer and inner surfaces are black (10YR2/1) and dark grayish brown coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 1: 10 (Qaleh Khezerlu, Urartu).

95. 24022: A-40. MN: 2. Type: 4.1. Bowl rim piece. Little-less stone, ceramic powder, mica added. Very dark gray (7.5YR 3/1) cemented; outer and inner surfaces are dark gray (5YR 4/1) coated and polished. Well cooked. Wheel made.
Comp:

96. 804-1: S-8. MN: 4.1. Type: 4.1. Bowl rim piece. Very little stone, sand and intense mica added. Red (2.5YR 4/8) cemented; outer surface is red (2.5YR 4/6), uncoated and polished; inner surface is light brown (7.5YR 6/4), uncoated and polished. Well cooked. Hand made.
Comp: Ökse 1988: abb. 782 (Değirmentepe, Iron Age).

97. 804-4: S-8. MN: 6. Type: 4.1. Bowl rim piece. Less-coarse, moderate stone, moderate-fine sand, chalk and less mica added. Thick gray pithy, brown (7.5YR 5/4) cemented; outer surface is black (N 2.5) and light brownish gray (10YR 6/2) (cream) multi colored, coated and polished; inner surface is dull yellowish olive green (5Y 6/4) smoothed and polished. Badly cooked. Hand made.
Comp: Parker 1999: fig.1: 1 (B.C. 1000- Late Iron Age); Russel 1980: fig.22: 244: 3 (Middle Iron Age).

98. 20012-3: B-39. MN: 3.2. Type: 4.2. Bowl rim piece. Moderate chalk, ceramic powder, intense mica added. Gray pithy dark brown (7.5YR 5/6) cemented; outer surface is dark brown (7.5YR 3/3) coated and bright polished; inner surface is brown (10YR 4/3) coated and bright polished. Well cooked. Made on heavy wheel.
Comp: Russel 1980: fig.23: 194.18 (Middle Iron Age); Kroll 1976: abb.5: 10 (Verahram, Urartu).

99. 24015-5: A-40. MN: 1.1. Type: 4.2. Bowl rim piece. Little chalk, mica, ceramic powder, moderate stone, intense sand added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp:

100. 50025-2: B-27. MN: 7. Type: 4.2. Bowl rim piece. Coarse stone, chalk, intense ceramic powder, little mica added. Very dark brown (7.5YR 3/1) cemented; outer and inner surfaces are brown (7.5YR 5/4) and black (7.5YR 2.5/1) multi colored, coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 6: 31 (Verahram, Urartu).

101. 20013-2: B-39. MN: 8. Type: 4.3. Bowl rim piece. Moderate stone, intense mica, chalk added. Red (10R 4/8) cemented; outer and inner surface are black (5YR 2.5/1) and red (10R 4/6) multi colored, coated and unpolished. Moderately cooked. Hand made.

Fig. 9

102. 19035-4: A-36. MN: 3.1. Type: 4.4. Bowl rim piece. Moderate stone, chalk, mica, ceramic powder, chaff added. Red (10R 4/6) cemented; outer surface is red (2.5YR 4/6) coated and polished; inner surface is brown (7.5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp: Goff 1985: fig 2: 20 (Med).

103. 15064-1: B-36. MN: 3.1. Type: 4.4. Bowl rim piece. Intense coarse-moderate stone, fine sand, chalk and less mica added. Dark reddish brown (5YR 3/3) cemented, dark gray pithy; outer surface is dark reddish brown (5YR 3/1) coated and polished; inner surface is dark reddish brown (5YR 3/3) coated and polished. Badly cooked. Hand made.
Comp:

104. 15043-5: B-36. MN: 3.1. Type: 4.4. Bowl rim piece. Intense coarse-moderate stone, fine sand, less mica and chalk added. Reddish brown (5YR 4/4) cemented; outer surface is reddish brown (5YR 5/4) coated and polished; inner surface is reddish brown (5YR 5/4) coated and polished. Badly cooked. Hand made.
Comp:

105. 42000-1: C-31. MN: 2. Type: 4.4. Bowl rim piece. Little chalk, quartz, mica, chaff, moderate sand, intense stone added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are gray (2.5Y 5/1) coated and polished. Moderately cooked. Hand made.

106. 32012-2: C-37. MN: 7. Type: 4.4. Bowl rim piece. Coarse stone, chalk, intense ceramic powder, little mica added. Black pithy, dark brown (7.5YR 5/4) cemented; outer and inner surfaces are very dark gray (7.5YR 3/1) coated and unpolished. Moderately cooked. Hand made.
Comp:

107. 12035-6: B-33. MN: 1.1. Type: 4.4. Bowl rim piece. Moderate stone, fine sand, intense mica added. Black (N 2.5) cemented; outer and inner surfaces are black (7.5YR 2.5/1) coated and polished. Moderately cooked. Hand made.
Comp:

108. 26002-12: A-34. MN: 1.1. Type: 4.4. Bowl rim piece. Moderate stone, fine mica, chalk, ceramic powder added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.159: 10 (Çimentepe, B.C. 800-300)

109. 39007-4: C-33. MN: 1.1. Type: 4.4. Bowl rim piece. Little stone, intense mica and chalk added. Black (N 2.5) cemented; outer surface is black (N 2.5) uncoated and polished; outer surface is black (N 2.5) uncoated and polished. Well cooked, Hand made.
Comp: Russel 1980: fig.23: 223: 13 (Middle Iron Age); Kroll 1976: Abb. 1: 10 (Qaleh Khezerlu, Urartu)

110. 26021-1: A-34. MN: 7. Type: 4.4. Bowl rim piece. Little stone, intense little chalk, intense mica, ceramic powder added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/3) multi colored, coated and polished. Well cooked. Hand made.
Comp: Sagona et al. 1992: fig.6: 1 (Büyüktepe, Iron Age); Goff 1985: fig 2: 20 (Med).

111. 37038-1: C-36. MN: 1.1. Type: 4.4. Bowl rim piece. Coarse stone, chalk, chaff and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) uncoated and polished; inner surface is black (N 2.5) uncoated and polished. Badly cooked. Hand made.
Comp: Summers 1993: fig.8: 9; Marro and Özfırat 2004: Plate XIV: 6 (Middle Iron Age).

112. 32029-1: C-37. MN: 3.1. Type: 4.4. Bowl rim piece. Moderate-little stone, fine sand, mica and plant added. Red (10R 5/8) cemented; outer surface is red (2.5YR 5/6) coated and polished; inner surface is dark reddish brown (5YR 3/3) coated and polished. Badly cooked. Hand made.
Comp: Kroll 1976: Abb. 26: 7 (Ceraqah-e Amir, Urartu)

113. 44007-7: B-14. MN: 1.1. Type: 4.4. Bowl rim piece. Coarse chalk, stone, ceramic powder, fine chaff, less mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is very dark gray (7.5.YR 3/1) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 26: 7 (Ceraqah-e Amir, Urartu)

114. 52004-2: C-14. MN: 1.1. Type: 4.4. Bowl rim piece. Coarse stone, chaff, chalk, ceramic powder and mica added. Black (7.5YR 2.5/1) cemented, black pithy; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) polished. Badly cooked. Wheel made.
Comp: Kroll 1976: Abb. 26: 7 (Ceraqah-e Amir, Urartu)

115. 44000A-2: B-14. MN: 2. Type: 4.4. Bowl rim piece. Moderate-little stone, less coarse stone, mica, chalk and fine sand added. Dark gray (10YR 3/1) cemented; outer surface is light

gray (10YR 7/1) coated and polished; inner surface is dull white (2.5Y 8/1) coated and unpolished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 223: 13 (Middle Iron Age)

Fig. 10

116. 26008-1: A-34. MN: 4.1. Type: 4.5. Bowl rim piece. Intense, coarse stone, mica added. Black pithy, yellowish red (5YR 4/6) cemented; outer and inner surfaces are yellowish red (5YR 4/6) coated and polished. Moderately cooked. Hand made.
Comp: Sumner 1986: İll 2:h (Akamenid).

117. 24008-3: A-40. MN: 5. Type: 4.5. Bowl rim piece. Moderate-les stone, intense sand and mica added. Red (2.5YR 4/6) cemented; outer and inner surfaces are yellowish red (5YR 5/6) coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 6: 9 (Verahram, Urartu).

118. 44004-6: B-14. MN: 8. Type: 4.5. Bowl rim piece. Very coarse stone, intense coarse chalk, ceramic powder, intense mica added. Black (N 2.5) pithy, Gray (5YR 5/1) pithy, red (2.5YR 4/6) cemented; outer surface is black (N 2.5) and dark red (2.5YR 5/6) and dark brown (7.5YR 3/3) multi colored, coated and polished; inner surface is red (2.5YR 4/8) coated and polished. Badly cooked. Hand made.
Comp: Sumner 1986: İll 2:h (Akamenid).

119. 39011-3: C-33. MN: 1.1. Type: 4.5. Bowl rim piece. Very little stone, ceramic powder, chalk and intense mica added. Black (N 2.5) cemented, black pithy; outer surface is black (N 2.5) coated and polished; inner surface black (N 2.5) coated and polished. Well cooked. Hand made.
Comp: Sumner 1986: İll 2:h (Akamenid).

120. 44006-1: B-14. MN: 2. Type: 4.5. Bowl rim piece. Moderate-little stone, less fine sand, mica and ceramic powder added. Dark gray (10YR 4/1) cemented; outer surface is gray (10YR 5/1) coated and polished; inner surface is gray (10YR 5/1) coated and polished. Moderately cooked. Hand made.
Comp: Ökse 1988: abb.793 (Değirmentepe, Iron Age).

121. 27008-10: C-35. MN: 7. Type: 4.6. Bowl rim piece. Moderate stone, chalk, mica added. Black pithy, brown (7.5YR 4/4) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/4) multi colored, coated and outer surfaces are polished. Moderately cooked. Hand made.
Comp:

122. 32019-4: C-37. MN: 3.1. Type: 4.6. Bowl rim piece. Little-less stone, chalk, ceramic powder, mica added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Well cooked. Wheel made.
Comp: Sumner 1986: İll 2:d (Akamenid).

Fig. 11

123. 25008-1: A-35. MN: 3.1. Type: 5.1. Bowl rim piece. Moderate-coarse stone, intense chalk, ceramic powder, less mica added. Black (N 2.5) cemented; outer and inner surfaces are thick brown (7.5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp:

124. 19022-7: A-36. MN: 8. Type: 5.1. Bowl rim piece. Little stone, chalk, very intense mica, ceramic powder added. Black pithy, dark reddish brown (2.5YR 3/4) cemented; outer and inner surfaces are black (N 2.5) and red (2.5YR 4/8) multi colored, coated and polished. Well cooked. Hand made.
Comp:

125. 32028: C-37. MN: 1.1. Type: 5.1. Bowl rim piece. Coarse stone, chalk, mica added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are black (7.5YR 2.5/1) coated and polished. Badly cooked. Hand made.
Comp:

126. 27003-11: C-35. MN: 8. Type: 5.1. Bowl rim piece. Intense mica, less stone, chalk, sand added. Black pithy, red (7.5YR 5/6) cemented; outer and inner surfaces are black (N 2.5) and red (7.5YR 5/6) multi colored, coated and polished. Badly cooked. Hand made.
Comp:

127. 11000B-5: B-32. MN: 1.1. Type: 5.1. Bowl rim piece. Intense moderate-little stone, less mica and chalk added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is dark grayish brown (10YR 3/2) coated and polished. Badly cooked. Hand made.
Comp:

128. 31004-21: A-33. MN: 8. Type: 5.1. Bowl rim piece. Very little stone, chalk, intense mica added. Black pithy, dark brown (7.5YR 4/6) cemented; outer and inner surfaces are black (7.5YR 2.5/1) and red (2.5YR 4/6) multi colored, coated and polished. Well cooked. Hand made.
Comp:

129. 15071-2: B-36. MN: 1.1. Type: 5.1. Bowl rim piece. Intense coarse-moderate stone, less mica, chalk and chaff added. Black (7.5YR 2.5/1) cemented; outer surface is black (N 2.5) and reddish brown (5YR 4/3) multi colored, coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp:

130. 32029-5: C-37. MN: 2. Type: 5.1. Bowl rim piece. Coarse stone, chalk, ceramic powder, intense mica added. Fine black pithy, yellowish red (5YR 4/6) cemented; outer and inner surfaces are very dark gray (7.5YR 3/1) and very dark grayish brown (10YR 3/2) multi colored, coated and polished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.155: 11 (Dikmetaş, B.C. 800-300).

131. 32040-1: C-37. MN: 1.1. Type: 5.1. Bowl rim piece. Moderate stone, chalk, less mica, fine chaff added. Dark brown (7.5YR 3/3) cemented; outer surface is very dark gray (7.5YR 3/1) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.155: 11 (Dikmetaş, B.C. 800-300).

132. 12000-2: B-33. MN: 4.1. Type: 5.1. Bowl rim piece. Little, intense stone, chalk, fine mica added. Very dark gray (10YR 3/1) cemented; outer surface is red (2.5YR 4/8) and light yellowish brown (2.5Y 6/3) multi colored, coated and polished; inner surface is light yellowish brown (2.5Y 6/3) coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.155: 11 (Dikmetaş, B.C. 800-300).

133. 32025-5: C-37. MN: 1.1. Type: 5.1. Bowl rim piece. Intense little stone, fine sand, less mica and ceramic powder added. Black (N 2.5) cemented; outer surface is black (N 2.5) and

brown (7.5YR 4/4) multi colored coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Kleiss 1976: abb.2: 25 (Qal'eh Gavur, Urartu).

134. 39000-12: C-33. MN: 1.1. Type: 5.1. Bowl rim piece. Intense coarse-moderate stone, ceramic powder, silver and gold colored mica, chaff and chalk added. Black (7.5YR 2.5/1) cemented, black pithy; outer surface is black (N 3) mica added coated and polished; inner surface is brown (7.5YR 4/6) mica added coated and polished. Badly cooked. Hand made.
Comp: Comp: Kleiss 1976: abb.2: 25 (Qal'eh Gavur, Urartu).

135. 50025B-1: B-27. MN: 3.1. Type: 5.1. Bowl rim piece. Fine sand, coarse-less stone, ceramic powder, fine chaff, mica added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp: Kaygaz 2002: lev.22: 3 (Karagündüz, Late Iron Age).

136. 44004-4: B-14. MN: 1.1. Type: 5.1. Bowl rim piece. Intense moderate stone, mica, chalk and less chaff added. Dark gray (7.5YR 3/1) cemented, black pithy; outer surface is black (N 2.5) coated and polished; inner surface is mica added black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp:

<u>Fig. 12</u>

137. 25007: A-35. MN: 7. Type: 5.2. Bowl rim piece. Moderately intense little stone, mica, chalk added. Very dark grayish brown (10YR 3/2) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/3) multi colored, coated and polished. Moderate cooked. Hand made.
Comp:

138. 27007: C-35. MN: 7. Type: 5.2. Bowl rim piece. Moderately intense little stone, mica and chalk added. Dark reddish brown (5YR 3/2) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/3) coated and polished. Moderately cooked. Hand made.
Comp:

139. 32001-2: C-37. MN: 5. Type: 5.2. Bowl rim piece. Moderately intense little stone, mica and chalk added. Red (2.5YR 5/8) cemented, dark gray pithy; outer surface is light red (2.5YR 6/6) coated and smoothed; inner surface is black (N 2.5) coated and smoothed. Moderately cooked. Hand made.
Comp:

140. 14020-4: B-35. MN: 3.1. Type: 5.2. Bowl rim piece. Very little ceramic powder, chalk, fine, less mica added. Dark gray (7.5YR 4/1) cemented, outer and inner surfaces are brown (7.5YR 5/3) coated and polished. Well cooked. Made on heavy wheel.
Comp: Comp: Kleiss 1976: abb.2: 25 (Qal'eh Gavur, Urartu)

141. 14024-4: B-35. MN: 8. Type: 5.2. Bowl rim piece. Little stone, chalk, less mica, ceramic powder added. Gray pithy, yellowish red (5YR 4/6) cemented; outer surface is red (2.5YR 4/6) and reddish black (2.5YR 2.5/1) multi colored coated, polished; inner surface is very dark gray (7.5YR 3/1) coated and polished. Well cooked. Wheel made.
Comp:

142. 14010-5: B-35. MN: 8. Type: 5.2. Bowl rim piece. Moderate stone, intense mica, chalk, ceramic powder added. Black cemented (N 2/5) cemented; outer surface is red (2.5YR 5/6) coated and unpolished; inner surface is black (N 2.5) and red (2.5YR 5/6) multi colored, coated and unpolished. Moderately cooked. Hand made.

Comp: Kaygaz 2002: lev.23: 7 (Karagündüz, Late Iron Age)

143. 12033-2: B-33. MN: 5. Type: 5.2. Bowl rim piece. Little chalk, mica, moderate sand, coarse and moderate stone added. Yellowish red (5YR 5/6) cemented; outer and inner surfaces are reddish yellow (7.5YR 6/6) coated and polished. Moderately cooked. Wheel made.
Comp:

144. 15060-4: B-36. MN: 1.1. Type: 5.2. Bowl rim piece. Coarse stone, chalk, ceramic powder, chaff added. Very dark brown (7.5YR 2.5/3) cemented; outer surface is dark brown (7.5YR 3/3) and black (N 2.5) multi colored graying, uncoated and polished; inner surface is dark brown (7.5YR 3/2) uncoated and unpolished. Badly cooked. Hand made.
Comp: Sevin 1985: Fig.5: 5 (Yeşilalinner 2, B.C.6th century)

145. 39011-1: C-33. MN: 1.1. Type: 5.2. Bowl rim piece. Intense coarse-moderate stone, fine sand, chalk and mica added. Black (N 2.5) cemented; outer surface is black (N 3) coated and smoothed; inner surface is black (N 3) coated and smoothed. Badly cooked. Hand made.
Comp:

146. 27027-8: C-35. MN: 1.1. Type: 5.2. Bowl rim piece. Little stone, chalk and intense mica added. Black (N 2.5) cemented, black pithy; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp:

147. 55013-1: C-13. MN: 8. Type: 5.2. Bowl rim piece. Intense moderate-little stone, chalk, less mica and ceramic powder added. Yellowish red (5YR 5/6) cemented, black pithy; outer surface is yellowish red (5YR 5/6), reddish brown (5YR 3/3) and black (5YR 2.5/1) multi colored, coated and polished; inner surface is reddish brown (5YR 5/6) coated and polished. Badly cooked. Hand made.
Comp: Kroll 1976: Abb. 20: 4 (Qiz Qaleh, Akamenid-Part)

Fig. 13

148. 16026-7: B-37. MN: 3.1. Type: 5.3. Bowl rim piece. Well purified, tightly cemented, less stone, sand and mica added. Light brown (7.5YR 6/4) cemented; uncoated and unpolished. Parallel red (10R 4/8) paint decorated on the rim. Well cooked. Wheel made.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age).

149. 38003-2: A-37. MN: 3.1. Type: 5.3. Bowl rim piece. Very little sized mica and sand added. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated. Red (10R 4/6) paint decorated on the rim. Well cooked. Wheel made.
Comp:

150. 16026-12: B-37. MN: X. Type: 5.3. Bowl rim piece. Fine sand and mica added cement. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are light brown (7.5YR 6/4) coated and polished. There is red (10R 4/8) paint decoration at the rim and just below the rim. Wheel made.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age)

151. 37004-6: C-36. MN: 1.1. Type: 5.3. Bowl rim piece. Less stone, chalk, moderate mica, ceramic powder added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are black (2.5Y 2.5/1) coated and polished. Moderately cooked. Wheel made.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age); Kozbe et al. 2001: plate 6: 2 (Ayanis, Urartu continuity of the form will be emphasized); Osten 1952: Abb. 2: 5.

152. 26011-2: A-34. MN: 3.1. Type: 5.3. Bowl rim piece. Intense sand, ceramic powder, mica added. Gray pithy, dark brown (7.5YR 3/4) cemented; outer and inner surfaces are reddish brown (5YR 4/4) coated and polished. Well cooked. Made on heavy wheel.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age); Kozbe et al. 2001: plate 6: 2 (Ayanis, Urartu continuity of the form will be emphasized); Osten 1952: Abb. 2: 5.

153. 15065-2: B-36. MN: 1.1. Type: 5.3. Bowl rim piece. Intense coarse stone, chalk, ceramic powder and mica added. Black (N.2.5) cemented, black pithy; outer surface is black (N 2.5) uncoated and polished; inner surface is black (N 2.5) uncoated and unpolished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 266.30 (Middle Iron Age).

154. 804-12: S-8. MN: 1.1. Type: 5.3. Bowl rim piece. Intense little stone, less chalk, mica and chaff added. Dark gray (7.5YR 3/1) cemented; outer surface is dark gray (7.5YR 3/1) coated and polished; inner surface is black (N 2.5) coated and polished. Badly cooked. Wheel made.
Comp: Sevin 1985: Fig.5: 10 (Yeşilalinner 2, B.C.6th century).

155. 804-17: S-8. MN: 1.1. Type: 5.3. Bowl rim piece. Intense coarse-moderate stone, chalk and less mica added. Black (10YR 2/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Kaygaz 2002: lev.23: 7 (Karagündüz, Late Iron Age).

156. 44004-11: B-14. MN: 6. Type: 5.3. Bowl rim piece. Coarse stone, intense chalk, fine chaff, mica added. Red (2.5YR 4/6) cemented; outer and inner surfaces are light brownish gray (cream) (2.5Y 6/2) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.188: 9 (Çengilertepe, B.C. 600-200).

157. 801-10: S-8. MN: 8. Type: 5.3. Bowl rim piece. Coarse stone, chalk, intense mica added. Black (N 2.5)) cemented; outer and inner surfaces are reddish brown (5YR 5/4) and black (N 2.5) multi colored, coated and polished. Badly cooked. Wheel made.
Comp: Kaygaz 2002: lev.33: 6 (Karagündüz, Late Iron Age).

158. 52009-1: C-14. MN: 6. Type: 5.3. Bowl rim piece. Moderate stone, ceramic powder, mica added. Black pithy, red (2.5YR 4/8) cemented; outer surface is dull yellow (cream) (2.5Y 7/3) fine coated and unpolished; inner surface is red (2.5YR 5/8), coated and unpolished. Well cooked. Made on heavy wheel.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age); Kozbe et al. 2001: plate 6: 2 (Ayanis, Urartu continuity of the iron form will be emphasized).

159. 13011-2: B-34. MN: 3.1. Type: 5.3. Bowl rim piece. Coarse-less stone, fine chaff, mica added. Black (N 2.5) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Moderately cooked. Wheel made.
Comp: Ökse 1988: abb.807 (Şemsiyetepe, Iron Age)

160. 30004-8: B-43. MN: 1.1. Type: 5.3. Bowl rim piece. Less little stone, moderately intense mica, chaff and chalk added. Black (7.5YR 2.5/1) cemented; outer surface is black (N 3) mica added, coated and polished; inner surface is black (N 3) mica added coated and polished. Moderately cooked. Wheel made.
Comp:

Fig. 14

161. 35012-50: C-34. MN: 3.1. Type: 5.4. Bowl rim piece. Less ceramic powder, plant seed, moderate stone, mica added. Dark brown (7.5YR 3/2) cemented, outer surface is brown (7.5YR 5/3) coated and polished; inner surface is reddish brown (5YR 5/4) coated and polished. Moderately cooked. Wheel made.
Comp: Summers 1993: fig 5: 10 (Akamenid).

162. 51002-3: B-21. MN: 1.1. Type: 5.4. Bowl rim piece. Moderately intense, moderate-little stone, chalk, chaff and mica added. Black (2.5Y 2.5/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age).

163. 37032-2: C-36. MN: 2. Type: 5.4. Bowl rim piece. Little stone, fine sand and mica added. Dark gray (10YR 3/1) cemented; outer surface is dark gray (10YR 3/1) coated and polished; inner surface is light yellowish brown (10YR 6/4) coated and polished. Moderately cooked. Wheel made.
Comp: Parker 1999: fig.2: 10 (Middle-Late Iron Age).

164. 29002-7: A-39. MN: 3.1. Type: 5.4. Bowl rim piece. Less mica, moderate stone, chalk, intense sand added. Dark brown (7.5YR 5/6) coated and polished; outer and inner surfaces are brown (7.5YR 4/3) coated and polished. Moderately cooked. Wheel made.
Comp: Ökse 1988: abb.66 (Kaleköy, Iron Age).

165. 27011-7: C-35. MN: 1.1. Type: 5.4. Bowl rim piece. Less chalk, mica, intense very fine sand added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated, outer surface is polished. Well cooked. Made on heavy wheel.
Comp: Summers 1993: fig 5: 10 (Akamenid); Russel 1980: fig.22: 245.2 (Middle Iron Age).

166. 55004-1: C-13. MN: 2. Type: 5.4. Bowl rim piece. Less ceramic powder, chalk, mica added. Very dark gray (10YR 3/1) cemented, outer and inner surfaces are dark gray (10YR 4/1) coated and polished. Well cooked. Wheel made.
Comp: Summers 1993: fig 5: 7 (Akamenid?); Sevin 1985: Fig.5: 9 (Yeşilalinner 2, B.C. 6th century).

167. 36015-1: A-32. MN: 3.1. Type: 5.4. Bowl rim piece. Moderate stone, chalk, intense ceramic powder and mica added. Gray pithy, dark brown (7.5YR 3/4) cemented; outer and inner surfaces are brown (7.5YR 4/3) coated and polished. Well cooked. Wheel made.
Comp: Sevin 1985: Fig 5: 10 (Yeşilalinner 2, B.C.6th century).

168. 25013-2: A-41. MN: 4.1. Type: 5.5. Bowl rim piece. Coarse stone, chalk, fine chaff, intense mica added. Brown (7.5YR 4/4) cemented; outer surface is reddish brown (5YR 4/4) coated and polished; inner surface is dark gray (5YR 4/1) coated and polished. Badly cooked. Hand made.
Comp:

169. 16005-9: B-37. MN: 3.1. Type: 5.5. Bowl rim piece. Less chalk, ceramic powder, moderate mica, intense sand added. Very dark grayish brown (2.5Y 3/2) cemented; outer and inner surfaces are dark grayish brown (10YR 4/2) coated and polished. Moderately cooked. Hand made.
Comp:

170. 22014-13: B-41. MN: 2. Type: 5.5. Bowl rim piece. Less stone, intense sand, mica added. Black (N 2.5) cemented; outer surface is dark brown (7.5YR 4/4) coated and polished; inner surface is black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

171. 13007-4: B-34. MN: 1.1. Type: 5.5. Bowl rim piece. Less coarse-moderate stone, chalk, chaff and mica added. Black (N 2.5) cemented; outer surface is dark grayish brown (10YR 4/2) coated and polished; inner surface is dark grayish brown (10YR 4/2) coated and polished. Well cooked. Wheel made.
Comp:

172. 12035-9: B-33. MN: 8. Type: 5.5. Bowl rim piece. Coarse stone, sand, very less mica added. Dark gray (5YR 4/1) cemented; outer surface is black (N 2.5) and dark reddish brown (2.5YR 3/3) multi colored, coated and polished; inner surface is very dark reddish gray (2.5YR 3/1) coated and polished. Well cooked. Hand made.
Comp: Sagona et al. 1996: fig.6: 2 (Sos Tumulus, Late Iron Age); Russel 1980: fig.23: 213: 11 (Middle Iron Age); Kroll 1976: Abb. 1: 9 (Qaleh Khezerlu, Urartu).

173. 50030-2: B-27. MN: 2. Type: 5.5. Bowl rim piece. Moderate-little stone, fine sand and less mica added. Brown (10YR 5/3) cemented; outer surface is dark gray (10YR 4/1) coated and polished; inner surface is grayish brown (10YR 5/2) coated and polished. Moderately cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.116: 6 (Danışment, B.C. 500-330).

174. 44004-3: B-14. MN: 7. Type: 5.5. Bowl rim piece. Little stone, chalk, intense mica added. Black (N 2.5) cemented; outer and inner surfaces are brown (7.5YR 5/4) and very dark gray (7.5YR 3/1) multi colored, coated and polished. Badly cooked. Hand made.
Comp: Sagona et al. 1996: fig.6: 2 (Sos Tumulus, Late Iron Age); Russel 1980: fig.23: 213: 11 (Middle Iron Age); Ökse 1988: abb.57 (Kaleköy, Iron Age).

175. 25008-9: A-35. MN: 1.1. Type: 5.5. Bowl rim piece. Little, less chalk, fine chaff, ceramic powder, intense mica added. Black (5YR 2.5/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is gray (5Y 5/1) coated and polished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig. 116: 6 (Pulur-Danışment, B.C. 500-330).

Fig. 15

176. 12011-2: B-33. MN: 3.1. Type: 5.6. Bowl rim piece. Coarse stone, chalk, fine chaff, intense mica added. Black pithy, brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp:

177. 15043-8: B-36. MN: 1.1. Type: 5.6. Bowl rim piece. Coarse-moderate stone, less mica and ceramic powder added. Brown (7.5YR 4/2) cemented, dark gray-black pithy; outer surface is black (N 3) coated and polished; inner surface is mica added black (N 3) coated and polished. Moderately cooked. Wheel made.
Comp:

178. 30008-2: B-43. MN: 2. Type: 5.6. Bowl rim piece. Little stone, fine sand, ceramic powder, mica and plant added. Brown (7.5YR 5/3) cemented, black pithy; outer surface is olive brown (2.5 Y 4/3) coated and polished; inner surface is olive brown (2.5 Y 4/3) coated and polished. Moderately cooked. Wheel made.
Comp: Sevin 1985: Fig.5: 14 (Yeşilalinner 2, B.C.6th century).

179. 53005-7: B-12. MN: 3.1. Type: 5.6. Bowl rim piece. Less chalk, mica, sand, moderate stone added. Dark brown (7.5YR 4/6) cemented; outer and inner surfaces are brown (7.5YR 5/3) coated and polished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 266.10 (Middle Iron Age).

180. 11007-5: B-32. MN: 2. Type: 5.6. Bowl rim piece. Little stone, intense mica, chalk, ceramic powder added. Black pithy, dark reddish brown (2.5YR 3/4) cemented; outer surface is black (N 2.5) and reddish brown (5YR 4/3) multi colored, coated and polished; inner surface is black (N 2.5) and red (2.5YR 4/8) multi colored, coated and polished. Well cooked. Hand made.
Comp: Sevin 1985: Fig.5: 14 (Yeşilalinner 2, B.C.6th century).

181. 22014-28: B-41. MN: 3.1. Type: 5.6. Bowl rim piece. Less-moderate chalk, stone, mica added. Black pithy, brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Moderately cooked. Made on heavy wheel.
Comp: Ökse 1988: abb.103 (Kaleköy, Iron Age).

182. 27027-12: C-35. MN: 1.1. Type: 5.6. Bowl rim piece. Less chalk, mica, ceramic powder, moderate stone, intense sand added. Very dark grayish brown (10YR 3/2) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 222: 1 (Middle Iron Age).

183. 58002-2: C-14. MN: 1.1. Type: 5.6. Bowl rim piece. Very little stone, intense mica, sand added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Well cooked. Hand made.
Comp: Sevin 1985: Fig. 5: 14 (Yeşilalinner 2, B.C.6th century); Russel 1980: fig.23: 213: 9 (Middle Iron Age).

184. 28008-14: B-42. MN: 4.1. Type: 5.6. Bowl rim piece. Less mica, ceramic powder, intense stone and sand added. Yellowish red (5YR 4/6) cemented; outer and inner surfaces are red (2.5YR 4/6) coated and polished. Moderately cooked. Hand made.
Comp: Sevin 1985: Fig.5: 14 (Yeşilalinner 2, B.C.6th century).

185. 35007-11: C-34. MN: 3.1. Type: 5.6. Bowl rim piece. Moderate chalk, stone, ceramic powder, intense mica added. Dark brown (7.5YR 4/6) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Well cooked. Wheel made.
Comp: Sevin 1985: Fig. 5: 14 (Yeşilalinner 2, B.C.6th century).

Fig. 16

186. 23029-7: A-41. MN: 3.1. Type: 6.1. Bowl rim piece. Intense coarse-moderate stone, fine sand, less mica and plant added. Yellowish red (5YR 5/6) cemented, black pithy; outer surface is light brown (7.5YR 6/3) coated and smoothed; inner surface is light brown (7.5YR 6/3) coated and smoothed. Badly cooked. Hand made.
Comp:

187. 15052: B-36. MN: 4.2. Type: 6.1. Bowl rim piece. Less stone, chalk, ceramic powder, intense mica, sand added. Light yellowish brown (10YR 6/4) cemented; outer and inner surfaces are red (10R 4/8) coated and polished. Well cooked. Wheel made.
Comp:

188. 51003-1: B-21. MN: 5. Type: 6.1. Bowl rim piece. Little stone, less chaff and mica added. Reddish brown (5YR 5/4) cemented; outer surface is reddish yellow (7.5YR 6/6) coated and polished; inner surface is reddish yellow (7.5YR 6/6) coated and polished. Moderately cooked. Hand made.
Comp: Stronach 1978: 252: 20 (Pasargade, Late Akamenide).

189. 31000-8: A-33. MN: 1.2. Type: 6.1. Bowl rim piece. Less chalk, mica, fine sand added. Very dark gray (10 YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Very well cooked. Wheel made.
Comp:

190. 14007-5: B-35. MN: 3.1. Type: 6.2. Bowl rim piece. Very little-less stone, chalk, intense mica added. Dark brown (7.5YR 4/6) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Moderately cooked. Hand made.
Comp: Goff 1985: fig 2: 53 (Med).

191. 15005: B-36. MN: 1.1. Type: 6.2. Bowl rim piece. Moderate stone, chalk, ceramic powder, intense sand added. Black pithy, light brown (7.5YR 6/4) cemented; outer surface is black (7.5YR 2.5/1) coated and polished; inner surface is reddish yellow (5YR 6/6) coated and polished. Well cooked. Hand made.
Comp:

Fig. 17

192. 37035: C-36. MN: 3.2. Type: 6.3. Bowl. Less-little stone, intense fine sand, less mica added. Yellowish gray pithy, red (2.5YR 4/6) and brown (7.5YR 4/3) multi colored cemented; outer and inner surfaces are very dark gray (10YR 3/1) coated and polished. Badly cooked. Made on heavy wheel.
Comp: Sumner 1986: İll 2: I (Akamenid)

193. 52007-1: C-14. MN: 1.2. Type: 6.3. Bowl rim piece. Moderate stone, ceramic powder, chalk and mica added. Dark brown (7.5YR 3/2) cemented, black pithy; outer surface is dark brown (7.5YR 3/2) coated and polished; inner surface is dark gray (7.5YR 3/1) coated and polished. Badly cooked. Hand made.
Comp:

194. 37033-1: C-36. MN: 1.2. Type: 6.3. Bowl rim piece. Coarse stone, mica chalk and ceramic powder added. Black (N 2.5) cemented; outer surface is dark gray (7.5YR 3/1) coated and polished; inner surface is black (7.5YR 2.5/1) coated and polished. Moderately cooked. Wheel made.
Comp: Kroll 1976: Abb. 2: 1 (Qaleh Khezerlu, Akamenid)

195. 32025-3: C-37. MN: 1.2. Type: 6.3. Bowl rim piece. Less mica, little stone and chalk added. Black (N 2.5) cemented; outer and inner surfaces are bright black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

196. 16003-4: B-37. MN: 1.2. Type: 6.3. Bowl rim piece. Less mica, little stone, chalk and ceramic powder added. Dark gray (5YR 3/1) cemented; outer surface is dark gray (5YR 3/1) coated and polished; inner surface is black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

197. 16033-5: B-37. MN: 1.2. Type: 6.3. Bowl rim piece. Less chalk, mica, fine sand added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

198. 15031-8: B-36. MN: 1.2. Type: 6.3. Bowl rim piece. Less mica, chalk, little stone and ceramic powder added. Dark gray (10YR 3/1) cemented; outer and inner surfaces are bright black (N 2.5) coated and polished. Well cooked. Well cooked. Wheel made.
Comp:

199. 35003-11: C-34. MN: 3.2. Type: 6.3. Bowl rim piece. Very fine sand and less mica added. Light brown (7.5YR 6/4) cemented; outer surface is yellowish red (5YR 4/6) coated and polished; inner surface is yellowish red (5YR 4/6) coated and polished. Well cooked. Wheel made.
Comp

200. 11006-9: B-32. MN: 4.1. Type: 6.3. Bowl rim piece. Tightly cemented, very little chalk, stone and mica added. Fine black pithy reddish yellow (7.5YR 6/6) cemented. Outer and inner surfaces are fine red (10R 4/6) coated and polished. Well cooked. Wheel made.

201. 804-10: S-8. MN: 3.2. Type: 6.3. Bowl rim piece. Very little ceramic powder, chalk, mica added. Brown (7.5YR 4/3) cemented; outer and inner surfaces are fine brown (7.5YR 4/4) coated and bright polished. Well cooked. Wheel made.
Comp:

202. 15066: B-36. MN: 1.2. Type: 6.3. Bowl. Fine sand, less mica added. Dark gray (10YR 4/1) cemented; outer and inner surface black (10YR 2/1) coated and bright polished. Very well cooked. Wheel made.
Comp:

203. 801-4: S-8. MN: 1.2. Type: 6.3. Bowl rim piece. Little stone, ceramic powder, chalk and mica added. Dark gray (10YR 3/1) cemented; outer surface is dark gray (10YR 3/1) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp:

204. 15070-1: B-36. MN: 6. Type: 6.4. Bowl rim piece. Tightly cemented, very little sized sand and mica added. Light brown (7.5YR 6/4) cemented; it is coated with the color of inner surface cement, outer surface is very dark gray (cream) (2.5Y 7/2) coated. Inner surface from rim to the main part is complex linear red (10R 4/6) and black (N 2.5) colored. Well cooked. Wheel made.
Comp:

205. 31018-1: A-33. MN: 4.1. Type: 6.4. Bowl rim piece. Fine stone, chalk, mica, added. Reddish brown (5YR 4/4) cemented; outer and inner surfaces are fine yellowish red (5YR 5/8), mica added coated and unpolished. Well cooked. Hand made.
Comp:

206. 29014-1: A-39. MN: 4.1. Type: 6.4. Bowl rim piece. Fine mica, very little stone, chalk added. Red (2.5YR 5/8) cemented; outer and inner surfaces are red (2.5YR 4/6), mica added coated and weakly polished. Well cooked. Hand made.
Comp:

<u>Fig 18</u>

207. 39009-6: C-33. MN: 1.2. Type: 7.1. Deep bowl/container rim piece. Moderate stone, chalk, ceramic powder and less mica added. Dark gray (10YR 3/1) cemented; outer and inner surfaces are dark gray (10 YR 3/1) coated and polished. Well cooked. Wheel made.
Comp: Stronach 1978: 248: 2 (Pasargade, Late Akamenid) Cements are different.

208. 26018-2: A-34. MN: 1.2. Type: 7.1. Deep bowl/container rim piece. Coarse stone, fine sand, ceramic powder, chalk and mica added. Dark gray (10YR 3/1) cemented; outer surface dark gray (10YR 3/1) coated and polished; inner surface is black (10YR 2/1) coated and polished. Moderately cooked. Wheel made.
Comp: Stronach 1978: 248: 2 (Pasargade, Late Akamenid) Cements are different.

209. 31011: A-33. MN: 4.2. Type: 7.1. Deep bowl/container rim piece. Very little, less stone, intense sand and mica added. Dark red (10R 5/6) cemented; outer and inner surfaces are red (2.5YR 5/6) coated and bright polished. Well cooked. Wheel made.
Comp:

210. 27027-1: C-35. MN: 3.1. Type: 7.1. Deep bowl/container rim piece. Moderate-little stone, mica, ceramic powder and plant added. Yellowish brown (5YR 5/6) cemented, dark gray pithy; outer surface is yellowish brown (5YR 5/6) coated and polished; inner surface is yellowish brown (5YR 5/6) coated and polished. Badly cooked. Hand made.
Comp:

211. 31004-17: A-33. MN: 8. Type: 7.1. Deep bowl/container rim piece. Less-moderate stone, intense mica, chalk, ceramic powder added. Black pithy, red (2.5YR 5/6) cemented; outer surface is red (2.5YR 4/6) coated and polished; inner surface is reddish black (2.5YR 2.5/1) and red (2.5YR 4/6) multi colored, coated and e polished. Moderately cooked. Hand made.
Comp:

212. 22014-32: B-41. MN: 4.1. Type: 7.1. Deep bowl/container rim piece. Less-little stone, intense ceramic powder, mica added. Red (2.5YR 5/8) cemented; outer and inner surfaces are red (2.5YR 4/8) coated and weakly polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig. 158: 3 (Pulur-Gökçedere, B.C. 900-300).

213. 15010-2: B-36. MN: 4.1. Type: 7.2. Deep bowl/container rim piece. Very little ceramic powder and mica added. Red (10R 5/8) cemented; inner side is reddish yellow (7.5YR 6/6) coated; outer surface is red (10R 4/6) paint coated starting from the upper part of rim. Well cooked. Wheel made.
Comp:

214. 27027-13: C-35. MN: 1.2. Type: 7.2. Deep bowl/container rim piece. Coarse stone, chalk, ceramic powder and mica added. Dark gray (10YR 3/1) cemented; outer and inner surfaces are bright black (N 2.5) coated and polished. Well cooked. Wheel made. Moderately cooked.
Comp:

215. 15083-4: B-36. MN: 3.1. Type: 7.2. Deep bowl/container rim piece. Moderate stone, ceramic powder, less sand, less mica added. Brown (7.5YR 4/4) cemented; outer surface is dark brown (7.5YR 3/3) coated and polished; inner surface is brown (75YR 5/4) coated and polished. Moderately cooked. Hand made.
Comp:

216. 44004-2: B-14. MN: 4.1. Type: 7.2. Deep bowl/container rim piece. Coarse stone, ceramic powder, mica added. Black (N 2.5) cemented; outer and inner surfaces are red (2.5YR 4/8) coated and outer surface is polished. Moderately cooked. Wheel made
Comp:

217. 37035-1: C-36. MN: 1.1. Type: 7.2. Deep bowl/container rim piece. Moderately intense coarse-moderate stone, chalk, less mica and chaff added. Dark brown (7.5YR 3/2) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 3) coated and polished. Moderately cooked. Hand made.
Comp:

Fig. 19

218. 35012-15: C-34. MN: 4.1. Type: 8. Deep bowl/container rim piece. Little stone, ceramic powder, fine mica added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are red (10R 4/6), mica coated and polished. Well cooked. Hand made.
Comp:

219. 26008-5: A-34. MN: 2. Type: 8. Deep bowl/container rim piece. Ceramic powder, stone, chalk, less fine chaff added. Brown pithy, very dark gray (5YR 3/1) cemented; outer and inner surfaces are very dark gray (10YR 3/1) coated and unpolished. Moderately cooked. Hand made.
Comp:

220. 27010-1: C-35. MN: 7. Type: 8. Deep bowl/container rim piece. Coarse stone, chalk, ceramic powder, fine chaff, mica added. Gray pithy, dark brown (7.5YR 3/4) cemented; outer and inner surfaces are very dark gray (7.5YR 3/1) and very dark brown (7.5YR 2.5/3) multi colored, coated and polished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 267.4 (Middle Iron Age).

221. 13003-3: B-34. MN: 4.1. Type: 8. Deep bowl/container rim piece. Moderate stone, chalk, ceramic powder, mica added. Very dark gray (7.5YR 3/1) cemented; outer surface is red (2.5YR 4/6) coated and polished; inner surface is red (2.5YR 4/6) ve black (2.5YR 2.5/1) multi colored, coated and polished. Moderately cooked. Hand made.
Comp:

Fig. 20

222. 52008-2: C-14. MN: 1.1. Type: 9.1. Deep bowl/container rim piece. Less chalk, mica, chaff, moderate stone, sand added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Well cooked. Hand made.
Comp:

223. 44004-5: B-14. MN: 8. Type: 9.1. Deep bowl/container rim piece. Coarse, intense stone, ceramic powder, very fine mica, less fine chaff added. Black (N 2.5) cemented; outer and inner surfaces are yellowish red (5YR 5/6) and black (7.5YR 2.5/1) multi colored, coated and polished. Moderately cooked. Hand made.
Comp: Sevin 1985: Fig. 5: 8 (Yeşilalinner 2, B.C.6th century); Sevin et al. 1999: Fig.12: 11 (Karagündüz, Late Iron Age)

224. 50030-1: B-27. MN: 7. Type: 9.2. Deep bowl/container rim piece. Moderate-little stone, intense fine sand, less mica and chalk added. Dark grayish brown (10YR 3/2) cemented; outer surface is brown (10YR 5/3) and dark gray (10YR 3/1) multi colored, coated and polished; inner surface is light brown (7.5YR 6/3) coated and polished. Moderately cooked. Hand made.
Comp: Sagona et al. 1996: fig.6: 2 (Sos Tumulus, Late Iron Age); Sagona and Sagona 2004: fig.142: 11 (Baltakaya Hill 1, B.C. 800-300).

225. 50015-1: B-27. MN: 1.1. Type: 9.2. Deep bowl/container rim piece. Moderate stone, chaff, chalk and mica added. Black (N 2.5) cemented, black pithy; outer surface is black (N 2.5) coated and polished; inner surface black is (N 2.5) uncoated and unpolished. Moderately cooked. Wheel made.
Comp: Sagona et al. 1996: fig.6: 2 (Sos Tumulus, Late Iron Age; Sagona and Sagona 2004: fig.142: 11 (Baltakaya Hill 1, B.C. 800-300).

Fig. 21

226. M120: C-37. MN:7. Type: 10.1. Deep bowl/container with ewer. Moderate-coarse stone, chalk, less mica added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/3) and black (N 2.5) multi colored, coated and polished. Moderately cooked. Hand made.
Comp:

227. 55010: C-13. MN: 2. Type: 10.2. Deep bowl/container with ewer. Less stone, chalk, mica, sand, ceramic powder added. Grayish brown (10YR 4/2) cemented; outer and inner surfaces are very dark gray (10YR 3/1) and light brownish gray (10YR 6/2) multi colored, graying. Moderately cooked. Hand made.
Comp:

Fig.22

228. 39009-3: C-33. MN: 3.1. Type: 11.1. Pot rim piece. Moderate-little stone and mica added. Black (N 2.5) cemented; outer surface is brown (7.5YR 4/3) coated and polished; inner surface is dark gray (7.5YR 3/1) coated and smoothed. Moderately cooked. Hand made.
Comp: Kroll 1976: Abb. 5: 1 (Verahram, Urartu).

229. 25006-12: A-35. MN: 1.1. Type: 11.1. Pot rim piece. Less stone, chalk, mica, sand, ceramic powder added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Summers 1993: fig.8: 10.

230. 44004-12: B-14. MN: 2. Type: 11.1. Pot rim piece. Coarse stone, intense ceramic powder, mica added. Dark reddish brown (2.5YR 2.5/3) cemented; outer and inner surfaces are black (N 2.5) and very dark brown (7.5YR 2.5/2) multi colored, coated and polished. Badly cooked. Hand made.
Comp: Kroll 1976: Abb. 5: 1 (Verahram, Urartu); Sagona and Sagona 2004: fig. 115: 8 (Sancaktepe, B.C. 500-330).

231. 15001-1: B-36. MN: 1.1. Type: 11.1. Pot rim piece. Intense coarse-moderate stone, mica, less chaff and chalk added. Black (N2.5) cemented; outer surface is black (N 2.5) uncoated and smoothed; inner surface is black (N 2.5) uncoated and smoothed. Badly cooked. Hand made.
Comp: Summers 1993: fig.8: 10.

232. 25011-7: A-35. MN: 1.1. Type: 11.2. Pot rim piece. Very little stone, chalk, mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5), uncoated and unpolished. Badly cooked. Hand made.
Comp: Russel 1980: fig.22: 244: 1 (Middle Iron Age).

233. 32012-1: C-37. MN: 1.1. Type: 11.2. Pot rim piece. Intense coarse-moderate stone, less chalk, mica and ceramic powder added. Dark gray (7.5YR 3/1) cemented, outer surface is dark brown (5YR 3/2) coated and smoothed; inner surface is black (N 2.5) mica added coated and smoothed. Moderately cooked. Hand made.
Comp:

234. 14010-3: B-35. MN: 6. Type: 11.2. Pot rim piece. Intense, little chalk, stone, mica and less amount of ceramic powder added. Fine gray pithy, red (10R 4/6) cemented; outer surface is light gray (10YR 7/2) cream coated and red (10R 4/6) paint decorated from rim to the neck. Inner surface is fine dark brown (7.5YR 5/6) coated and polished. Well cooked. Hand made.
Comp:

235. 53003-1: B-12. MN: 3.1. Type: 11.3. Pot rim piece. Coarse-moderate stone, fine sand, chalk and less plant added. Brown (7.5YR 5/6) cemented, gray pithy; outer surface is yellowish red (5YR 5/6) graying coated and polished; inner surface is dark reddish brown (5YR 3/2) graying coated and polished. Moderately cooked. Hand made.
Comp: Kroll 1979: Abb. 4: 27 (Qal'eh Dosoq, Urartu).

236. 16021-13: B-37. MN: 3.1. Type: 11.4. Pot rim piece. Brown ware group. Moderate sized intense stone, moderate chalk, ceramic powder, fine chaff added. Brown (7.5YR 4/4) cemented, outer surface is brown (7.5YR 5/4) micaceous coated, weakly polished; inner surface is dark gray (10YR 4/1) micaceous coated and unpolished. Well cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig.192:12 (Çengilertepe, B.C. 900-300).

Fig. 23

237. 18002-1: B-40. MN: 1.1. Type: 12.1. Pot rim piece. Moderate and little stone, intense ceramic powder, chalk, less mica, fine chaff added. Brown (7.5YR 4/3) cemented, black pithy; outer surface is fine black (N 2.5) coated and polished; inner surface is uncoated brown (7.5YR 4/3) and unpolished. Moderately cooked. Hand made.
Comp:

238. 51009-5: B-21. MN: 3.1. Type: 12.1. Pot rim piece. Moderate stone, ceramic powder, chalk, fine chaff, mica added. Gray pithy, brown (7.5YR 4/3) cemented; outer surface is brown (7.5YR 4/4) coated and polished; inner surface is very dark gray (7.5YR 3/1) coated and polished. Well cooked. Hand made.
Comp:

239. 35007-19: C-34. MN: 1.1. Type: 12.1. Pot rim piece. Moderate stone, mica and chalk added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Well cooked. Hand made.
Comp:

240. 25011-1: A-35. MN:7. Type: 12.1. Pot rim piece. Coarse-moderate stone, fine sand, mica and less amount of ceramic powder added. Dark grayish brown (10YR 3/2) cemented; outer surface is grayish brown (10YR 4/2) coated and polished; inner surface is dark gray (7.5YR 3/1) and brown multi colored, coated and polished. Badly cooked. Hand made.
Comp:

241. 35000-4: C-34. MN: 6. Type: 12.1. Pot rim piece. Less chalk, mica, ceramic powder, moderate stone, intense sand added. Red (2.5YR 4/6) cemented; outer and inner surfaces are light brownish gray (2.5 Y 6/2) coated, outer surface is polished. Moderately cooked. Hand made.
Comp:

242. 44004-10: B-14. MN:2. Type: 12.1. Pot rim piece. Moderate-little stone, mica and fine sand added. Dark gray (10YR 4/1) cemented; outer surface is greenish gray (Gley 1 5/5GY) coated and polished; inner surface is greenish gray (Gley 1 5/5GY) coated and polished. Moderately cooked. Wheel made.
Comp:

243. 19035-1: A-36. MN: 8. Type: 12.1. Pot rim piece. Moderate stone, intense mica, chalk, fine chaff added. Yellowish red (5YR 4/6) cemented; outer and inner surfaces are black (N 2.5) and yellowish red (5YR 4/6) multi colored, coated and polished. Badly cooked. Hand made.
Comp:

Fig. 24

244. 16000-9: B-37. MN: 1.1. Type: 12.2. Pot rim piece. Intense moderate-little stone, sand and less mica added. Brown (7.5YR 4/3) cemented; outer surface is dark brown (7.5YR 3/2) coated and polished; inner surface is mica added very dark brown (7.5YR 3/1) coated and smoothed. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.141: 2 (Çayıryolu Hill 3, B.C. 800-600).

245. 41008-2: C-38. MN: 3.1. Type: 12.2. Pot rim piece. Moderate-little stone, mica and intense chalk added. Brown (7.5YR 5/6) cemented; outer surface is brown (10YR 5/3) graying coated and polished; inner surface is dark reddish gray (2.5YR 3/1) coated and polished. Moderately cooked. Hand made.
Comp:

246. 27011-4: C-35. MN: 1.1. Type: 12.2. Pot rim piece. Less chalk, mica, moderate sand, coarse stone added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are black (7.5YR 2.5/1) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

247. 39008-1: C-33. MN: 6. Type: 12.2. Pot rim piece. Very coarse stone, intense coarse chalk, ceramic powder, less mica, chaff added. Black pithy, red (2.5YR 4/8) cemented; outer surface is light greenish yellow (cream) (2.5Y 6/3) coated and unpolished; inner surface is brown (7.5YR 5/4) uncoated and unpolished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.192:8 (Çengilertepe, B.C. 600-300).

248. 35006-1: C-34. MN: 5. Type: 12.2. Pot rim piece. Less chalk, mica, moderate sand, coarse and moderate stone added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are yellowish brown (5YR 5/8) coated and outer surface polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.176: 5 (Kilise Hill2, B.C. 900-300).

249. 52008-1: C-14. MN: 3.1. Type: 12.2. Pot rim piece. Coarse-moderate stone, fine sand, chalk and less plant added. Brown (7.5YR 5/6) cemented, gray pithy; outer surface is yellowish red (5YR 5/6) graying coated and polished; inner surface is dark reddish brown (5YR 3/2) graying coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.176: 5 (Kilise Hill 2, B.C. 900-300).

Fig. 25

250. 15031: B-36. MN: 7. Type: 12.3. Pot rim piece. Moderate stone, chalk, ceramic powder, mica added. Very dark grayish brown (2.5Y 3/2) cemented; outer and inner surfaces are brown (7.5YR 4/4) and black (2.5Y 2.5/1) multi colored, coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

251. 44024: A-42. MN: 3.1. Type: 12.3. Pot rim piece. Less mica, ceramic powder, moderate stone, sand added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are light brown (7.5YR 6/4) coated and outer surface is polished. Moderately cooked. Wheel made.
Comp:

252. 39009-1: C-33. MN: 1.1. Type: 12.3. Pot rim piece. Moderate stone, intense ceramic powder, chalk and mica added. Black (N 2.5) porous cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and unpolished. Moderately cooked. Hand made.
Comp:

253. 37035B-7: C-36. MN: 1.1. Type: 12.3. Pot rim piece. Coarse stone, intense ceramic powder, chalk, fine chaff, less mica added. Black (N 2.5) cemented; outer and inner surfaces are fine black (N 2.5) coated and bright polished. Badly cooked. Hand made.
Comp: Muscarella 1973: figure 14: 1 (Late Iron Age).

254. 15040B-1: B-36. MN: 7. Type: 12.3. Pot rim piece. Less coarse stone, moderate intense chalk, sand and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) and brown (7.5YR 4/4) multi colored and polished; inner surface is brown (7.5YR 4/3) coated and unpolished. Badly cooked. Hand made.
Comp: Ökse 1988: abb.1052 (Değirmentepe, Iron Age).

255. 26010: A-34. MN: 7. Type: 12.3. Pot rim piece. Moderate stone, chalk, mica, ceramic powder added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/3) multi colored, coated and outer surfaces are polished. Moderately cooked. Hand made.
Comp:

256. 56003-1: A-26. MN: 7. Type: 12.3. Pot rim piece. Intense moderate-little stone, fine sand ceramic powder and mica added. Black (7.5YR 2.5/1) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (2.5Y 2.5/1) and brown (7.5YR 4/3) coated and unpolished. Moderately cooked. Wheel made.
Comp:

Fig. 26

257. 11000B-3: B-32. MN:7**.** Type: 12.4. Pot rim piece. Less coarse, intense moderate-little stone, less mica, ceramic powder, chalk and plant added. Dark brown (7.5YR 3/2) cemented; outer surface is dark brown (7.5YR 3/2) coated and polished; inner surface is reddish brown (5YR 5/4) coated and smoothed. Badly cooked. Hand made.
Comp:

258. 44007-9: B-14. MN: 1.1. Type: 12.4. Pot rim piece. Moderately intense coarse stone, chalk ceramic powder, chaff and less mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) uncoated and polished. Moderately cooked. Hand made.
Comp:

259. 39004-4: C-33. MN: 2. Type: 12.4. Pot rim piece. Less, little ceramic powder, less mica added. Dark gray (5YR 4/1) cemented; outer and inner surfaces are dark gray (7.5YR 4/1) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

260. 37014-1: C-36. MN: 8. Type: 12.4. Pot rim piece. Intense moderate-little stone, chalk and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) and red (2.5YR 4/6) multi colored, coated and polished, vertical and horizontal polish traces are observed at outer surface; inner surface is black (N 2.5) and red (2.5YR 4/6) multi colored, coated and smoothed. Badly cooked. Hand made.
Comp:

261. 19032-1:. A-36. MN: 1.1. Type: 12.4. Pot rim piece. Moderately intense coarse stone, chalk ceramic powder, chaff and less mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) uncoated and polished. Moderately cooked. Hand made.
Comp:

262. 32001-1: C-37. MN: 2. Type: 12.4. Pot rim piece. Very little, less stone and intense mica added. Dark gray (10YR 4/1) cemented. Outer and inner surfaces are very dark gray (10YR 3/1) coated and weakly polished. Well cooked. Wheel made.
Comp:

Fig . 27

263. 15031-1: B-36. MN: 1.1. Type: 12.5. Pot rim piece. Less stone, chalk, mica, sand, ceramic powder added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) coated and outer is surface polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.175: 12 (Kilise Hill 2, B.C. 900-300).

264. 11007-2: B-32. MN: 8. Type: 12.5. Pot rim piece. Moderate, intense stone, ceramic powder, sand and intense mica added. Black pithy, red (2.5YR 4/6) cemented; outer surface is black (N 2.5) and brown (7.5YR 5/4) multi colored, coated and polished; inner surface is yellowish red (2.5YR 5/6) coated and unpolished. Moderately cooked. Hand made.
Comp:

265. 44000-2: B-14. MN: 7. Type: 12.5. Pot rim piece. Less coarse-moderate stone, mica and moderately intense plant added. Dark gray (7.5YR 3/1) cemented, very dark gray pithy; outer surface is dark gray (7.5YR 3/1) and brown (7.5YR 5/4) multi colored, coated and polished; inner surface is dark gray (7.5YR 3/1) and brown (7.5YR 5/4) multi colored, coated and smoothed. Badly cooked. Hand made.
Comp:

266. 11000A-1: B-32. MN: 1.1. Type: 12.5. Pot rim piece. Very coarse stone, intense chalk, intense chaff, less mica added. Black (N 2.5) cemented; outer and inner surfaces are uncoated black (N 2.5) and polished. Badly cooked. Hand made.
Comp:

267. 44007-3: B-14. MN: 2. Type: 12.5. Pot rim piece. Intense chalk, stone, abundant mica added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are very dark gray (2.5Y 3/1) coated and weakly polished. Well cooked. Wheel made.
Comp:

268. 27704: B-27. MN: 7. Type: 12.5. Pot rim piece. Less mica, ceramic powder, intense stone and sand added. Very dark gray (5YR 3/1) cemented; outer surface is brown (7.5YR 4/3) coated and polished, inner surface is reddish brown (2.5YR 5/4) coated and unpolished. Moderately cooked. Hand made.
Comp:

269. 37037: C-36. MN: 3.1. Type: 12.5. Pot rim piece. Moderate, intense stone, moderate ceramic powder, intense mica added. Thick gray pithy, dark brown (7.5YR 5/6) cemented, outer surface is brown (7.5 YR 5/4) coated and polished; inner surface is very dark gray (7.5YR 3/1) and brown (7.5YR 4/4) coated and unpolished. Moderately cooked, Hand made.
Comp:

Fig. 28

270. 801-8: S-8. MN: 4.1. Type: 12.6. Pot rim piece. Moderate-little stone, fine sand, chalk and mica added. Red (2.5YR 4/8) cemented, black pithy; outer surface is red (2.5YR 4/8) coated and polished; inner surface is mica added black (N 2.5) coated and unpolished. Badly cooked. Wheel made.
Comp:

271. 25008-6: A-35. MN: 6. Type: 12.6. Pot rim piece. Very coarse stone, intense coarse chalk, ceramic powder, less mica, intense chaff added. Black (N 2.5) cemented; outer and inner surfaces are dull yellow (cream) (2.5Y 7/3) finely coated and unpolished. Badly cooked. Hand made.
Comp: Ökse 1988: abb.362 (Değirmentepe, Iron Age)

272. 44007-2: B-14. MN: 7. Type: 12.6. Pot rim piece. Moderate chalk, little stone, intense mica added. Gray pithy, yellowish red (5YR 4/6) cemented; outer surface is black (N 2.5) and brown (7.5YR 5/4) multi colored, coated and polished; inner surface is brown (7.5YR 5/4) coated and unpolished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.151: 4 (Karaçayır Site, B.C. 500-300)

273. 44007-5: B-14. MN: 1.1. Type: 12.6. Pot rim piece. Intense coarse stone, ceramic powder, chalk, chaff and mica added. Black (10YR 2/1) cemented; outer surface is dark gray (10YR 4/1) coated and polished; inner surface is black (N 2.5) coated and unpolished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.151: 4 (Karaçayır Site, B.C. 500-300)

274. 15054-3: B-36. MN: 1.1. Type: 12.6. Pot rim piece. Intense coarse stone, ceramic powder, chalk, chaff and mica added. Black (10YR 2/1) cemented; outer surface is very dark gray (10YR 3/1) coated and polished; inner surface is black (N 2.5) coated and unpolished. Moderately cooked. Hand made.
Comp:

275. 44007-11: B-14. MN: 8. Type: 12.6. Pot rim piece. Coarse, intense stone, sand, chalk, ceramic powder, intense mica, less fine chaff added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are yellowish red (5YR 5/6) and black (7.5YR 2.5/1) multi colored, coated and unpolished. Moderately cooked. Hand made.
Comp:

276. 53006-1: B-12. MN: 7. Type: 12.6. Pot rim piece. Moderate stone, chalk, intense ceramic powder, mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) and brown (7.5YR 4/4) multi colored, coated and polished; inner surface is reddish brown (5YR 5/4) coated and unpolished. Moderately cooked. Hand made.
Comp: Sagona et al. 1992: fig.7: 3 (Büyüktepe, Iron Age)

277. 51005-2: B-21. MN: 1.1. Type: 12.6. Pot rim piece. Little stone, intense chalk, ceramic powder, less mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and dark gray (7.5YR 4/1) multi colored, uncoated and unpolished. Moderately cooked. Hand made.
Comp: Sagona et al. 1992: fig.7: 2 (Büyüktepe, Iron Age)

278. 37035A-2: C-36. MN: 1.1. Type: 12.6. Pot rim piece. Intense coarse stone, ceramic powder, chalk, chaff and mica added. Black (10YR 2/1) cemented, black pithy; outer surface is dark gray (10YR 4/1) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.191:11 (Çengilertepe, B.C. 600-300)

279. 12006-1: B-33. MN: 7. Type: 12.6. Pot rim piece. Coarse stone, chalk, intense mica added. Dark gray (7.5YR 4/1) cemented; outer surface is reddish brown (5YR 4/4) coated and bright polished; inner surface is reddish brown (5YR 4/4) ve black (2.5Y 2.5/1) multi colored, coated and polished. Well cooked. Hand made.
Comp:

280. 44007-1: B-14. MN: 7. Type: 12.6. Pot rim piece. Coarse-moderate stone, intense mica, fine sand and less plant added. Black (2.5Y 2.5/1) cemented; outer surface is black (N 2.5) and brown (7.5YR 5/3) multi colored, coated and polished; inner surface is black (N 2.5) coated and polished. Badly cooked. Hand made.
Comp:

281. 53005-1: B-12. MN: 7. Type: 12.6. Pot rim piece. Little stone, chalk, fine chaff, ceramic powder, mica added. Dark gray (7.5YR 4/1) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 5/4) multi colored, coated and outer surface polished. Well cooked. Hand made.
Comp: Sevin et al. 1999: Fig. 12: 12 (Karagündüz, Late Iron Age)

Fig. 29

282. 19043: A-36. MN: 7. Type: 12.7. Pot rim piece. Coarse stone, intense chalk, ceramic powder, less mica added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/3) multi colored, coated and outer surface is polished. Badly cooked. Hand made.
Comp: Ökse 1988: abb.360 (Kaleköy, Iron Age).

283. 55011-3: C-13. MN: 8. Type: 12.7. Pot rim piece. Little, intense stone, chalk, mica, intense chaff added. Dark reddish brown (5YR 3/3) cemented; outer and inner surfaces are yellowish red (5YR 4/6) and black (7.5YR 2.5/1) multi colored, coated and unpolished. Moderately cooked. Hand made.
Comp:

284. 38011: A-37. MN: 7. Type: 12.7. Pot rim piece. Less ceramic powder, moderate stone, sand and mica added. Dark brown (7.5YR 3/2) cemented; outer surface is brown (7.5YR 4/3) and black (7.5YR 2.5/1) multi colored, coated and polished; inner surface is brown (7.5YR 4/2) coated and unpolished. Moderately cooked. Hand made.
Comp:

285. 27017-1: C-35. MN: 5. Type: 12.7. Pot rim piece. Less chalk, mica, moderate sand, coarse stone added. Brown (7.5YR 4/4) cemented; outer surface is reddish yellow (5YR 6/6) coated and polished; inner surface is black (7.5YR 2.5/1) coated and polished. Moderately cooked. Hand made.
Comp:

286. 19039-2: A-36. MN: 1.1. Type: 12.7. Pot rim piece. Intense moderate stone, chalk, chaff and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and unpolished. Badly cooked. Hand made.
Comp:

287. 15045-1: B-36. MN: 7. Type: 12.7. Pot rim piece. Very coarse stone, chalk, intense ceramic powder, less mica added. Dark grayish brown (10YR 4/2) cemented; outer and inner surfaces are black (10YR 2/1) and brown (7.5YR 4/3) multi colored, coated and outer surface is polished. Badly cooked. Hand made.
Comp:

288. 51005-1: B-21. MN:1.1. Type: 12.7. Pot rim piece. Coarse stone, chalk, chaff, ceramic powder and mica added. Black (7.5YR 2.5/1) cemented, black pithy; outer surface is dark brown (7.5YR 3/2) and black (7.5YR 2.5/1) multi colored, coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Made on heavy wheel.

Comp:

Fig. 30

289. 26002-2: A-34. MN: 2. Type: 12.8. Pot rim piece. Moderate-little stone, fine sand, mica and less amount of plant added. Dark gray (10YR 4/1) cemented; outer surface is brown (10YR 5/3) micaceous coated; inner surface is brown (7.5YR 5/4) coated and polished. Moderately cooked. Wheel made.
Comp:

290. 32025-1: C-37. MN: 2. Type: 12.8. Pot rim piece. Very coarse stone, chalk, ceramic powder, intense mica added. Brown (7.5YR 4/4) cemented; outer surface is very dark gray (7.5YR 3/1) uncoated and weakly polished; inner surface is dark brown (7.5YR 3/4) uncoated and unpolished. Badly cooked. Hand made.
Comp:

291. 804-20: S-8. MN: 1.1. Type: 12.8. Pot rim piece. Little stone, ceramic powder, chalk, and mica added. Dark brown (7.5YR 3/1) cemented; outer surface is black (N 2.5) uncoated and polished; inner surface is black (N 2.5) uncoated and polished. Well cooked. Wheel made.
Comp:

292. 15066-2: B-36. MN: 3.1. Type: 12.8. Pot rim piece. Little-less stone, intense ceramic powder, fine chaff, less mica added. Gray pithy, brown (7.5YR 4/4) cemented; outer surface is brown (7.5YR 5/4) coated and polished; inner surface is dark grayish brown (10YR 4/2) coated and polished. Well cooked. Hand made.
Comp: Sagona et al. 1992: fig.6: 8 (Büyüktepe, Iron Age)

293. 32029-6: C-37. MN: 1.1. Type: 12.8. Pot rim piece. Coarse stone, chaff, chalk and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) uncoated and unpolished; inner surface is dark brown (2.5YR 3/2) uncoated and unpolished. Badly cooked. Hand made.
Comp:

294. 804-13: S.8. MN: 1.1. Type: 12.8. Pot rim piece. Less stone, chalk, mica, sand, ceramic powder added. Black (10YR 2/1) cemented; outer and inner surfaces are very dark gray (10YR 3/1) coated and outer surface is polished. Moderately cooked. Hand made.
Comp: Sagona et al. 1996: fig.6: 1 (Sos Tumulus)

295. 12035-1: B-33. MN: 3.1. Type: 12.8. Pot rim piece. Very little-less stone, intense sand, ceramic powder, intense mica added. Dark brown (7.5YR 5/1) cemented; outer surface is brown (7.5YR 5/4) coated and polished; inner surface is dark brown (7.5YR 3/2) coated and unpolished. Well cooked. Wheel made.
Comp: Sagona et al. 1996: fig.6: 1 (Sos Tumulus)

296. 55011-4: C-13. MN: 8. Type: 12.8. Pot rim piece. Moderate stone, intense mica, chalk, ceramic powder added. Black pithy, yellowish red cemented (5YR 5/6) cemented; outer and inner surfaces are black (N 2.5) and yellowish red (5YR 5/6) multi colored, coated and polished. Moderately cooked. Hand made.
Comp:

Fig. 31

297. 53005-10: B-12. MN: 1.1. Type: 12.8. Pot rim piece. Less chalk, mica, moderate sand, coarse stone added. Black (7.5YR 2.5 /1) cemented; outer and inner surfaces are black (7.5YR 2.5/1) coated and outer surface is polished. Moderately cooked. Hand made.

Comp:

298. 15043-2: B-36. MN: 6. Type: 12.8. Pot rim piece. Coarse stone, ceramic powder, chaff, chalk, intense mica added. Gray pithy, red (2.5YR 4/6) cemented; outer surface is light gray (cream) (2.5Y 7/2) coated and polished; inner surface is red (2.5YR 5/6) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig. 117: 9 (Pulur-Danışment, B.C. 600-200).

299. 14001-1: B-35. MN: 5. Type: 12.8. Pot rim piece. Very little stone, mica, chaff added. Yellowish red (5YR 5/6) cemented; outer and inner surfaces are reddish yellow (5YR 6/6), coated and polished. Moderately cooked. Hand made.
Comp:

300. 37035A-1: C-36. MN: 4.1. Type: 12.8. Pot rim piece. Coarse-moderate stone, fine sand, chalk and mica added. Red (2.5YR 4/8) cemented; outer surface is red (2.5 YR 5/8) coated and polished. Moderately cooked. Hand made.
Comp:

301. 55011-1: C-13. MN: 5. Type: 12.8. Pot rim piece. Coarse stone, mica, chalk, chaff added. Yellowish red (5YR 5/6) cemented; outer and inner surfaces are reddish yellow (5YR 6/6), uncoated and unpolished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.179:14 (Örenşar 4, B.C. 600-200).

302. 19015-1: A-36. MN: 3.1. Type: 12.9 Pot rim piece. Very coarse stone, chaff, chalk, mica added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and polished. Badly cooked. Hand made.
Comp:

303. 800-2: S-8. MN: 2. Type: 12.9. Pot rim piece. Moderate-little stone, mica, less ceramic powder and plant added. Dark brown (7.5YR 3/2) cemented; outer surface is grayish brown (10YR 5/2) coated and polished; inner surface is grayish brown (10YR 5/2) coated and polished. Moderately cooked. Wheel made.
Comp:

Fig. 32

304. 31004-20: A-33. MN: 1.2. Type: 12.10. Pot rim piece. Less mica, little stone and ceramic powder added. Dark gray (10YR 3/1) cemented; outer and inner surfaces are bright black (N 2.5) coated and polished. Well cooked. Wheel made. Well cooked. Hand made.
Comp:

305. 15065-1: B-36. MN: 1.1. Type: 12.10. Pot rim piece. Coarse stone, coarse chalk, ceramic powder, fine chaff, intense mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) fine coated and polished; inner surface is uncoated and unpolished, very dark gray (7.5YR 3/1). Moderately cooked. Hand made.
Comp:

306. 31000-2: A-33. MN: 8. Type: 12.10. Pot rim piece. Very little chalk, stone, intense mica added. Black pithy, dark brown (7.5YR 4/6) cemented; outer and inner surfaces are black (7.5YR 2.5/1) and red (2.5YR 4/6) multi colored coated and polished. Well cooked. Hand made.
Comp: Sagona et al. 1992: fig.7: 2 (Büyüktepe, Iron Age)

307. 15068-4: B-36. MN: 3.1. Type: 12.10. Pot rim piece. Moderate-coarse stone, chalk, fine chaff, mica added. Brown (7.5YR 4/4) cemented; outer surface is light brown (7.5YR 6/4) coated and polished; inner surface is brown (7.5YR 4/2) coated and unpolished. Moderately cooked. Hand made.
Comp:

308. 13014-3: B-34.MN: 1.1. Type: 12.10. Pot rim piece. Coarse stone, chalk, chaff, mica and sand added. Black (N 2.5) cemented**,** black pithy; outer surface is black (N 2.5) multi colored, uncoated and polished; inner surface is black (N 2.5) uncoated and unpolished. Badly cooked. Hand made.
Comp:

309. 52004-3: C-14. MN: 7. Type: 12.10. Pot rim piece. Very coarse stone, chalk, intense ceramic powder, less mica added. Gray pithy, dark brown (7.5YR 3/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) and black (7.5YR 2.5/1) multi colored, coated and outer surface is polished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.185:3 (Kazlarboğazı Hill)

310. 52008-4: C-14. MN: 1.1. Type: 12.10. Pot rim piece. Little stone, ceramic powder and chalk added. Black (N 2.5) cemented; outer surface is black (N 2.5) uncoated and polished; inner surface is black (N 2.5) uncoated and unpolished. Well cooked. Hand made.
Comp:

<u>Fig. 33</u>

311. 26002-3: A-34. MN: 3.1. Type: 13.1. Pot rim piece. Moderate-less stone, intense sand and mica added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are dark brown (7.5YR 3/2) coated and polished. Moderately cooked. Hand made.
Comp:

312. 16015-3: B-37. MN: 2. Type: 13.1. Pot rim piece. Less-little stone, ceramic powder, mica added. Very dark gray (10YR 3/1) cemented; outer and inner surfaces are dark grayish brown (10YR 4/2) coated and polished. Well cooked. Hand made.
Comp:

313. 801-12: S-8. MN: 3.1. Type: 13.1. Pot rim piece. Coarse-moderate stone, mica, fine sand and less ceramic powder added. Red (2.5YR 4/6) cemented, gray pithy; outer surface is brown (7.5YR 5/4) coated and polished; inner surface is black (N 2.5) mica added coated. Badly cooked. Hand made.
Comp

314. 52005-1: C-14. MN: 8. Type: 13.1. Pot rim piece. Less mica, ceramic powder, moderate stone, sand added. Dark brown (7.5YR 3/2) cemented; outer and inner surfaces are red (2.5YR 4/6) and reddish black (2.5YR 2.5/1) multi colored, coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

315. 52004-1: C-14. MN: 1.1. Type: 13.1. Pot rim piece. Coarse stone, intense chalk, mica and ceramic powder added. Brown (7.5YR 4/2) cemented; outer surface is black (N 2.5) coated and polished; inner surface is dark brown (7.5YR 3/2) coated and polished. Well cooked. Hand made.
Comp:

316. 35006-10: C-34. MN: 1.1. Type: 13.1. Pot rim piece. Less chalk, mica, moderate sand, coarse stone added. Black (7.5YR 2.5 /1) cemented; outer and inner surfaces are black (N 2.5) coated and outer surface is polished. Moderately cooked. Hand made.

317. 32023-1: C-37. MN: 5. Type: 13.2. Pot rim piece. Little stone, ceramic powder, less mica added. Orange brown (2.5YR 5/6) cemented; outer and inner surfaces are orange brown (2.5YR 6/6) coated and polished. Well cooked. Hand made.
Comp:

318. 32025-7: C-37. MN: 4.1. Type: 13.2. Pot rim piece. Moderate-little stone, chalk and mica added. Red (2.5YR 4/6) cemented; outer surface is red (2.5YR 4/6) coated and polished; inner surface is red (2.5YR 4/6) coated and unpolished. Moderately cooked. Hand made.
Comp:

319. 801-9: S-8. MN: 2. Type: 13.2. Pot rim piece. Moderate-little stone, mica and chalk added. Dark gray (2.5Y 3/1) cemented; outer surface is dark grayish brown (2.5Y 4/2) coated and polished; inner surface is brown (7.5YR 5/4) coated and polished. Moderately cooked. Hand made.
Comp:

320. 15000-1: B-36. MN: 3.1. Type: 13.2. Pot rim piece. Less chalk, mica, moderate sand, coarse and moderate stone added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are reddish brown (5YR 5/4) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

321. 21009-12: B-38. MN: 2. Type: 13.2. Pot rim piece. Little stone, mica, fine sand and chalk added. Brown (10YR 5/3) cemented, black pithy; outer surface is brown (10YR 5/3) coated and polished; inner surface is grayish brown (10YR 5/2) coated. Badly cooked. Hand made.
Comp: Kaygaz 2002: lev.38: 7 (Karagündüz, Late Iron Age)

322. 804-18: S-8. MN: 1.1. Type: 13.2. Pot rim piece. Intense coarse-moderate stone, fine sand, moderately intense chaff and mica added. Dark brown (7.5YR 3/2) cement, dark gray-black pithy; outer surface is dark reddish gray (2.5YR 3/1) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Hand made.
Comp:

323. 52003-1: C-14. MN: 2. Type: 13.2. Pot rim piece. Moderate-little stone, mica and plant added. Dark gray (10YR 6/1) cemented; outer surface is gray (10YR 6/1) coated and polished; inner surface is gray (10YR 5/1) coated and polished. Moderately cooked. Wheel made.
Comp:

324. 18021-1: B-40. MN: 3.1. Type: 13.2. Pot rim piece. Less chalk, mica, sand, moderate stone added. Dark brown (7.5YR 3/3) cemented; outer and inner surfaces are brown (7.5YR 5/3) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

Fig. 34

325. 44007-6: B-14. MN: 3.1. Type: 13.2. Pot rim piece. Little stone, fine sand, mica and plant added. Very dark gray (7.5YR 3/1) cemented, black pithy; outer surface is brown (7.5YR 5/3) mica added coated and smoothed; inner surface is very dark gray (10YR 3/1) mica added coated and smoothed. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.140: 3 (Çayıryolu Hill 3, B.C. 800-300).

326. 16009-6: B-37. MN: 3.1. Type: 13.2. Pot rim piece. Coarse-moderate stone, mica, fine sand, chalk and ceramic powder added. Grayish brown (10YR 5/2) cemented; outer surface is yellowish red (5YR 4/6) coated and polished; inner surface is yellowish red (5YR 4/6) coated and polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.140: 3 (Çayıryolu Hill 3, B.C. 800-300).

327. 37035B-5: C-36. MN: 2. Type: 13.2. Pot rim piece. Less stone, intense fine sand, less mica added. Yellowish gray pithy, red (2.5YR 4/6) and brown (7.5YR 4/3) multi colored cemented; outer and inner surfaces are very dark gray (10YR 3/1) coated and polished. Badly cooked. Made on heavy wheel.
Comp: Sagona et al. 1992: fig.5: 5 (Büyüktepe); Sagona and Sagona 2004: fig.140: 3 (Çayıryolu Hill 3, B.C. 800-300).

328. 51006-2: B-21. MN: 3.1. Type: 13.2. Pot rim piece. Intense-moderate stone, ceramic powder, chalk, fine chaff added. Gray pithy, brown (7.5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/3) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

329. 23026-19: A-41. MN: 6. Type: 13.2. Pot rim piece. Less chalk, sand, moderate stone, intense mica added. Reddish brown (5YR 5/4) cemented; outer and inner surfaces are light gray (5Y 7/2) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

330. 15083-1: B-36. MN: 8. Type: 13.2. Pot rim piece. Intense coarse-moderate stone, fine sand, less mica and chalk added. Light brown (7.5YR 6/4) cemented, gray pithy; outer surface is red (10R 5/6) and gray (7.5YR 5/1) multi colored, coated and polished; inner surface is black (N 2.5) and brown (7.5YR 5/3) multi colored, coated and unpolished. Moderately cooked. Hand made.
Comp:

Fig. 35

331. 804-23: S-8. MN: 1.1. Type: 13.3. Pot rim piece. Moderately intense moderate-little stone and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) coated and polished; inner surface is black (N 2.5) coated and polished. Moderately cooked. Wheel made.
Comp:

332. 25011-3: A-35. MN: 1.1. Type: 13.3. Pot rim piece. Moderate stone, chalk, mica, ceramic powder, intense sand added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) coated and outer surface is polished. Moderately cooked. Hand made.
Comp:

333. 51009-6: B-21. MN: 1.1. Type: 13.3. Pot rim piece. Very little stone, chalk and intense mica added. Very dark gray (7.5YR 3/1) cemented; outer and inner surfaces are fine black (N 2.5) coated and bright polished. Well cooked. Wheel made.
Comp:

334. 37006-3: C-36. MN: 2. Type: 13.3. Pot rim piece. Coarse-moderate stone, fine sand, mica and chalk added. Dark gray (10YR 3/1) cemented; outer surface is dark gray (10YR 3/1) coated and polished; inner surface is brown (10YR 5/3) coated and polished. Moderately cooked. Wheel made.
Comp:

335. 16009-1: B-37. MN: 3.1. Type: 13.3. Pot rim piece. Moderate-little stone, fine sand, mica and less ceramic powder added. Brown (7.5YR 4/3) cemented, gray pithy; outer surface is light brown (7.5YR 6/4) coated and polished; inner surface is dark gray (7.5YR 4/1) coated and polished. Moderately cooked. Hand made.
Comp:

336. 18015-4: B-40. MN: 4.1. Type: 13.3. Pot rim piece. Less mica, chaff, moderate chalk, little stone added. Brown (7.5YR 4/4) cemented; outer surface is dark red (2.5YR 3/6) coated and polished; inner surface is brown (7.5YR 5/4) coated. Moderately cooked. Wheel made.
Comp: Sagona and Sagona 2004: fig. 117: 2 (Pulur-Danışment, B.C. 900-300); Ökse 1988: abb.374 (Değirmentepe, Iron Age)

337. 50002-3: B-27. MN: 3.1. Type: 13.3. Pot rim piece. Less chalk, mica, sand, ceramic powder, chaff, moderate stone added. Brown (7.5YR 4/3) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and outer surface is polished. Moderately cooked. Hand made.
Comp: Sagona 1999: fig.5: 3 (Yeni Çakmak, Late Iron Age –Hellenistic)

338. 50030-5: B-27. MN: 4.1. Type: 13.3. Pot rim piece. Moderate stone, chalk, less fine chaff added. Reddish brown (5YR 4/4) cemented; outer and inner surfaces are dark yellowish brown (10YR 4/4) coated and bright polished. Moderately cooked. Hand made.
Comp:

339. 39007-2: C-33. MN: 6. Type: 13.3. Pot rim piece. Moderate stone, intense chalk, mica added. Red (2.5YR 5/6) cemented; outer surface is light gray (cream) (2.5Y 7/2) fine coated and unpolished; inner surface is light reddish brown (5YR 6/4), uncoated and unpolished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.111:9 (Mezarlık Hill, B.C.900-300)

340. 15026-2: B-36. MN: 3.1. Type: 13.3. Pot rim piece. Moderate-little stone, fine sand and mica added. Very dark gray (10YR 3/1) cemented; outer surface is light brown (7.5YR 6/4) coated and polished; inner surface is black (N 2.5) mica added coated. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.111:9 (Mezarlık Hill, B.C.900-300)

<u>Fig. 36</u>

341. 33000-1: B-49. MN: 3.1. Type: 13.3. Pot rim piece. Moderate-less stone, intense sand and mica added. Brown (7.5YR 4/4) cemented; outer and inner surfaces are light brown (7.5YR 6/4) coated and outer surface is polished. Well cooked. Hand made.
Comp: Summers 1993: fig.8: 8.

342. 15031-7: B-36. MN: 3.1. Type: 13.3. Pot rim piece. Moderate-little, fine sand, mica and chalk added. Brown (7.5YR 5/4) cemented, gray pithy; outer surface is brown (7.5YR 5/3) coated and polished; inner surface is brown (7.5YR 5/3) coated and polished. Badly cooked. Hand made.
Comp: Kroll 1979: abb.3: 30 (Hill Lumbad, Urartu)

343. 13001-4: B-34. MN: 7. Type: 13.3. Pot rim piece. Very little ceramic powder, chalk, stone, intense mica added. Dark brown (7.5YR 3/3) cemented; outer and inner surfaces are very dark gray (7.5YR 3/1) and brown (7.5YR 4/4) multi colored, coated and polished. Well cooked. Hand made.
Comp:

344. 37035B-8: C-36. MN: 3.1. Type: 13.3. Pot rim piece. Intense coarse-moderate stone, fine sand and ceramic powder added. Very dark gray (7.5YR 3/1) cemented; outer surface is light brown (7.5YR 6/4) coated and polished; inner surface is brown (7.5YR 4/3) coated and polished. Moderately cooked. Hand made.
Comp: Sagona et al. 1992: fig.6: 3 (Büyüktepe, Iron Age); Sagona and Sagona 2004: fig.140: 5 (Çayıryolu Hill 3, B.C. 800-300).

345. 50001-1: B-27. MN: 5. Type: 13.3. Pot rim piece. Less chalk, mica, moderate sand, coarse and moderate stone added. Reddish brown (5YR 5/4) cemented; outer and inner surfaces are yellowish red (5YR 5/6) coated and outer surface is polished. Moderately cooked. Hand made.
Comp: Sagona and Sagona 2004: fig. 128: 12 (Rüştü, B.C. 900-300)

346. 28013-6: B-42. MN: 1.1. Type: 13.4. Pot rim piece. Very little stone, chalk, very intense mica added. Black (7.5YR 2.5/1) cemented; outer and inner surfaces are very dark blackish gray (7.5YR 3/1) coated blackish polished. Moderately cooked. Hand made.
Comp:

347. 36015-2: A-32. MN: 6. Type: 13.4. Pot rim piece. Intense ceramic powder, moderate stone, mica, fine chaff added. Dark grayish brown (10YR 4/2) cemented; outer surface is light gray (cream) (2.5Y 7/2) coated and unpolished; inner surface is red (2.5YR 5/6) and dark reddish gray (2.5YR 3/1) multi colored, uncoated and unpolished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.109: 12 (İncili, B.C.900-300)

348. 43003-1: A-43. MN: 6. Type: 13.4. Pot rim piece. Very coarse stone, ceramic powder, fine mica, chaff added. Gray pithy, red (2.5YR 4/8) cemented; outer surface is dull yellow (cream) (2.5Y 7/3) fine coated and unpolished; inner surface is reddish brown (5YR 5/4), uncoated and unpolished. Moderately cooked. Made on heavy wheel.
Comp: Muscarella 1973: fig.19: 9 (Agrab Hill, Late Iron Age)

Fig. 37

349. 27003-17: C-35. Type: 14.1. Water jug rim piece. MN: 4.2. Less mica, little stone, chaff and mica added. Red (2.5YR 5/6) cemented, dark gray pithy; outer surface is red (2.5YR 4/6) coated and polished; inner surface is red (2.5YR 4/6) coated and polished. Moderately cooked. Wheel made.
Comp:

350. 19058-1: A-36. MN: 5. Type: 14.1. Water jug rim piece. Intense coarse-moderate stone, sand, mica and chalk added. Black (N 2.5) cemented; outer surface is yellowish red (5YR 5/6) and black (N 2.5) multi colored, thick coated and polished, vertical polish signs are observed at outer surface; inner surface is uncoated ve unpolished. Badly cooked. Hand made.
Comp:

351. 19035-2: A-36. MN: 5. Type: 14.1. Water jug rim piece. Coarse-moderate stone, chalk and mica added. Red (2.5YR 5/8) cemented; outer is surface red (2.5YR 5/6) coated and polished, vertical polish signs are observed at outer surface. Moderately cooked. Hand made.
Comp:

352. 51000-1: B-21. MN: 4.2. Type: 14.1. Water jug rim piece. Less mica, moderate-little and chalk added. Red (2.5YR 4/6) cemented; outer surface is red (2.5YR 4/6) coated and polished; inner surface is red (2.5YR 4/6) coated polished. Moderately cooked. Hand made.
Comp:

353. 800-3: S-8. MN: 3.1. Type: 14.1. Water jug rim piece. Moderate-less chalk, stone, ceramic powder, intense sand, and mica added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and outer surface is polished. Well cooked. Hand made.
Comp:

354. 801-5: S-8. MN: 4.2. Type: 14.1. Water jug rim piece. Very little stone, intense fine sand, mica added. Reddish brown (5YR 4/4) cemented; outer and inner surfaces are red (10R 4/6) fine coated and bright polished. Well cooked. Wheel made.
Comp:

355. 804-16: S-8. MN: 6. Type: 14.2. Water jug rim piece. Very little ceramic powder, intense mica added. Gray pithy, yellowish red (5YR 5/8) cemented; outer and inner surfaces are light gray (cream) (2.5Y 7/2) coated and polished. Well cooked. Wheel made.
Comp:

356. 15068-1: B-36. MN: 4.1. Type: 14.2. Water jug rim piece. Moderate-little stone, chalk, mica and chaff added. Red (2.5YR 4/6) cemented; outer surface is reddish brown (5YR 6/4) coated and polished; inner surface is red (2.5YR 4/6) uncoated and unpolished. Moderately cooked. Hand made.
Comp:

357. 52004-5: C-14. MN: 2. Type: 14.2. Water jug rim piece. Moderate-little stone, mica, fine sand added. Black (2.5Y 2.5/1) cemented; outer surface is gray (10YR 5/1) coated and polished; inner surface is brown (7.5YR 5/3) coated and polished. Moderately cooked. Wheel made.
Comp:

358. 25004-2: A-35. MN: 3.1. Type: 14.2. Water jug rim piece. Little stone, fine sand, mica and plant added. Dark brown (7.5YR 3/2) cemented, black pithy; outer surface is brown (7.5YR 4/3) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Badly cooked. Wheel made.
Comp:

Fig. 38

359. 35015-6: C-34. MN: 7. Type: 15. Vase rim piece. Moderate stone, intense chalk, ceramic powder, mica added. Dark brown (7.5YR 4/6) cemented; outer and inner surfaces are black (N 2.5) and very dark grayish brown (10YR 3/2) multi colored, coated and polished. Well cooked. Hand made.
Comp: Summers 1993: fig. 5: 3 (Akamenid?);

360. 53005-9: B-12. MN: 1.2. Type: 15. Vase rim piece. Less mica, little stone and fine sand added. Dark brown (10YR 2/1) cemented; outer and inner surfaces are bright black (N 2.5) coated and polished. Well cooked. Wheel made.
Comp:

361. 50035: B-27. MN: 8. Type: 15. Vase rim piece. Less ceramic powder, intense mica added. Yellowish red (5 YR 5/6) cemented; outer surface is red (2.5 YR 5/6) and black (10YR 2/1) multi colored, coated and polished. Well cooked. Wheel made.
Comp:

Fig. 39

362. 32031: C-37. MN: 7. Type: 15. Cube. Less-little stone, chalk, ceramic powder, less mica added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are grayish brown (10YR 5/2)

and black (10YR 2/1) multi colored, outer surface is coated and polished, inner surface is coated. Moderately cooked. Hand made.
Comp:

363. 25042: A-35. MN: 3.1. Type: 15. Cube. Less chalk, mica, moderate sand, coarse and moderate stone added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated, outer surface is polished. Moderately cooked. Hand made.
Comp:

364. 29009: A-39. MN: 8. Type: 15. Cube. Intense-coarse stone, less-fine chaff, chalk, mica added. Black pithy, dark red (2.5YR 3/6) cemented; outer surface is black (N 2.5) and red (10R 4/6) multi colored, coated and polished; inner surface is reddish brown (7.5YR 4/4) coated and unpolished. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.183:2 (Kızkalaesi, B.C. 600-200)

<u>Fig. 40</u>

365. 25011-5: A-35. MN: X. Little stone, fine sand, chalk and mica added cement. Brown (7.5YR 5/6) cemented; outer and inner surfaces are fine cream (10YR 8/3) coated. There are black (N 2.5) wave decoration and linear red (10R 4/8) decoration on a fine cream coating on the outer surface. Moderately cooked. Wheel made.
Comp: Sagona et al. 1995: fig.11: 10 (Sos Tumulus, Akamenid)

366. 41000-3: C-38. MN: 6. Very little ceramic powder, fine sand and mica added. Reddish yellow (5YR 6/6) cemented. Outer and inner surfaces are fine very dull brown (7.5YR 7/4) cream coated, red (2.5YR 5/6) and reddish brown (5YR 4/3) paint decorated for outside and inside. Well cooked. Wheel made.
Comp:

367. 19016-2: A-36. MN: 4.1. Little stone, chalk, mica added. Yellowish red (5YR 5/6) cemented. Inner surface is corroded. Outer surface is fine dull brown (10YR 7/3) coated, there are very dark gray (7.5YR 3/1) and dark reddish brown (2.5YR 3/4) wave decoration at the outer surface. Well cooked. Wheel made.
Comp:

368. 37006-4: C-36. MN: 6. Less stone, chalk, ceramic powder and mica and plant added. Yellowish red (5YR 5/6) cemented. Outer surface is very light brown (10YR 7/3) cream coated, there are ring-shaped black (N 2.5) and red (2.5YR 5/6) paint decorations at the outer surface, red (2.5YR 5/6) paint band decorations at the top. Well cooked. Wheel made.
Comp:

369. 19019-1: A-36. MN: 4.1. Moderate and coarse stone, less mica and plant added. Yellowish red (5YR 5/6) cemented. Inner surface is corroded. Outer surface is light brown (7.5YR 6/4) coated and polished, there are black (N 2.5) and red (2.5YR 5/6) mixed circular and linear motifs and paint decorations at the outer surface. Moderately cooked. Wheel made.
Comp:

370. 54000-1: C-12. MN: X. Little stone, fine sand and mica added cement. Brown (7.5YR 5/4) cemented; outer surface is light brown (7.5YR 6/4) coated and polished, inner surface is brown (7.5YR 5/4) uncoated and unpolished. There is a big, red (10R 4/6) painted triangular decoration on the outer surface. Well cooked. Wheel made.
Comp:

371. 25006-5: A-35. MN: X. Little stone, fine sand, chalk and mica added cement. Brown (7.5YR 5/3) cemented; outer surface is thick cream (2.5Y 8/2) coated, inner surface is gray

(7.5YR 5/1) coated. There is a dark gray (2.5Y 4/1) paint band on a thick cream coating at the outer surface. Moderately cooked. Wheel made.
Comp:

372. 18016-13: B-40. MN: 3.1. Little stone, chalk, mica added. Fine black pithy, brown (7.5YR 4/4) cemented. Fine coated and polished for both surfaces. Inner surface is paint decorated as a red (10R 4/1) colored ribbon. Moderately cooked. Wheel made.
Comp:

373. 16026-8: B-37. MN: 3.1. Well purified, tightly cemented. Moderate, less stone and intense fine mica added. Light yellowish brown (10YR 6/4) cemented; it is fine coated and polished in the color of for both surfaces. Inner side is red (10R 4/6) paint decorated as parallel ribbons. Well cooked. Wheel made.
Comp:

374. 21007-5: B-38. MN: 3.1. Well purified, tightly cemented. Moderate, less stone and intense fine mica added. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are brownish yellow (10YR 6/6) coated. Inner surface is ribbon-shaped red (10R 4/1) paint decorated. Well cooked. Wheel made.
Comp:

375. 19030-2: A-36. MN: 3.1. Well purified, tightly cemented. Intense fine mica, ceramic powder added. Brown (7.5YR 5/4) cemented. Both surfaces are light yellowish brown (10YR 6/4) coated. Inner surface parallel, thick red (10R 4/6) ribbon paint decorated. Well cooked. Wheel made.
Comp:

376. 37004-1: C-36. MN: 3.1. Moderate tightly cemented. Little stone, chalk, intense fine mica added. Dark brown (7.5YR 5/6) cemented. Outer and inner surfaces are fine light brown (7.5YR 6/4) coated, outer surface is polished. Outer surface is red (10R 4/6) paint decorated. Moderately cooked. Hand made.
Comp:

377. 16021-8: B-37. MN: 3.1. Little stone, chalk, mica added. Fine black pithy, brown (7.5YR 4/4) cemented. Outer and inner surfaces are fine coated and polished. Inner surface is red (10R 4/1), ribbon-shaped paint decorated. Moderately cooked. Wheel made.
Comp:

378. 12002-1: B-33. MN: 3.1. Well purified, tightly cemented. Yellowish red (5 YR 5/6) cemented. Outer and inner surfaces are light brown (7.5YR 6/4) coated. There is red (10R 4/6) paint decoration of diamond-shaped motifs between thick bands at the outer surface. Well cooked. Wheel made.
Comp:

379. 55011-2: C-13. MN: 4.1. Little stone, chalk, mica added. Red (10R 4/8) cemented. Outer surface is fine light brown (7.5YR 6/4) coated, outer surface is thick red (2.5YR 4/6) painted band decorated. Moderately cooked. Wheel made.
Comp:

380. 19002-1: A-36. MN: 4.1. Moderate tightly cemented. Intense-little stone, chalk, ceramic powder, less mica added. Yellowish red (5 YR 5/6) cemented. Inner surface is corroded. Outer surface is fine red (2.5YR 5/6) coated, outer surface is dark reddish brown (2.5YR 3/4) and very dull brown (10YR 8/3) paint decorated. Moderately cooked. Wheel made.
Comp:

381. 19016-3: A-36. MN: 6. Well purified tightly cemented, very little ceramic powder, white stone added. Reddish yellow (5YR 6/8) cemented; outer and inner surfaces are light gray (cream), (2.5Y 6/2) coated, outer surface is paint decorated as parallel bands, overlying band is yellowish red (5YR 5/6), underlying band is dark reddish gray (2.5YR 3/1) painted. Very well cooked. Wheel made.
Comp:

382. 20008-3: B-39. MN: 6. Well purified tightly cemented, very little ceramic powder, stone added. Reddish yellow (5YR 6/6) cemented; outer and inner surfaces are fine pink (cream) (7.5YR 7/4) coated, outer surface is very dark gray (7.5YR 3/1) and red (2.5YR 5/6) paint decorated. Well cooked. Wheel made.
Comp:

Fig. 41

383. 19020-1: A-36. MN: 4.1. Little stone, fine sand, chalk and mica added cement. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are red (10R 4/6) mica added coated. Well cooked.
Comp:

384. 14018-1: B-35. MN: X. Coarse-moderate stone, fine sand and mica added cement. Fine black pithy, light brown (7.5YR 6/4) cemented; outer and inner surfaces are light brown (7.5YR 6/4) coated and polished. There is a thick red (10R 4/6) paint band on the ewer. Moderately cooked. Hand made.
Comp:

385. 25011-9: A-35. MN: X. Moderate-little stone, fine sand, ceramic powder and mica added cement. Light red (2.5YR 6/6) cemented; surface is thick cream (10YR 7/4) coated. There are light red (2.5YR 6/6) and dark gray (7.5YR 4/1) line decorations on the cream coating. Among the line decorations, dark gray point decorations are observed. Some of line decorations resemble fish bone motifs. Well cooked. Hand made.
Comp:

Fig. 42

386. 12001-10: B-33. MN: 1.1. Three lines of amorphous nodule decorations on the main part. Intense ceramic powder, little stone, chalk and mica added. Black (N 2.5) cemented; outer surface is black (N 2.5) and grayish brown (2.5Y 5/2) coated and polished, inner surface is dark gray (7.5YR 4/1) uncoated and unpolished. Moderately cooked. Hand made.
Comp:

387. 35012-8: C-34. MN: 2. Handle. Moderate-little stone, fine sand, ceramic powder and mica added cement. Black pithy, dark gray (7.5YR 3/1) cemented; surface is grayish brown (10YR 5/2) coated and smoothed. Badly cooked.
Comp:

388. 24014-13: A-40. MN: 3.1. Handle. Coarse-moderate stone, fine sand and mica added cement. Black pithy, dark gray (10YR 3/1) cemented; surface is dull brown (10YR 6/3) coated and polished. Badly cooked.
Comp: Sagona and Sagona 2004: fig. 116: 5 (Pulur-Danışment, B.C. 900-300)

389. 30008-6: B-43. MN: X. Handle. Fine sand and less mica added tightly cement. Gray (10YR 5/1) cemented; surface is black (N 2.5) bright coated and polished. Well cooked.
Comp:

390. 20011-1: B-39. MN: 3.1. Handle. Fine sand, little-moderate stone, and mica added cement. Brown (7.5YR 4/4) cemented; surface is red (10R 4/4) coated and polished. Badly cooked. Hand made.
Comp:

391. 34009-2: A-42. MN: 2. Handle. Fine sand, little stone and mica added cement. Dark gray (10YR 3/1) cemented; surface is dark gray (2.5Y 3/1) coated and polished. Moderately cooked. Hand made.
Comp:

392. 24011-6: A-40. MN: 3.1. Handle. Fine sand, little stone and less mica added cement. Gray pithy, reddish brown (2.5YR 4/6) cemented; surface is reddish brown (2.5YR 5/4) coated and polished. Badly cooked.
Comp: Sagona et al. 1995: fig.11: 7 (Sos Tumulus, Akamenid)**.**

Fig. 43

393. 27010-5: C-35. MN: 7. Circular dip piece, fish-bone shaped deep chamfer decorated at the bottom. Intense, moderate stone, chalk, intense mica, fine chaff and ceramic powder added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5) and brown (7.5YR 4/4) multi colored, outer surface is polished. Moderately cooked. Hand made.
Comp: Kozbe et al. 2001: plate 4: 4 (Ayanis, Urartu) continuity of the decoration will be emphasized.

394. 39001-18: C-33. MN: 3.1. Dip. Moderate-little stone, fine sand, chalk, and mica added cement. Grayish brown (10YR 5/2) cemented; outer surface is grayish brown (10YR 5/2) coated and polished, inner surface is grayish brown (10YR 5/2) mica added coated. Moderately cooked. Hand made.
Comp:

395. 55011-5: C-13. MN: 3.1. Dip. Moderate-little stone, fine sand and mica added cement. Brown (7.5YR 4/4) cemented; outer surface is brown (7.5YR 4/2) coated, inner surface is yellowish red coated. Moderately cooked. Hand made.
Comp:

396. 44004-8: B-14. MN: 1.1. Moderate-little stone, fine sand, ceramic powder and mica added cement. Black (2.5Y 2.5/1) cemented; outer surface is black (N 2.5) coated and polished, inner surface is grayish brown (10YR 5/2) coated. Badly cooked. Hand made.
Comp: Sagona and Sagona 2004: fig.182:3 (İvikler Hill, B.C. 600-200)

397. 12037-1: B-33. MN: 4.1. Dip. Little stone, fine sand, ceramic powder and mica added cement. Red (10R 4/6) cemented; outer surface is red (10R 4/6) coated, inner surface is brown (7.5YR 4/2) coated. Moderately cooked. Hand made.
Comp:

398. 52008-5: C-14. MN: 7**.** Little stone, fine sand and mica added. Dark gray (10YR 3/1) cemented; outer surface is black (N 2.5) and reddish brown (5YR 4/3) multi colored coated and polished, inner surface is black (N 2.5) coated and polished. Badly cooked. Made on heavy wheel.
Comp

399. 27011-2: C-35. MN: 2. Fine sand and mica added. Dark gray (10YR 4/1) cemented; inner and outer surfaces are dark gray (10YR 3/1) coated and polished; inner surface is reddish brown (5YR 4/4) coated and polished. Well cooked. Wheel made.
Comp:

400: 39004-5: C-33. MN: 1.1. Moderate-little stone, intense fine sand and mica added cement. Black (N 2.5) cemented; inner and outer surfaces are dark gray (10YR 3/1) coated and polished. Badly cooked. Hand made.
Comp:

401. 56003-2: A-26. MN: 4.1. Little stone, fine sand, ceramic powder and mica added cement. Dark gray pithy, reddish brown (2.5YR 4/4) cemented; outer surface is reddish brown (5YR 5/4) coated, inner surface is red (10R 4/6) coated and polished. Moderately cooked. Wheel made.
Comp:

402. 16009-7: B-37. MN: 8. Bed plate piece. Coarse stone, chalk, chaff and mica added. Red (2.5YR 5/6) cemented; outer and inner surfaces are black (N 2.5) and red (2.5YR 5/6) multi colored, coated and polished. Badly cooked. Hand made.
Comp:

Fig. 44

403. 25011-8: A-35. MN: 1.1. Miniature. Coarse stone, chalk, chaff added. Black (N 2.5) cemented; outer and inner surfaces are black (N 2.5), uncoated and unpolished. Very badly cooked. Hand made.
Comp:

404. 19010: A-36. MN: 3.1. Less chalk, sand, moderate stone added. Brown (7.5YR 5/4) cemented; outer and inner surfaces are brown (7.5YR 5/4) coated and polished. Moderately cooked. Hand made.
Comp: Russel 1980: fig.23: 267.5 (Middle Iron Age)

405. 13002: B-34. MN: 1.1. Less chalk, mica, ceramic powder, chaff, moderate stone added. Black (N 2.5) cemented; outer and inner surfaces are dark gray (7.5YR 4/1) uncoated and unpolished. Badly cooked. Hand made.
Comp:

406. 13011-4: B-34. MN: 3.1. Little-less stone, fine sand and mica added. Yellowish brown (10YR 5/4) cemented; outer surface is reddish brown (5YR 5/4) coated and polished; inner surface is reddish brown (5YR 5/4) coated and smoothed. Badly cooked. Hand made.
Comp:

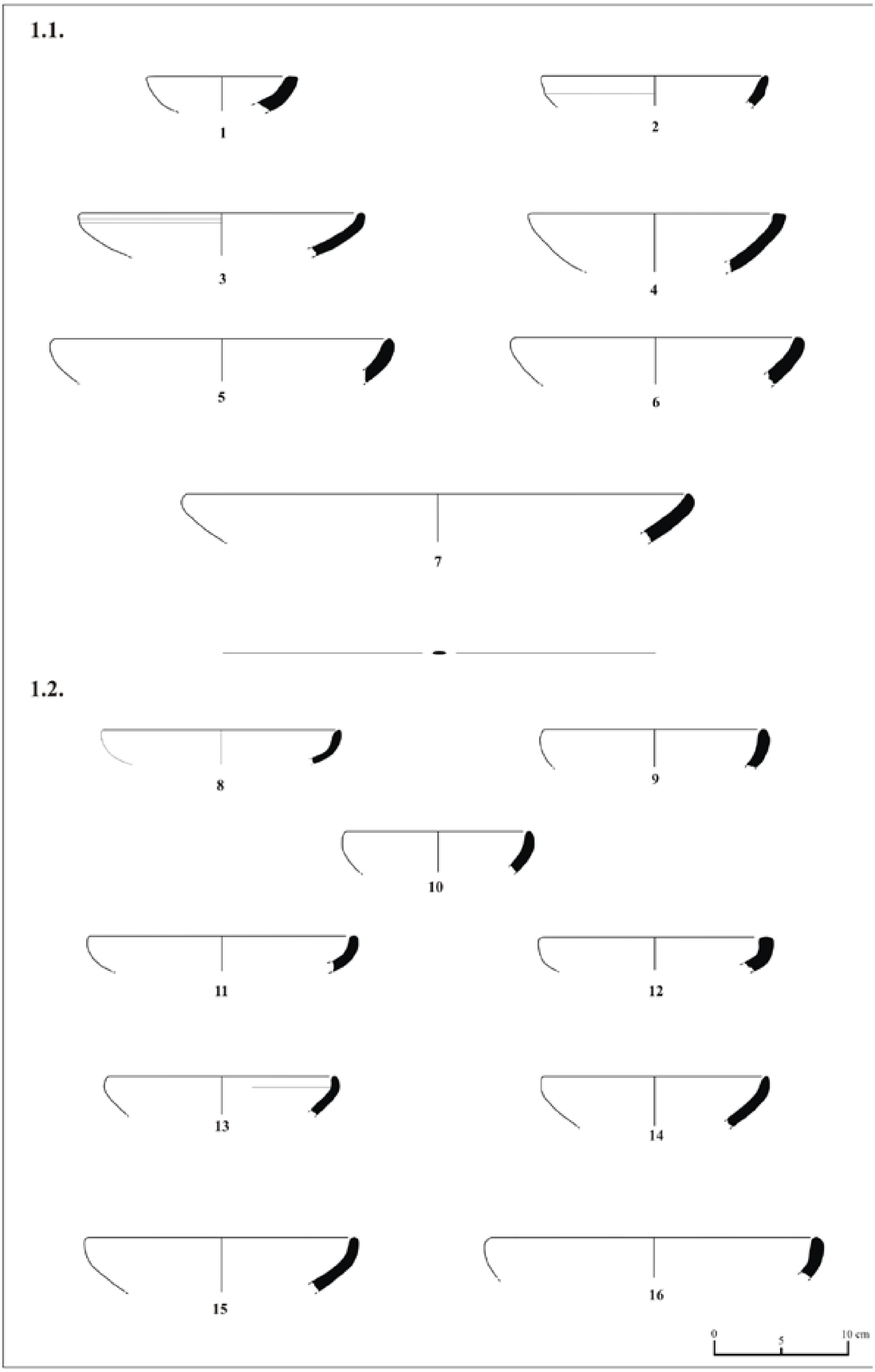
407. 50017: B-27. MN: 3.1. Less coarse stone, fine sand, mica and chalk added. Reddish brown (5YR 4/4) cemented; outer and inner surfaces are brown (7.5YR 4/4) coated and unpolished. Moderately cooked. Hand made.
Comp:

408. 23026-7: A-41. MN: 4.1. Little stone, mica, sand added. Dark brown (7.5YR 4/6) cemented; outer and inner surfaces are dark red (2.5YR 3/6) coated and polished. Moderately cooked. Hand made.
Comp:

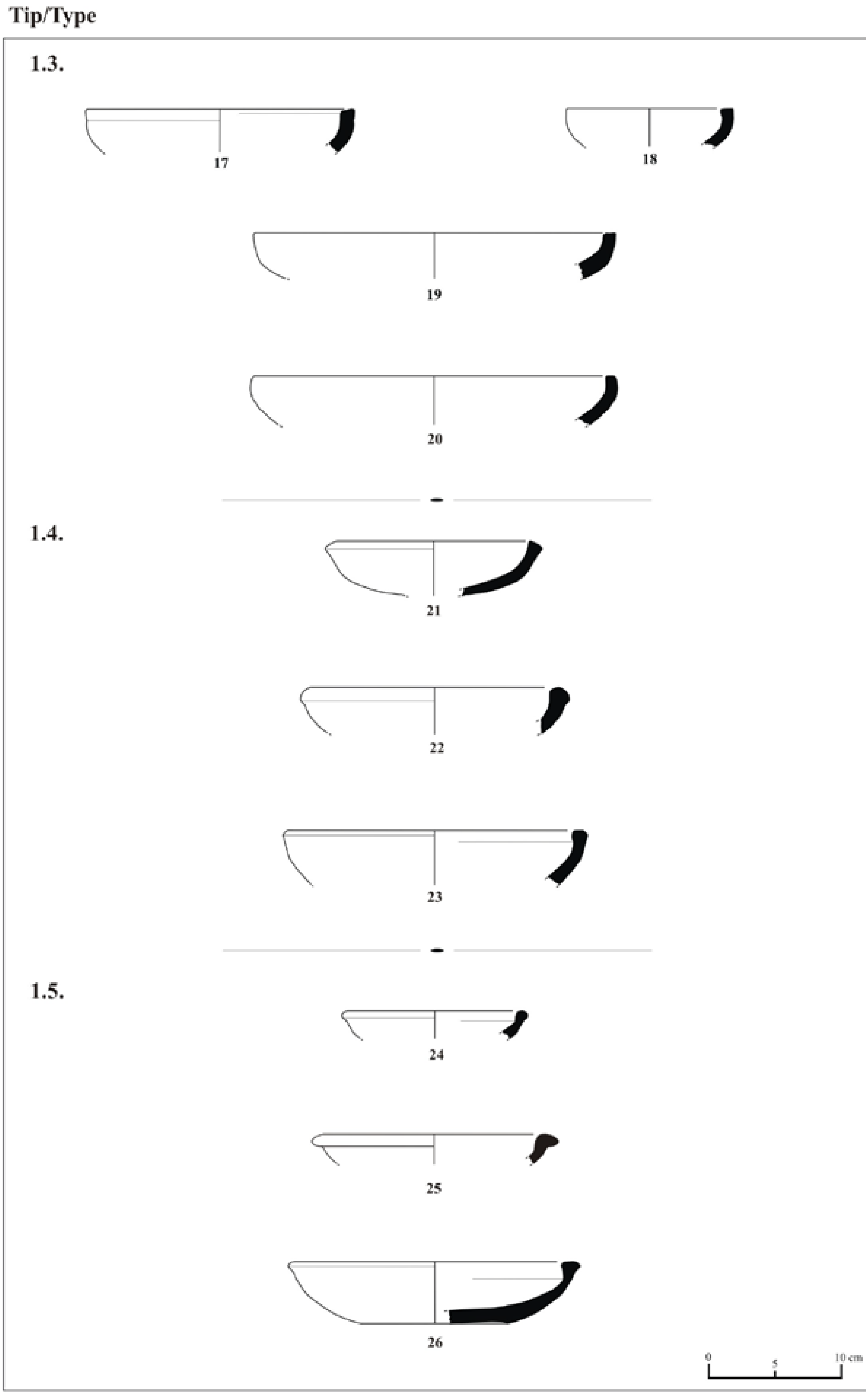
409. 15036: B-36. MN: 3.1. Less chalk, mica, ceramic powder, chaff, moderate stone added. Light brown (7.5YR 6/4) cemented; outer and inner surfaces are light brown (7.5YR 6/3), uncoated and unpolished. Badly cooked. Hand made.
Comp:

410. 14000-4: B-35. MN: 2. Less coarse stone, fine sand, mica and chalk added. Brown (7.5YR 5/6) cemented, black pithy; outer surface is brown (7.5YR 5/4) coated; inner surface is brown (7.5YR 5/4) coated. Badly cooked. Hand made.
Comp:

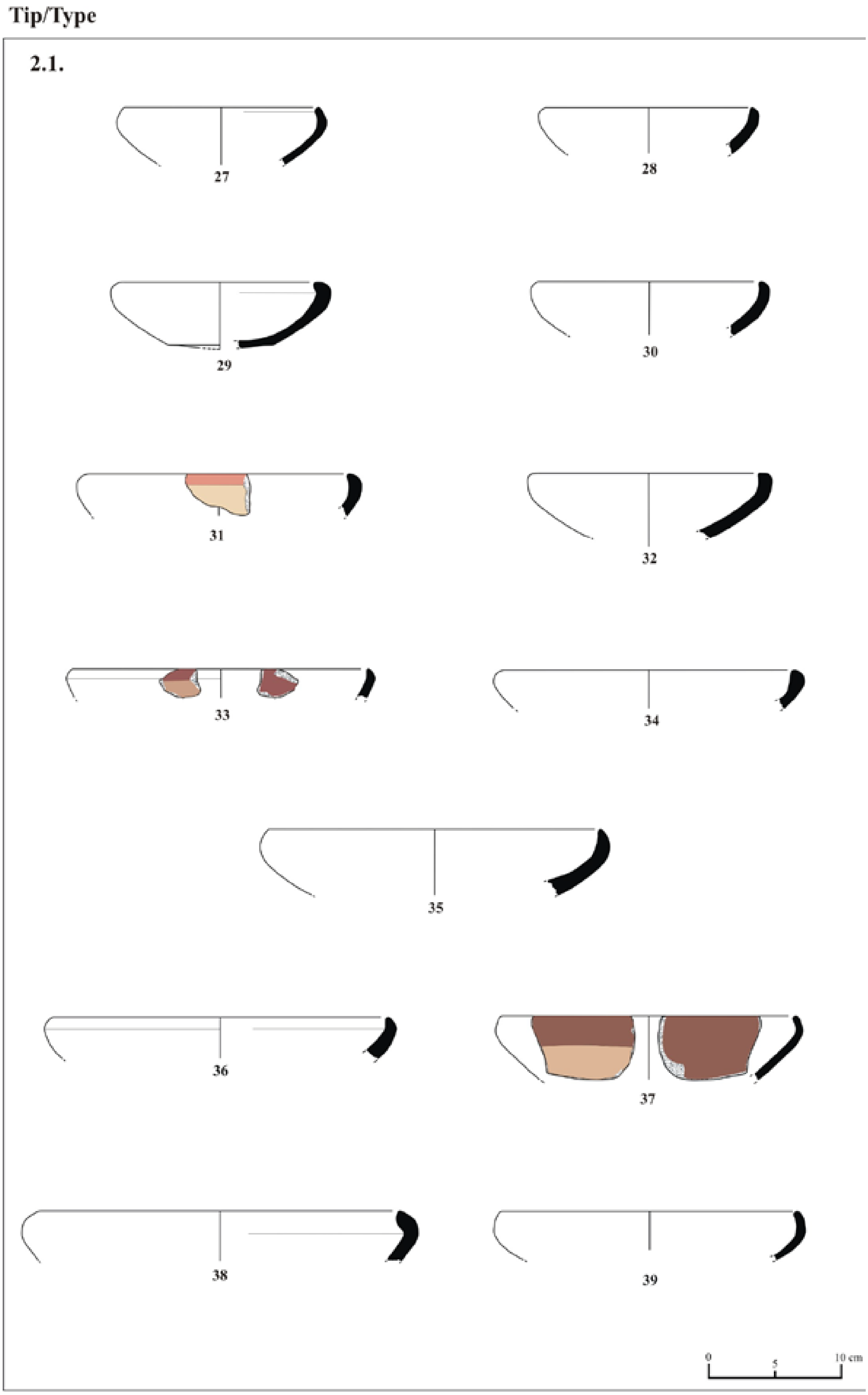
Tip/Type



Res. - Fig.1

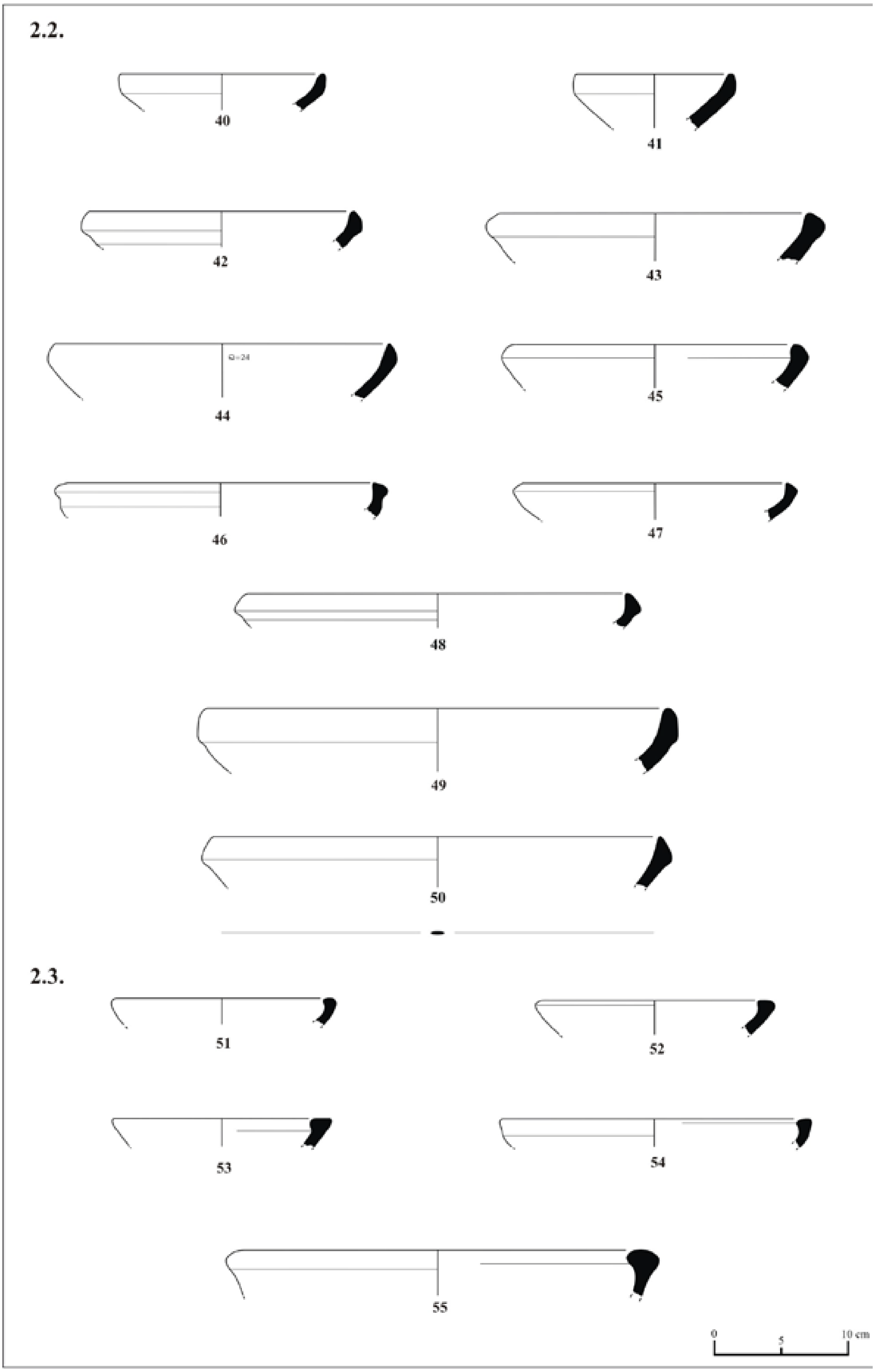


Res. - Fig.2



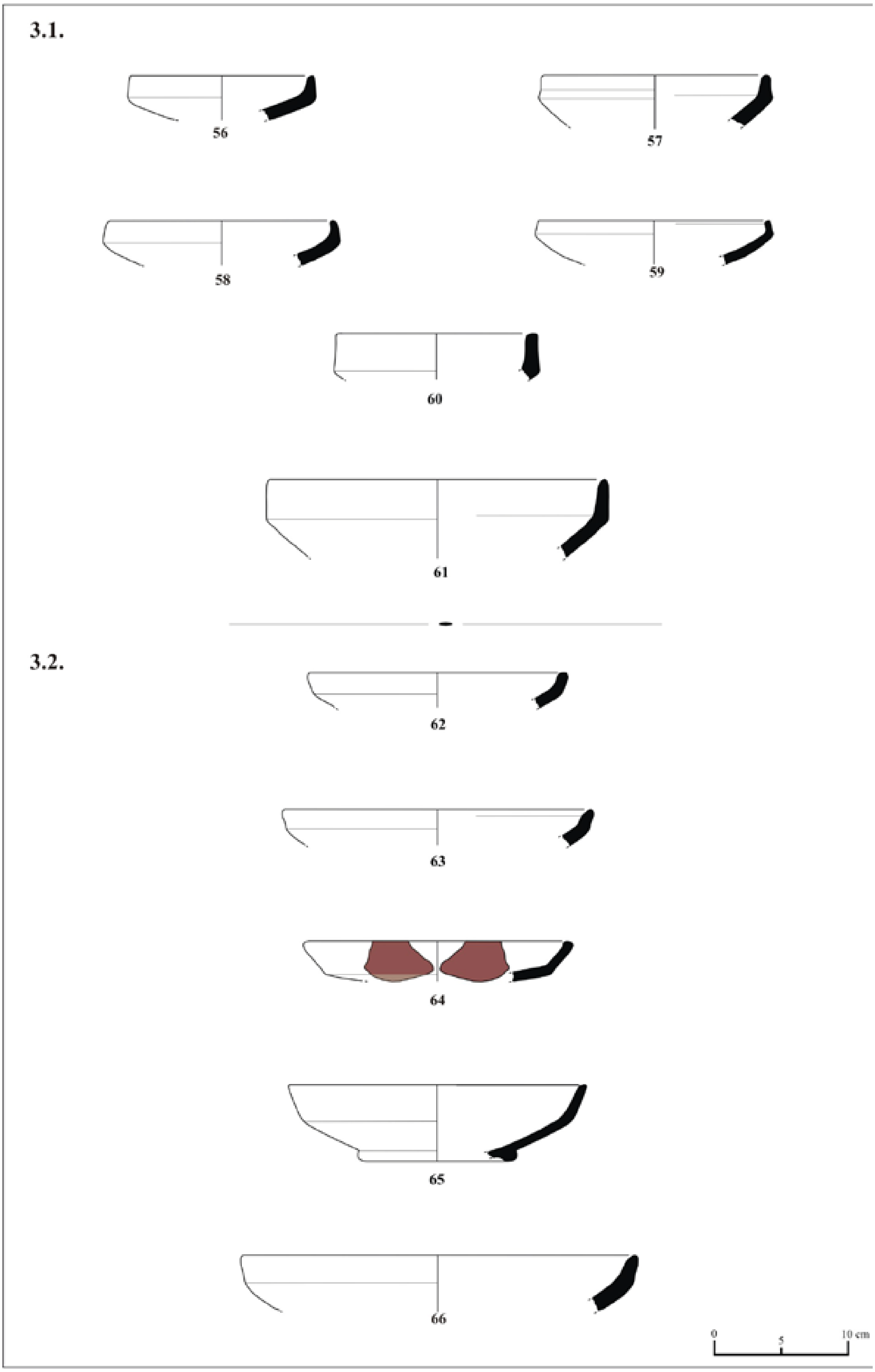
Res. - Fig.3

Tip/Type



Res. - Fig.4

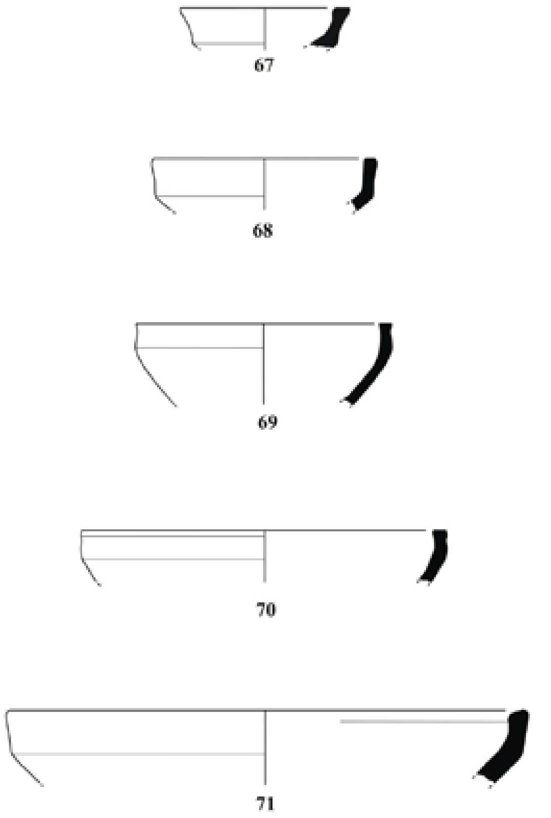
Tip/Type



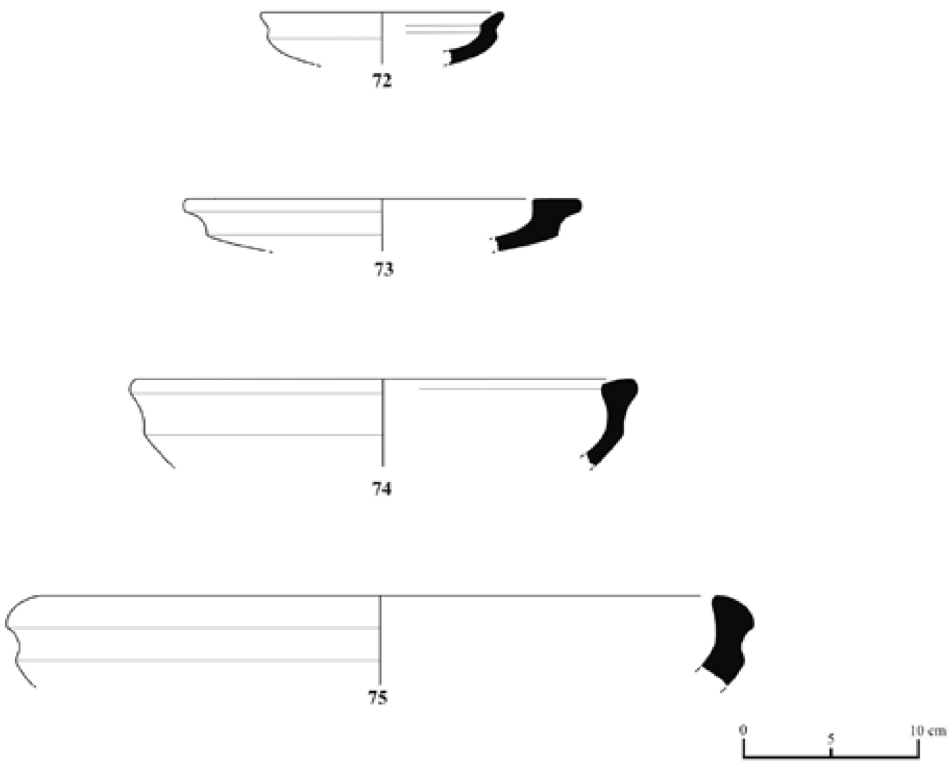
Res. - Fig.5

Tip/Type

3.3.

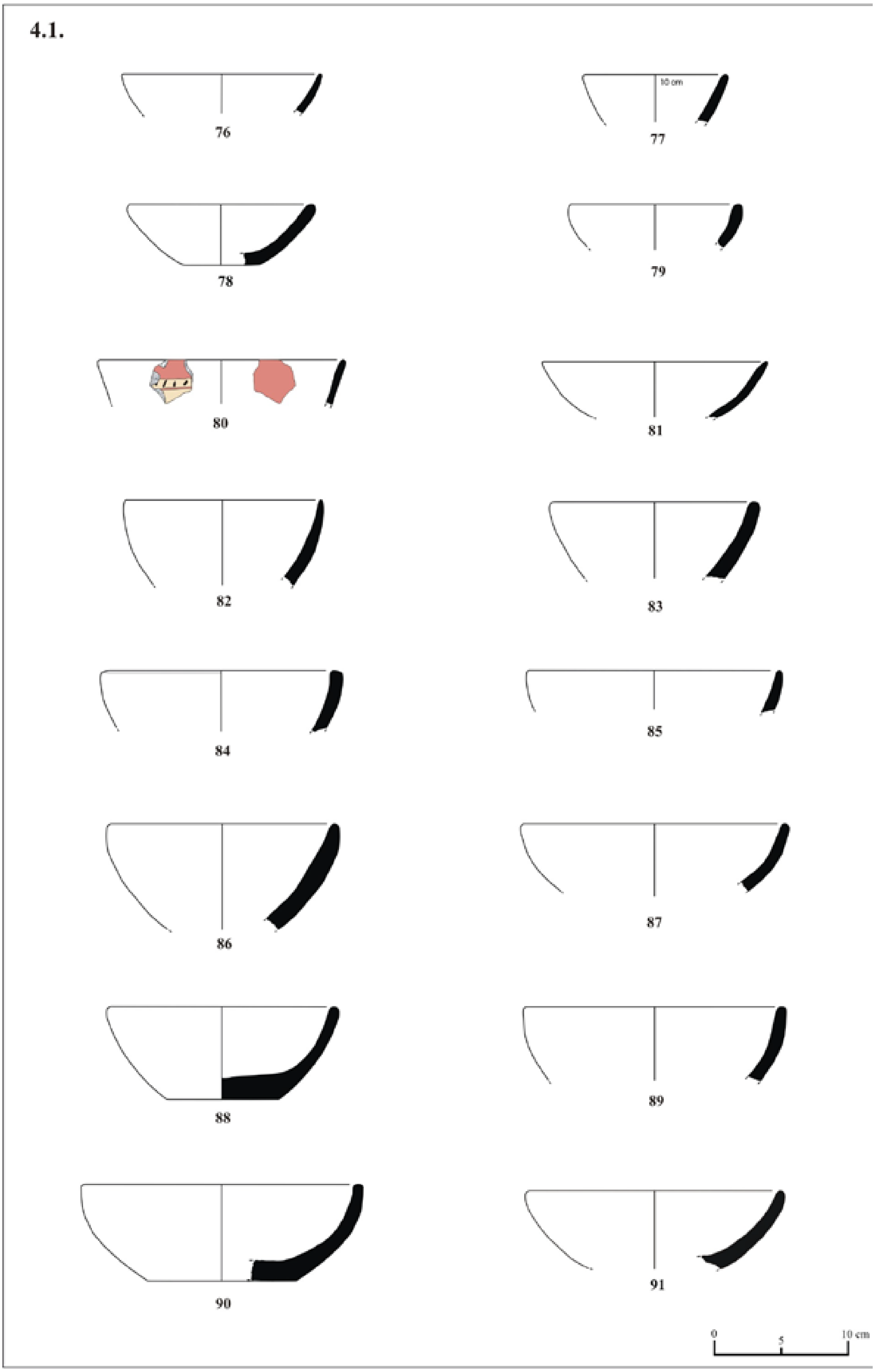


3.4.



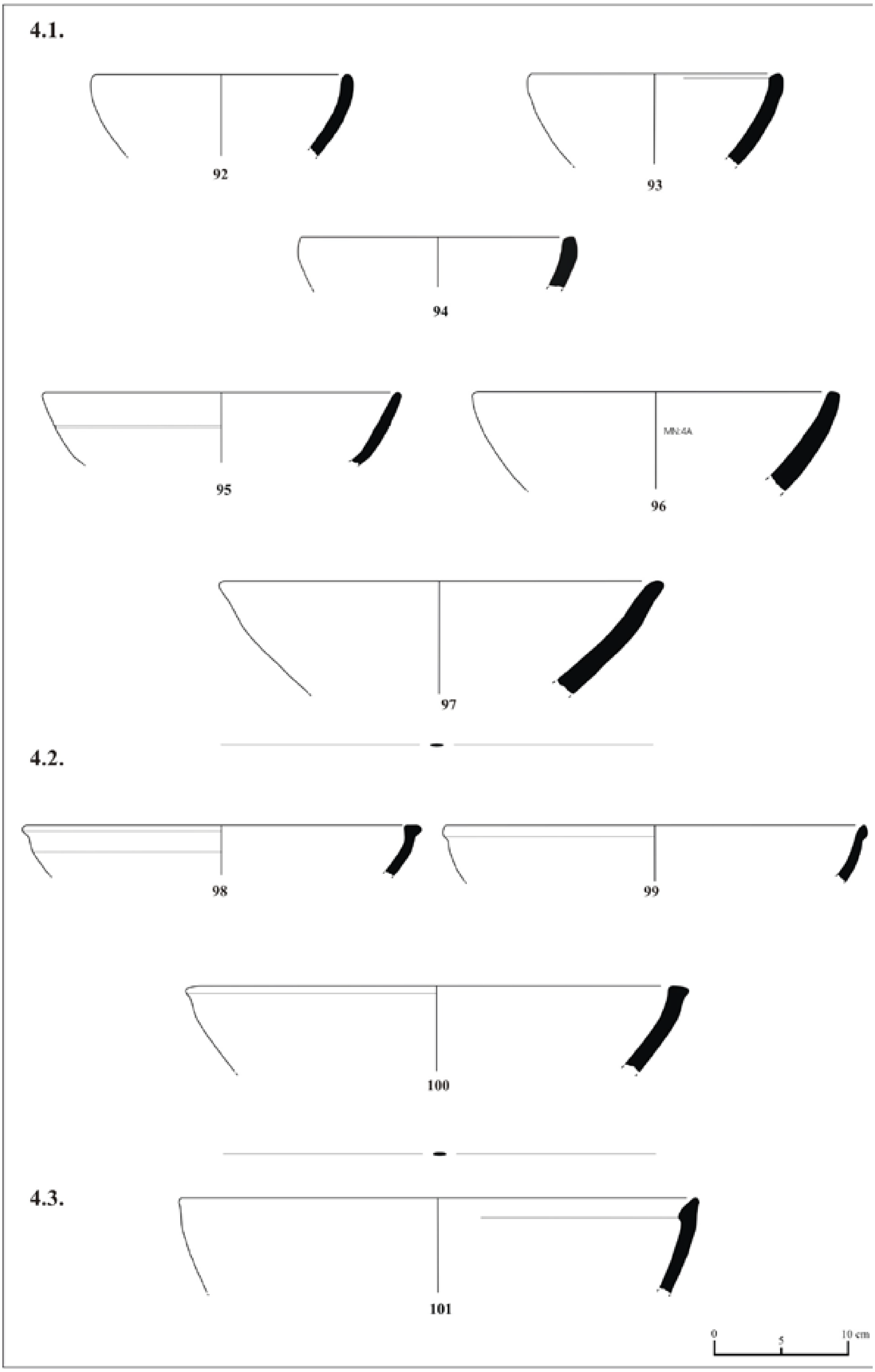
Res. - Fig.6

Tip/Type



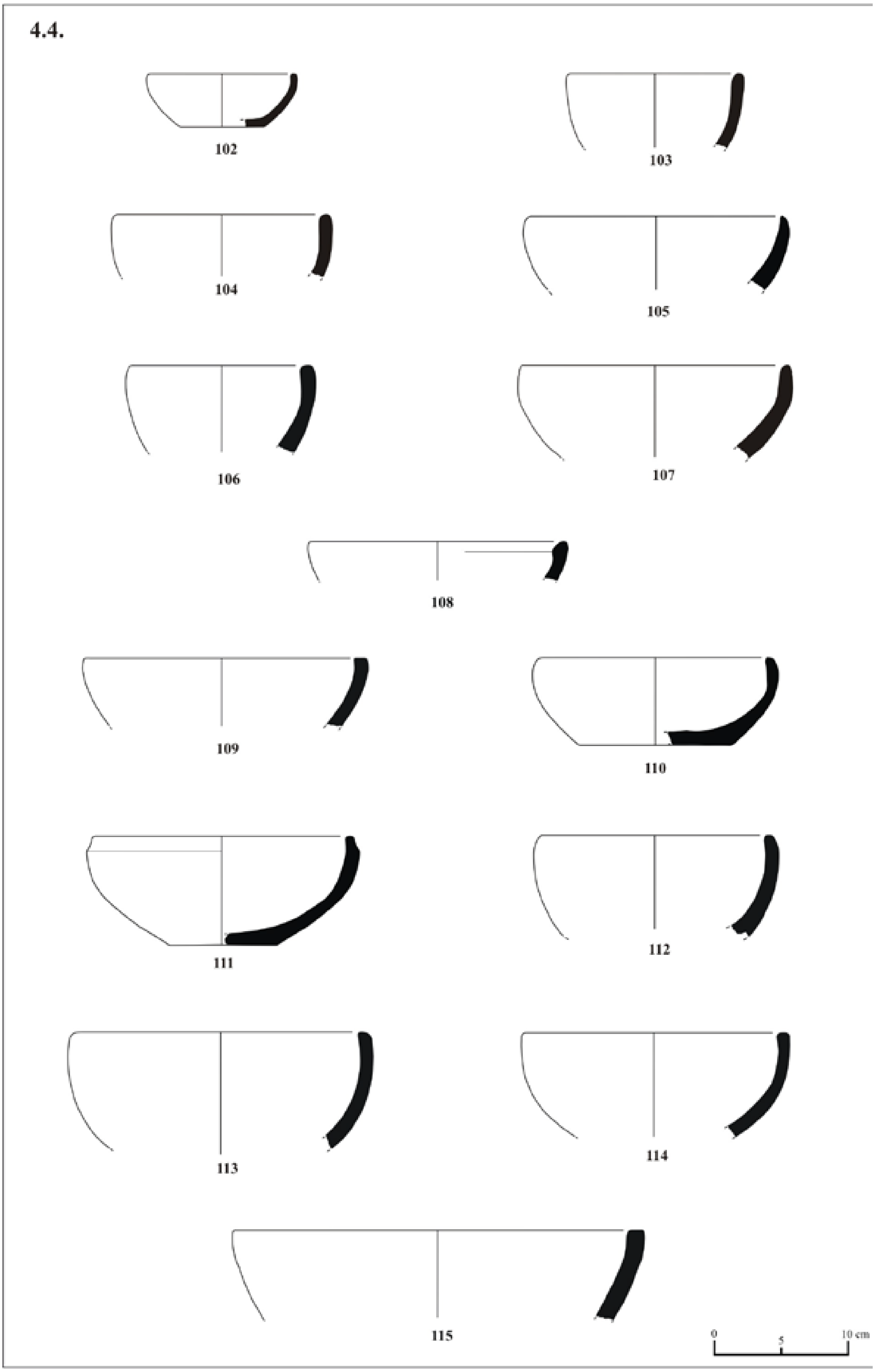
Res. - Fig. 7

Tip/Type

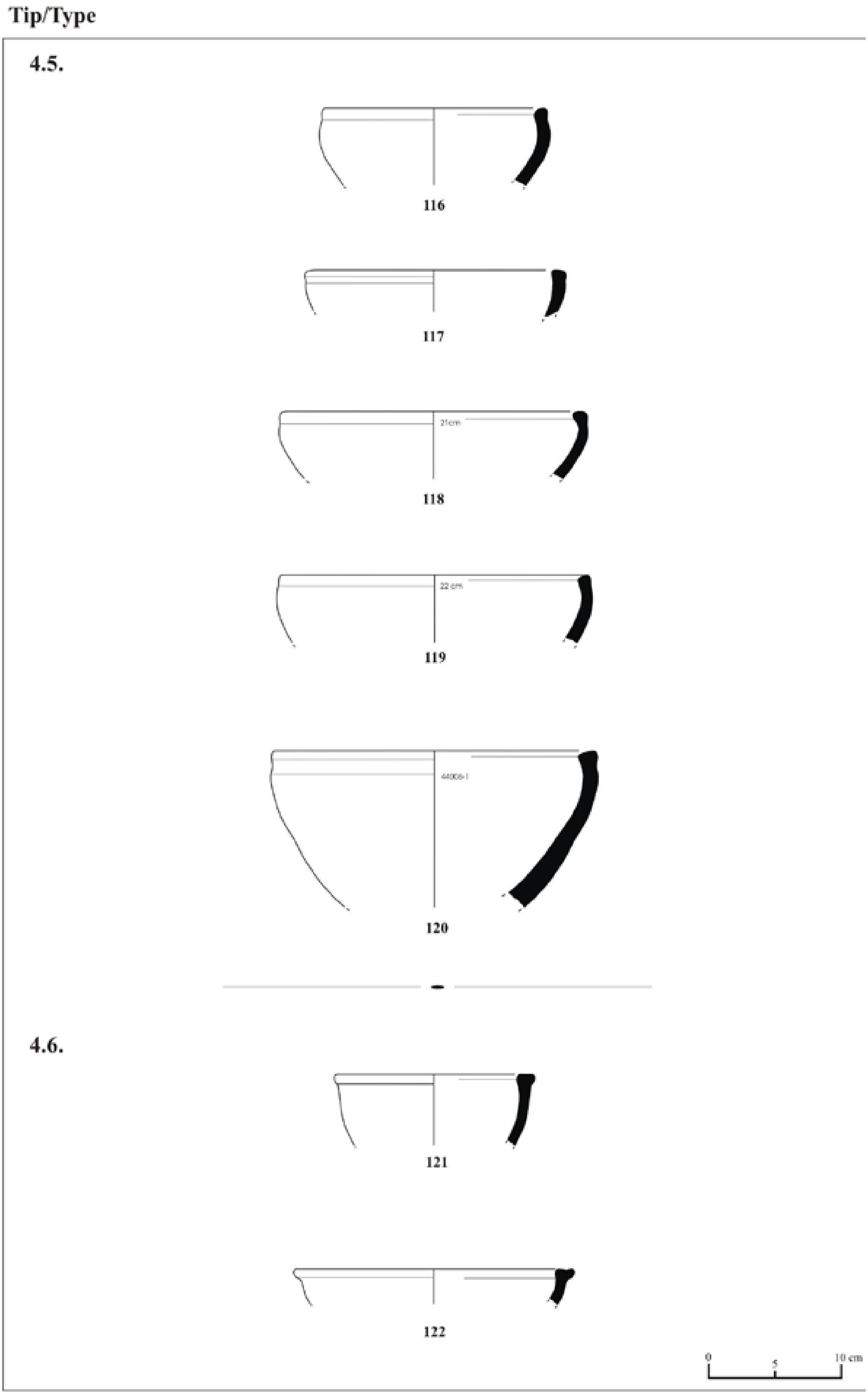


Res. - Fig.8

Tip/Type

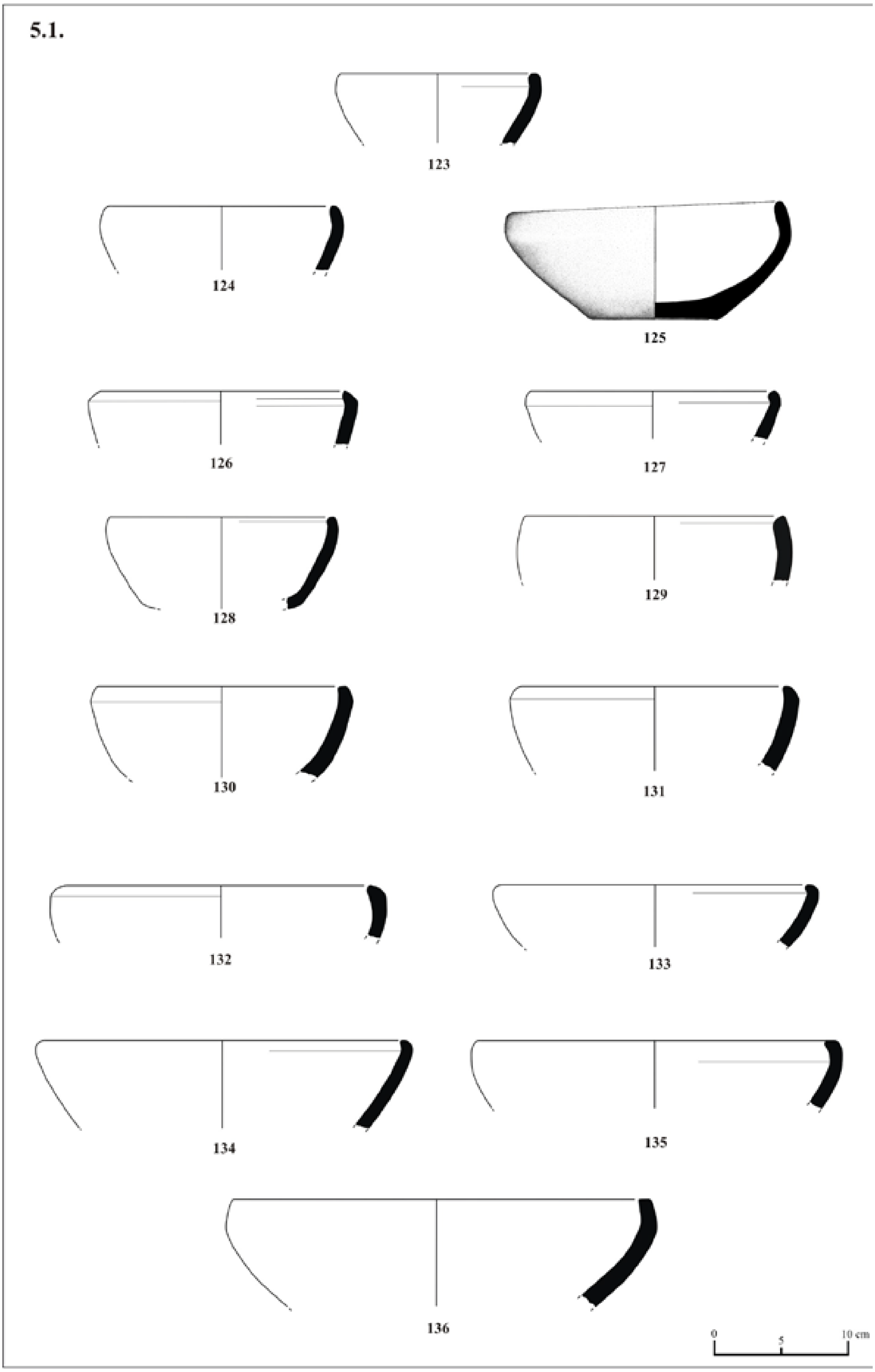


Res. - Fig.9

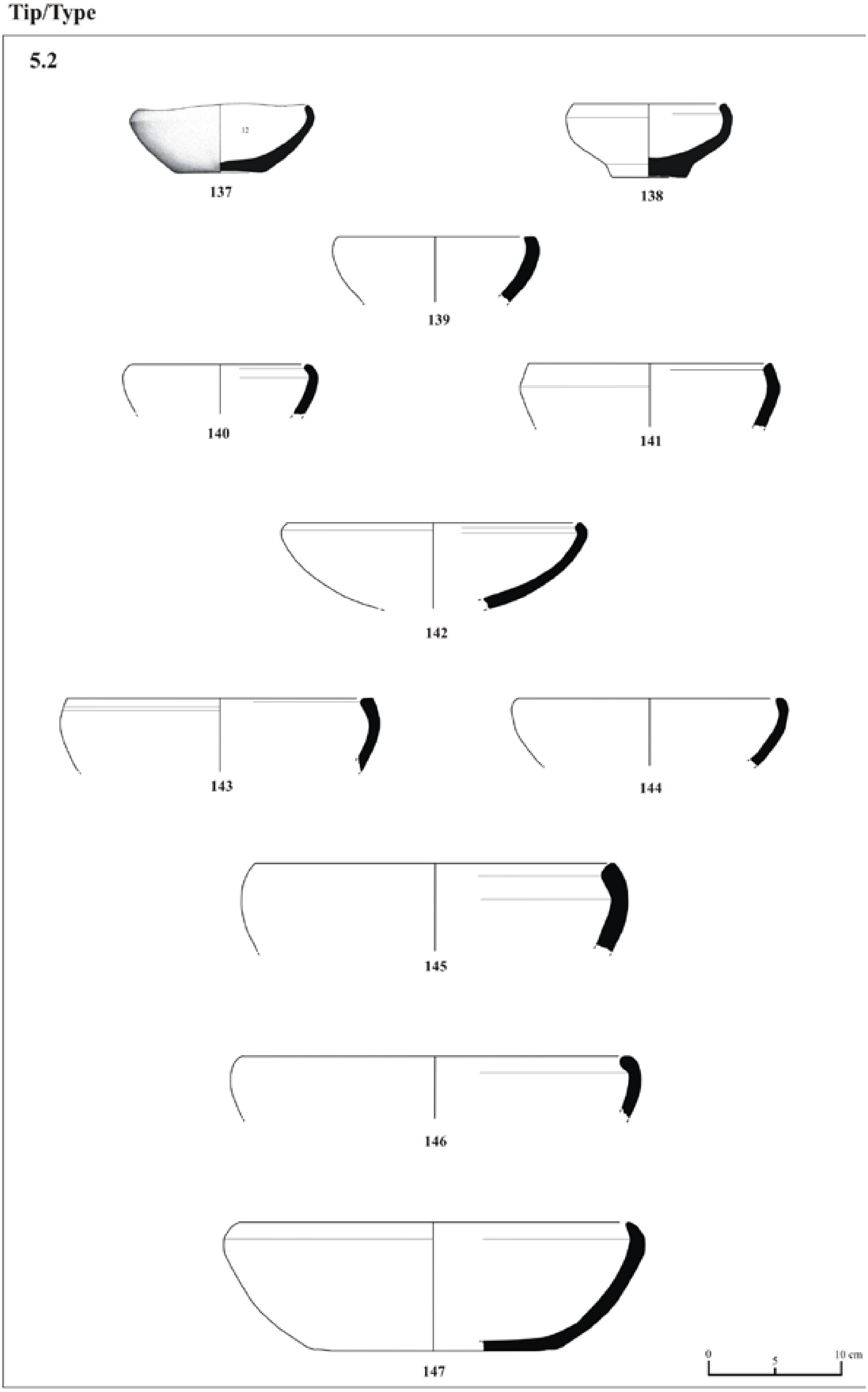

Tip/Type
4.5.
116
117
21cm
118
22 cm
119
44008-1
120
4.6.
121
122
0
5
10 cm

Res. - Fig.10

Tip/Type

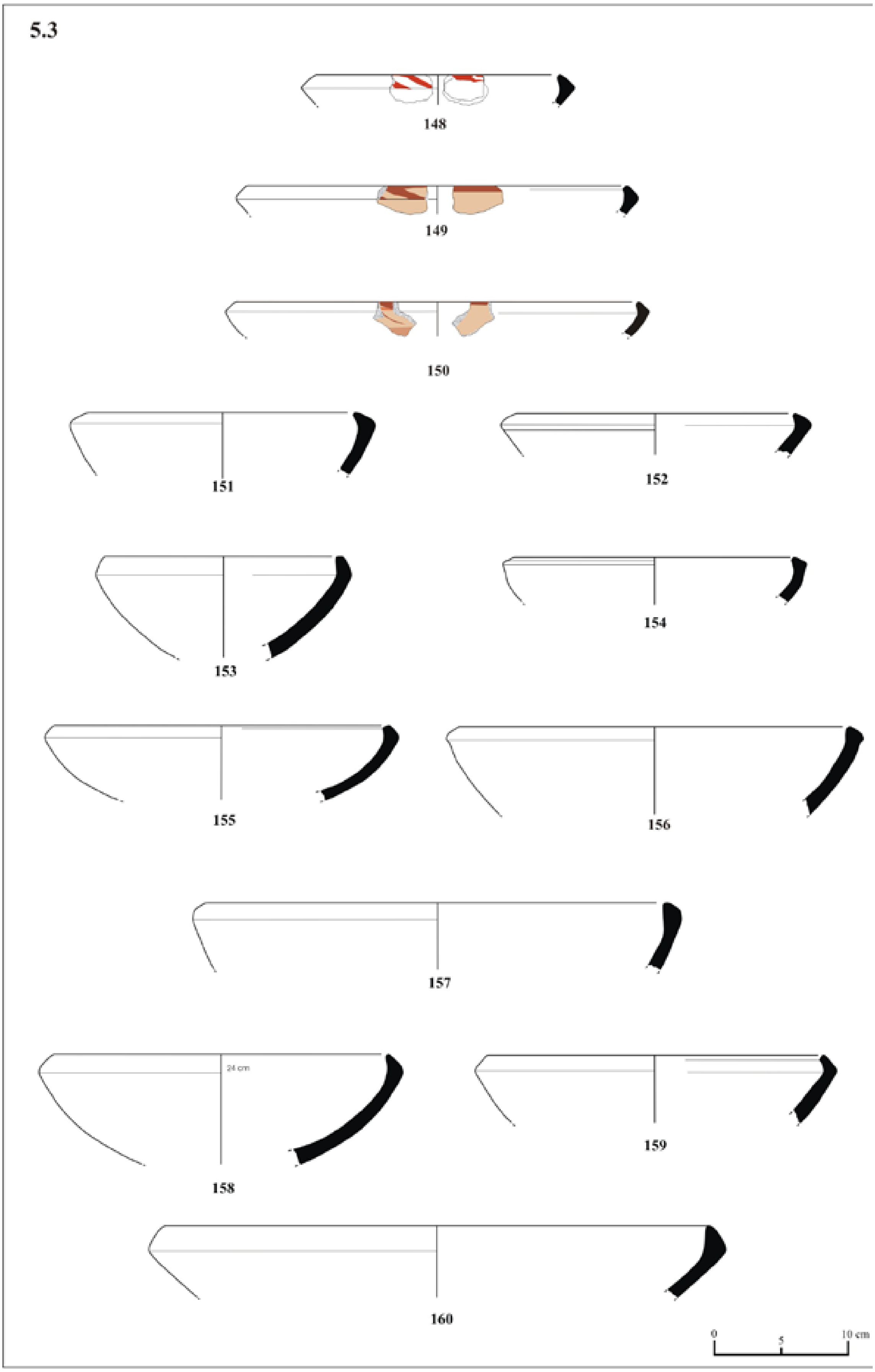


Res. - Fig.11



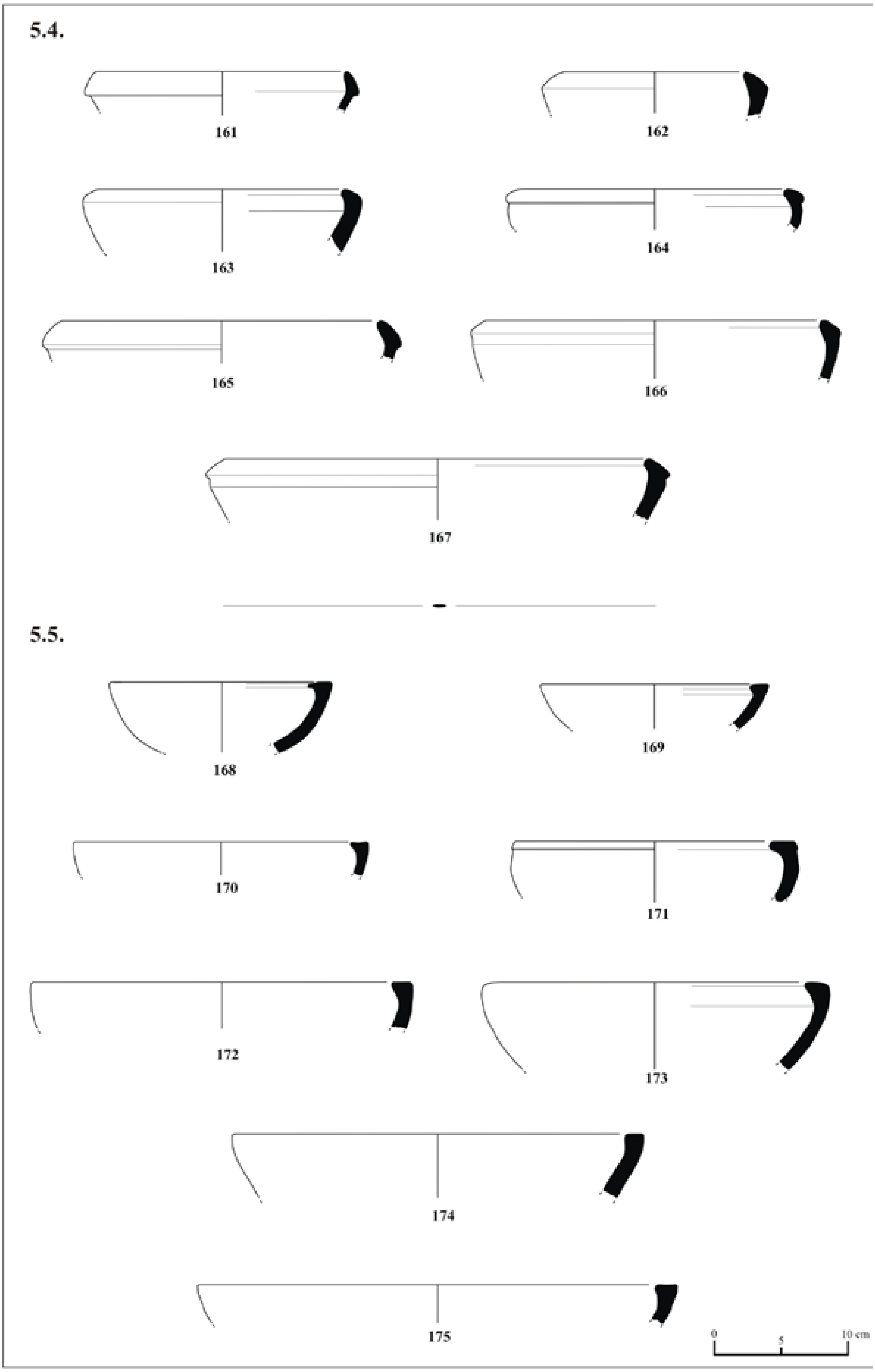
Res. - Fig.12

Tip/Type



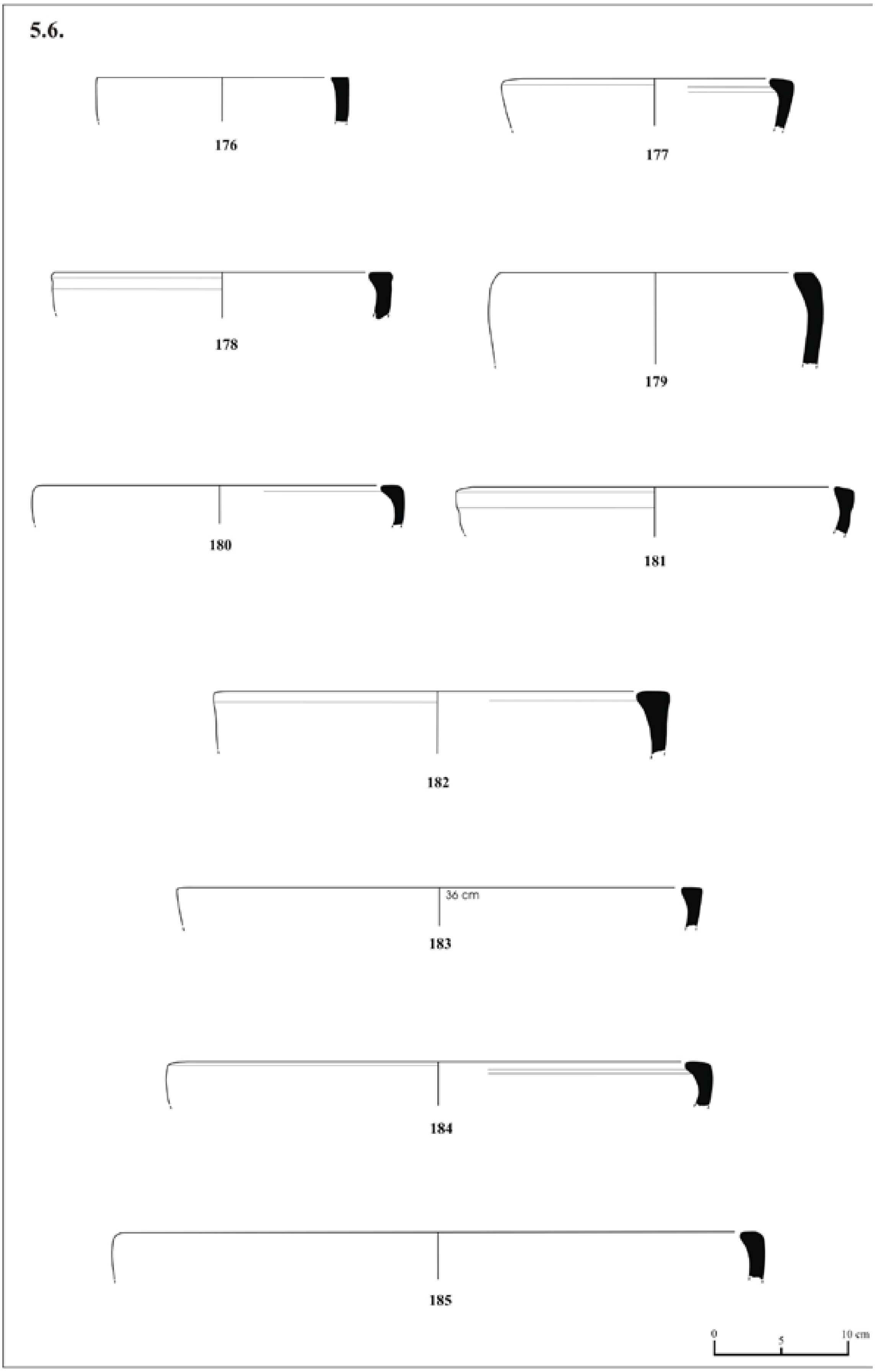
Res. - Fig.13

Tip/Type



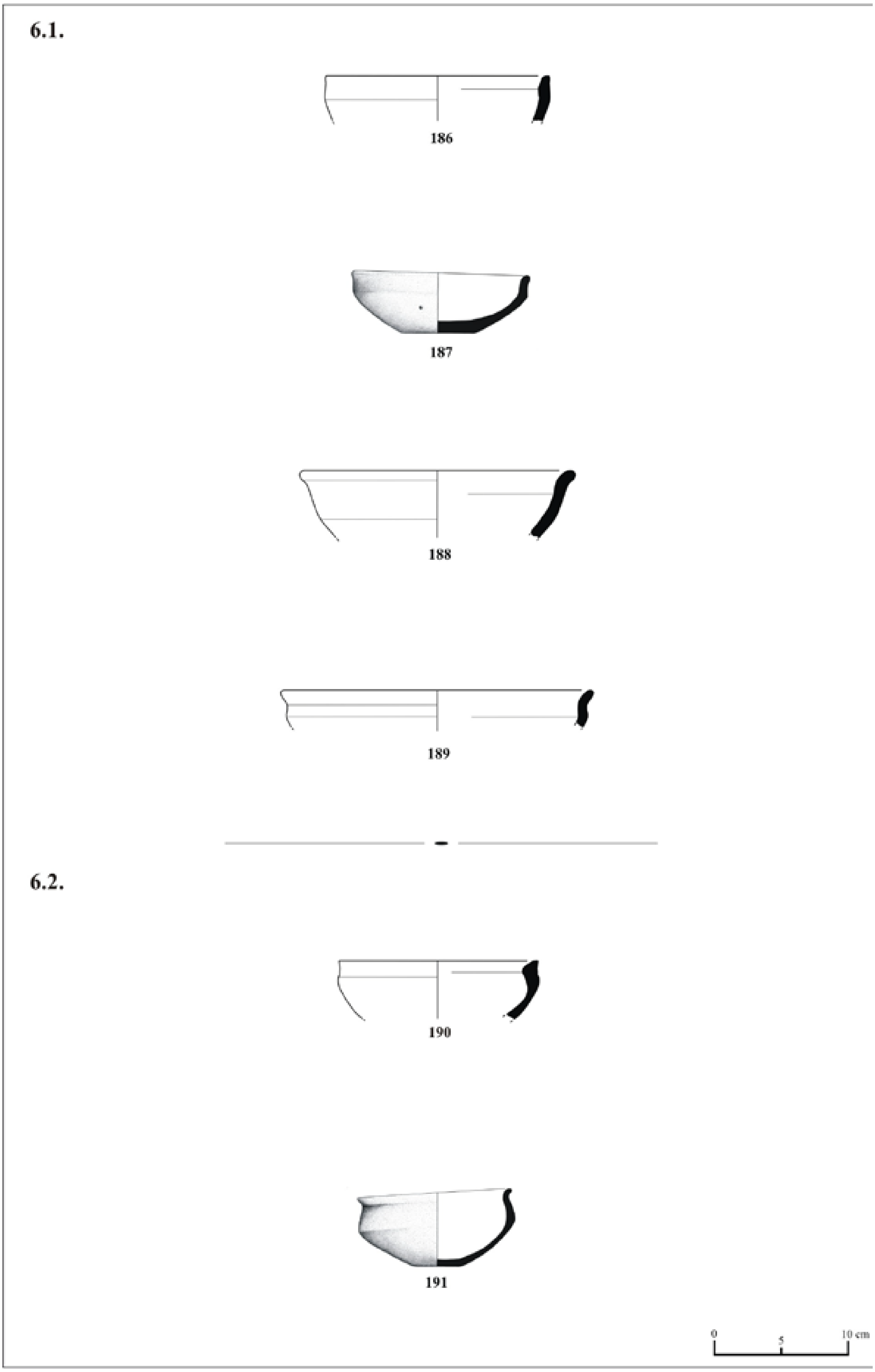
Res. - Fig.14

Tip/Type



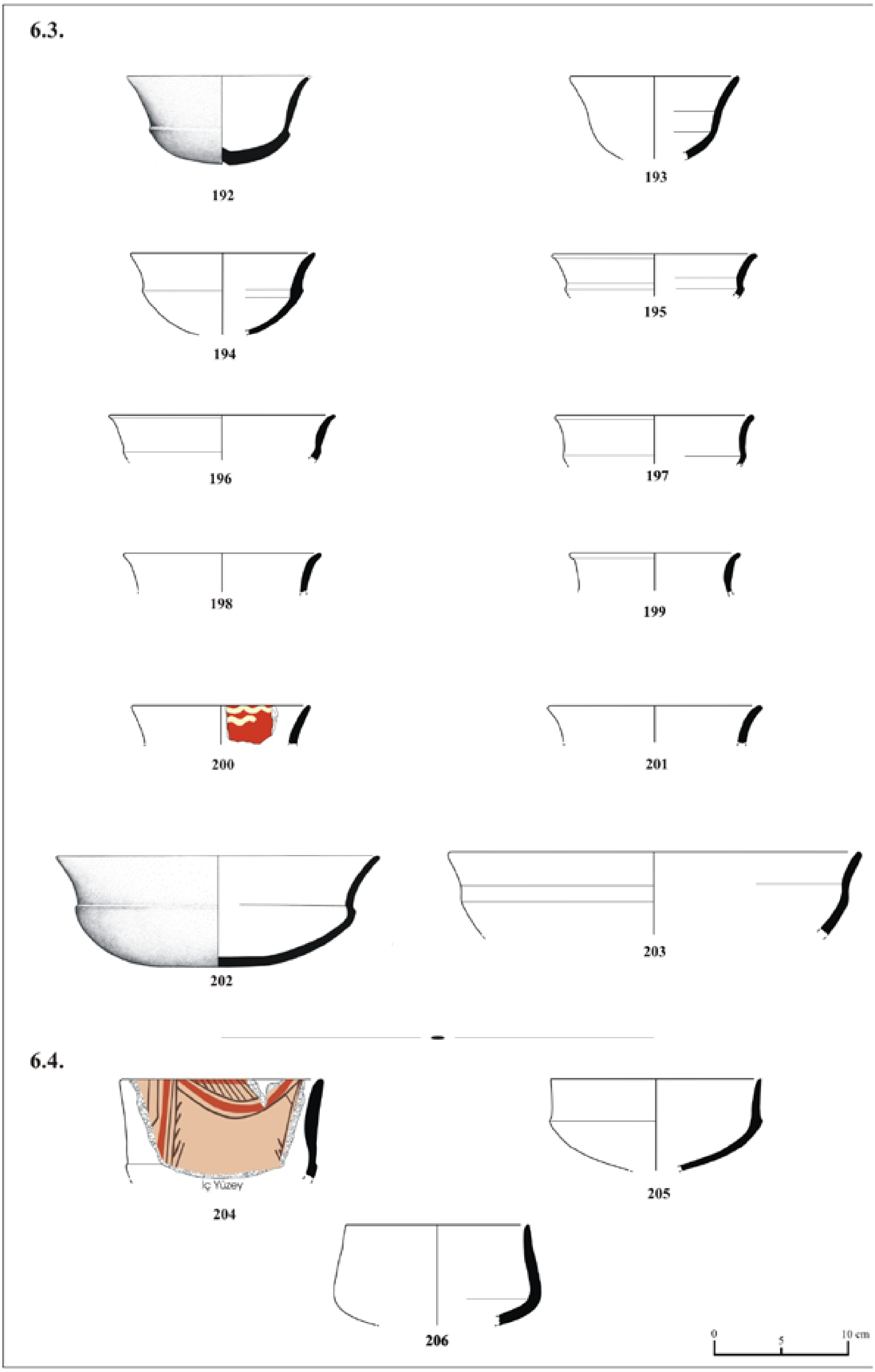
Res. - Fig.15

Tip/Type



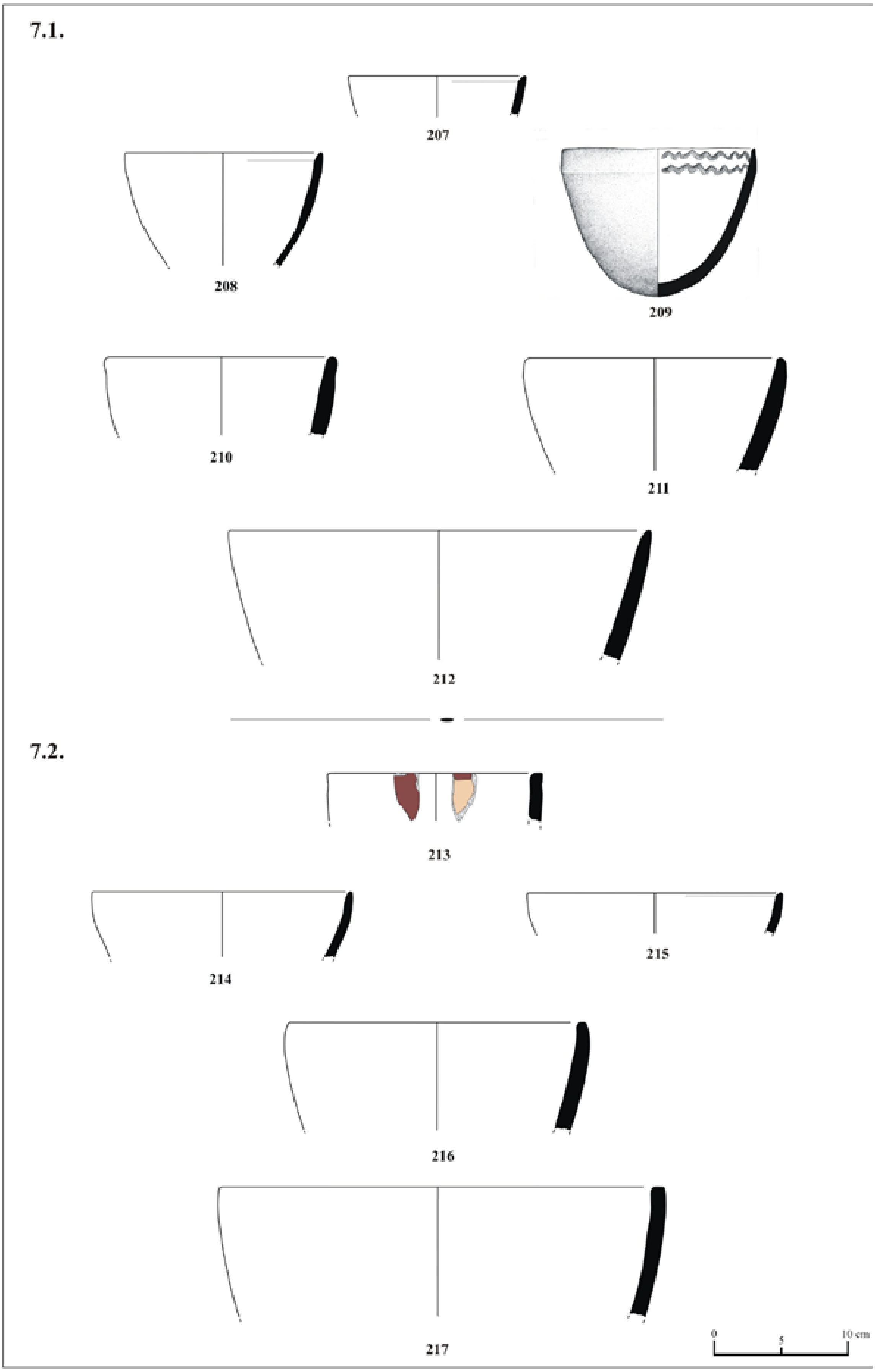
Res. - Fig.16

Tip/Type



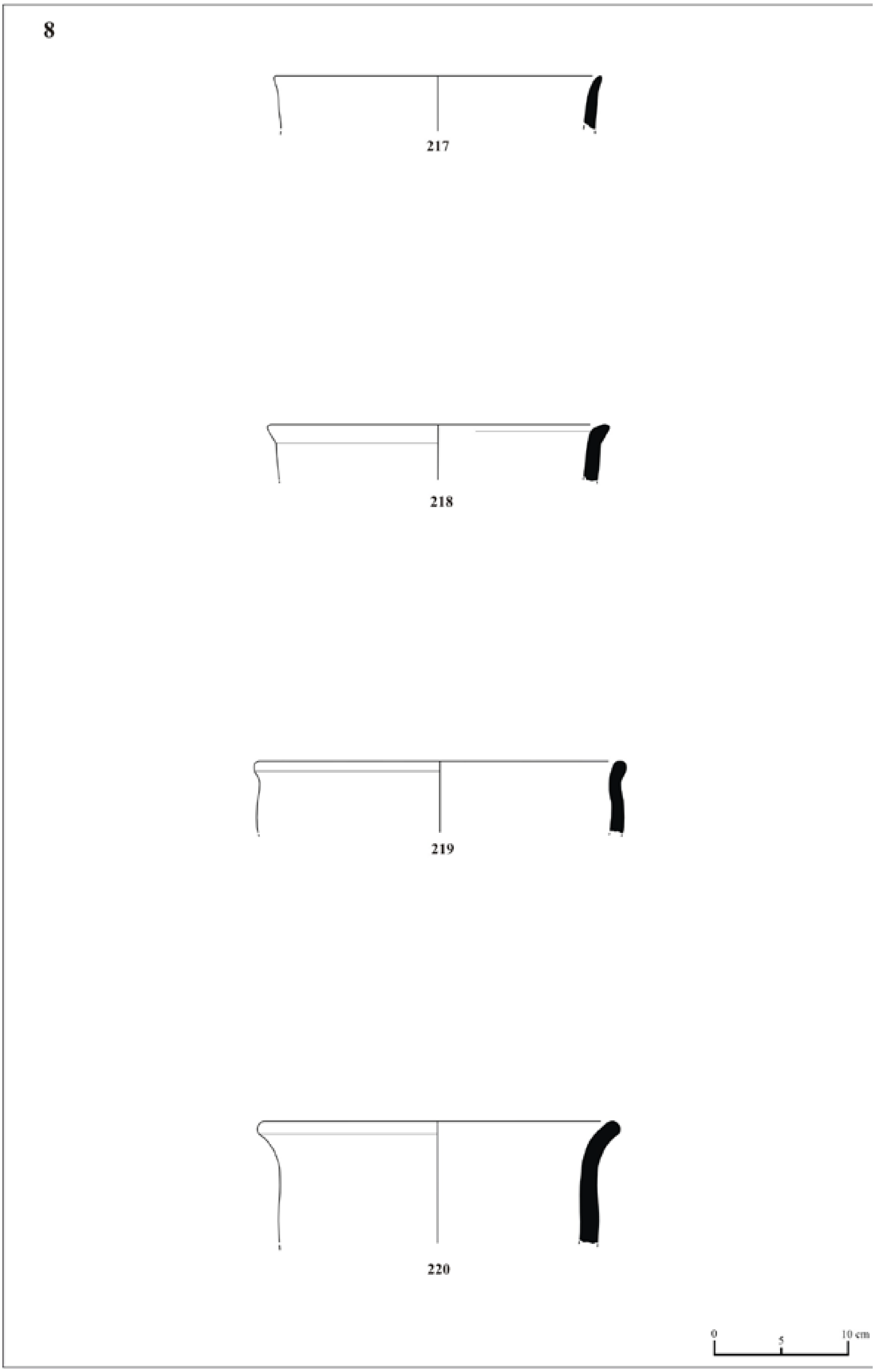
Res. - Fig.17

Tip/Type



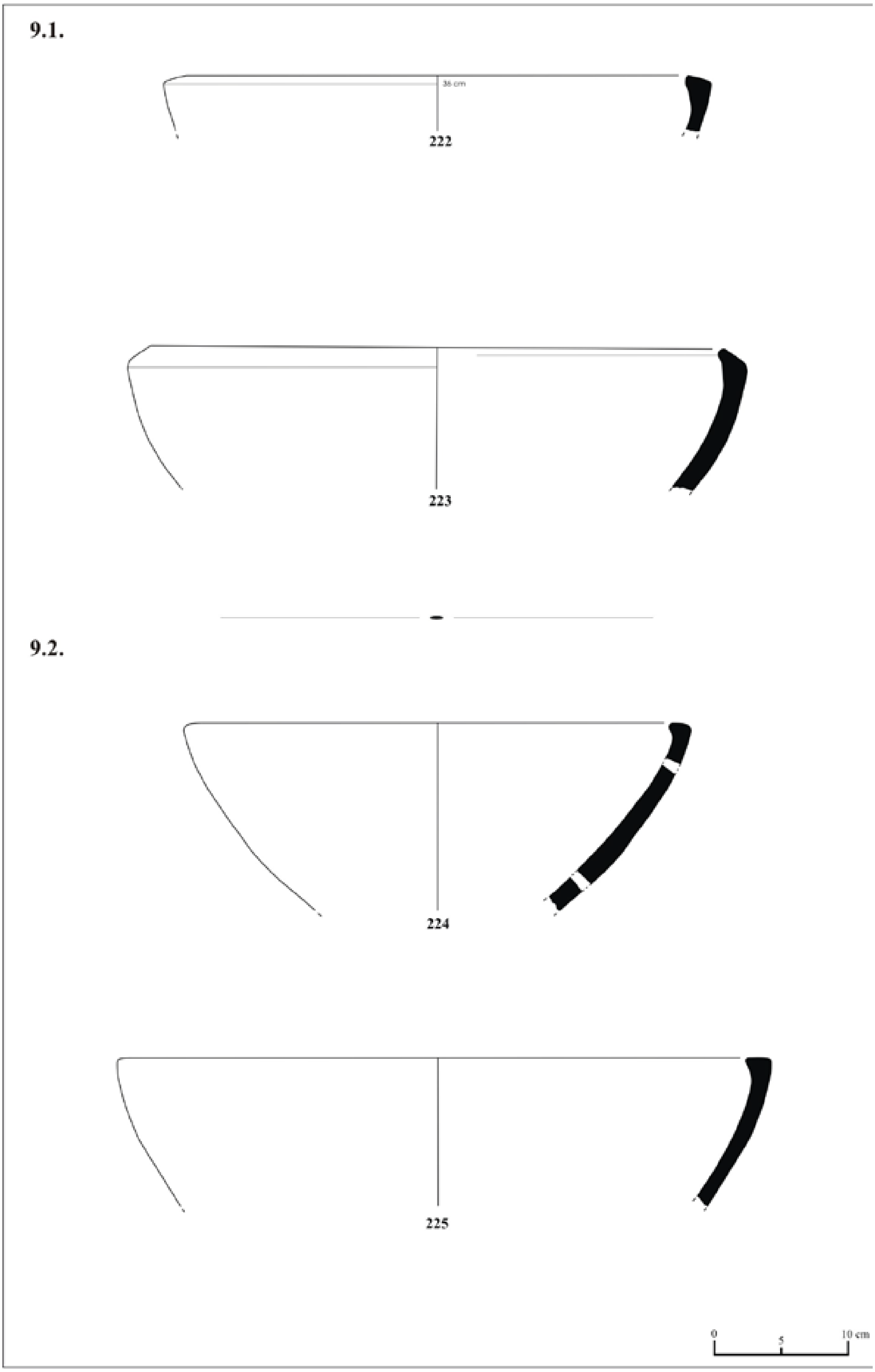
Res. - Fig.18

Tip/Type



Res. - Fig.19

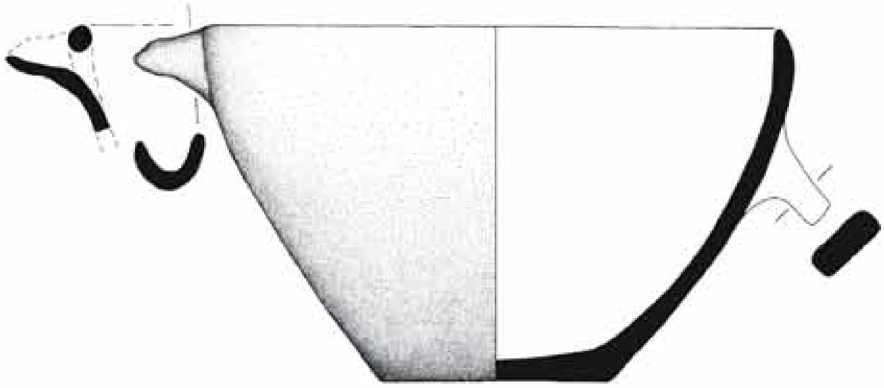
Tip/Type



Res. - Fig.20

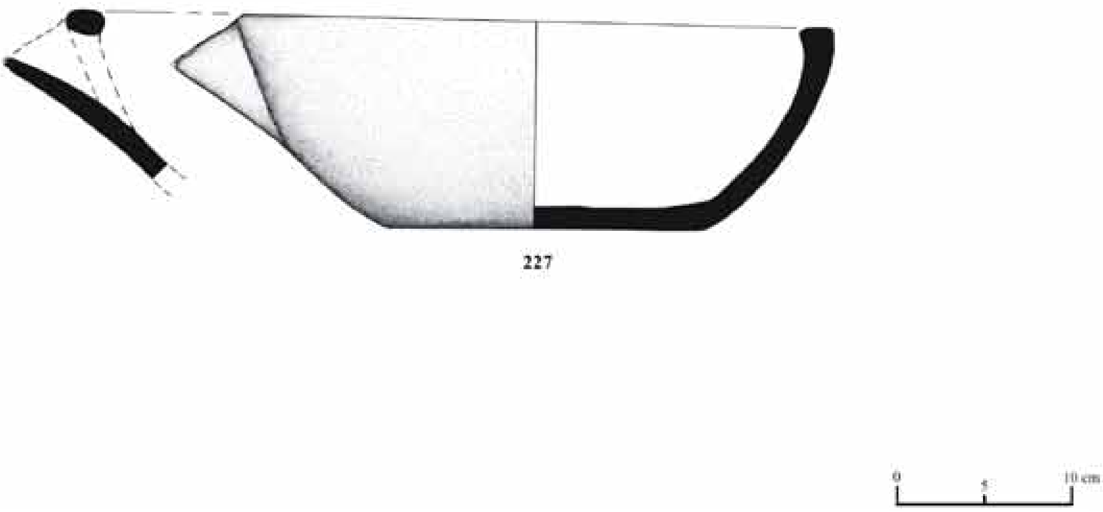
Tip/Type

10.1.



226

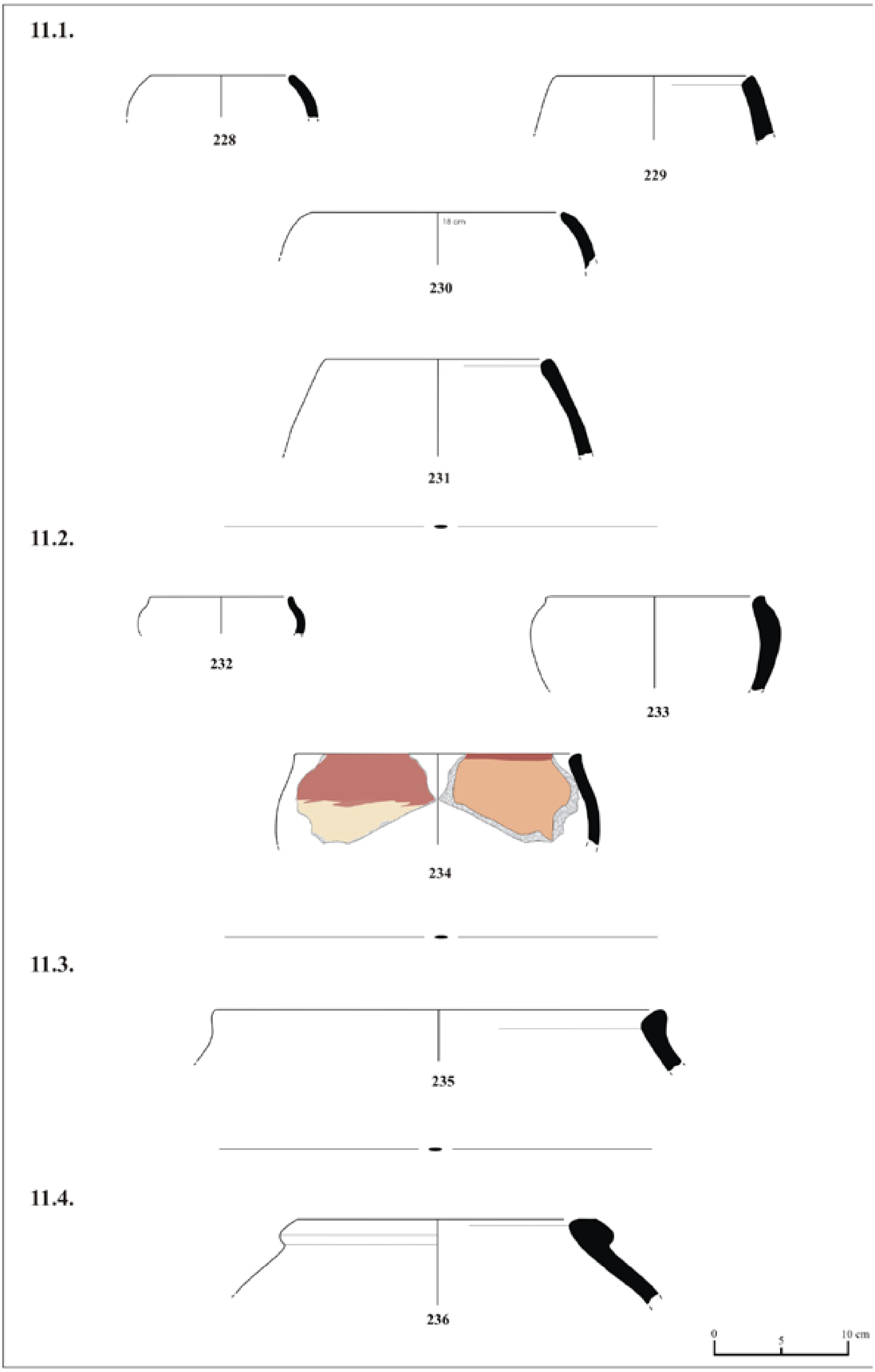
10.2.



227

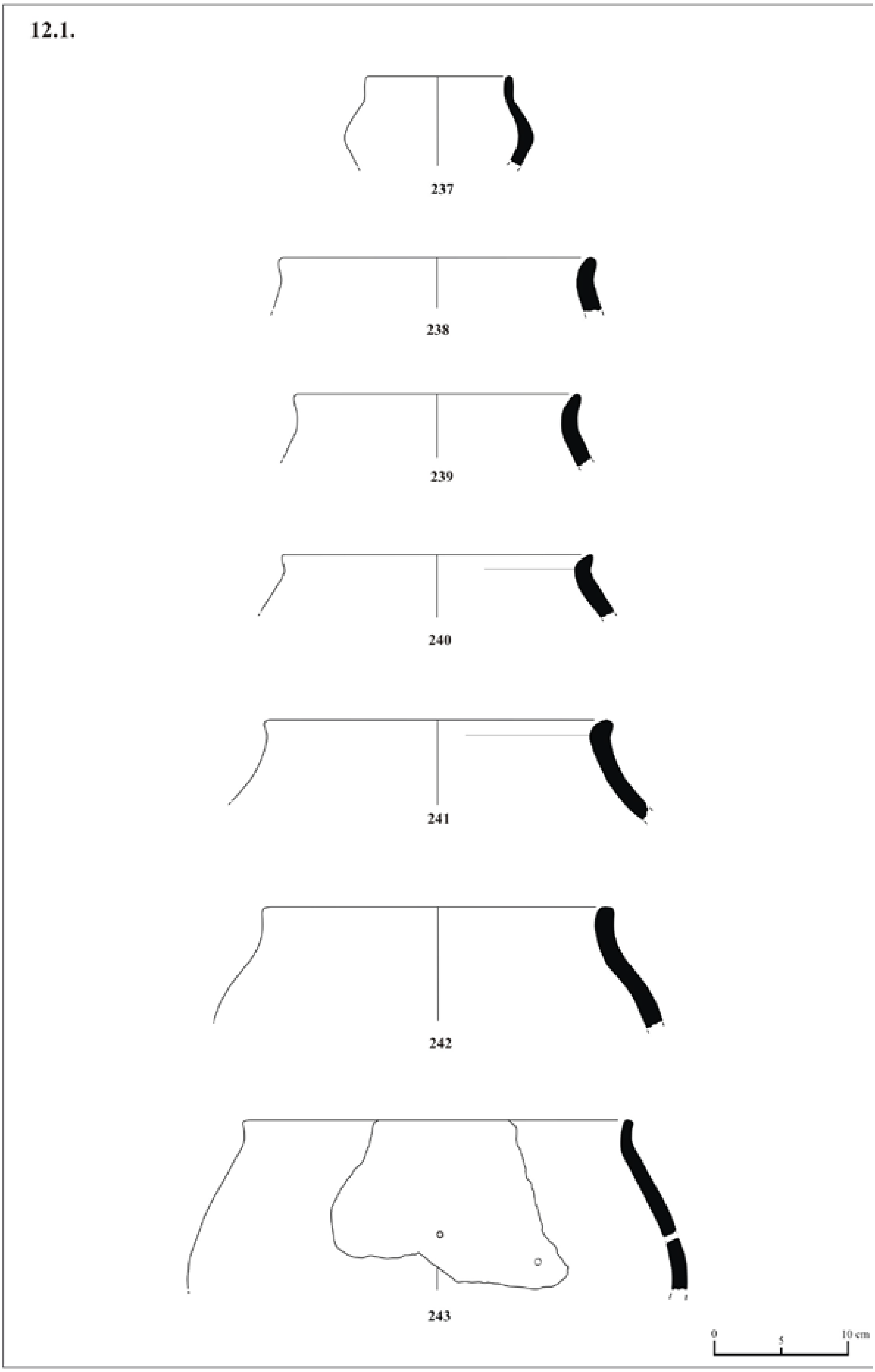
Res. - Fig.21

Tip/Type



Res. - Fig.22

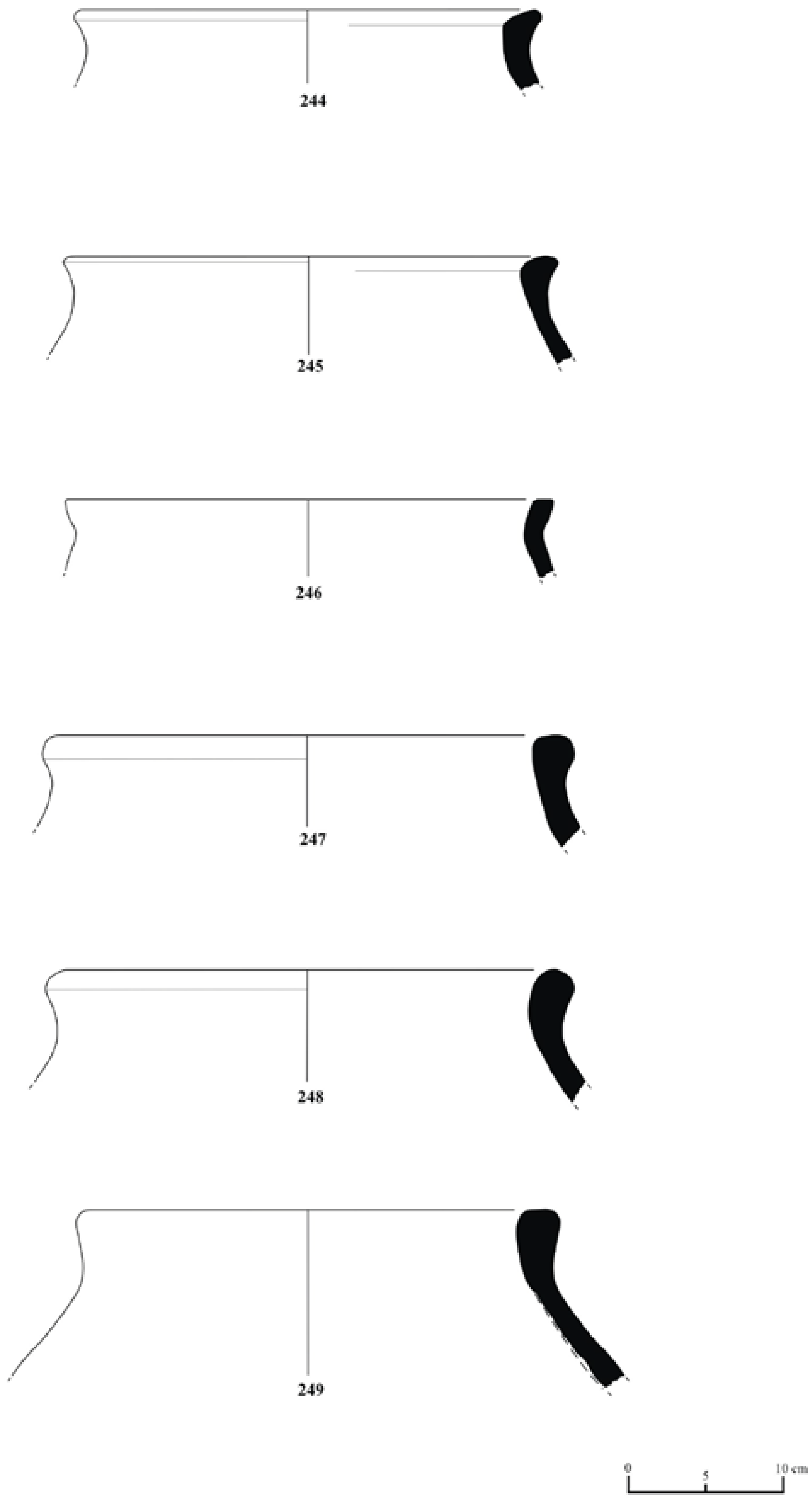
Tip/Type



Res. - Fig.23

Tip/Type

12.2.



244

245

246

247

248

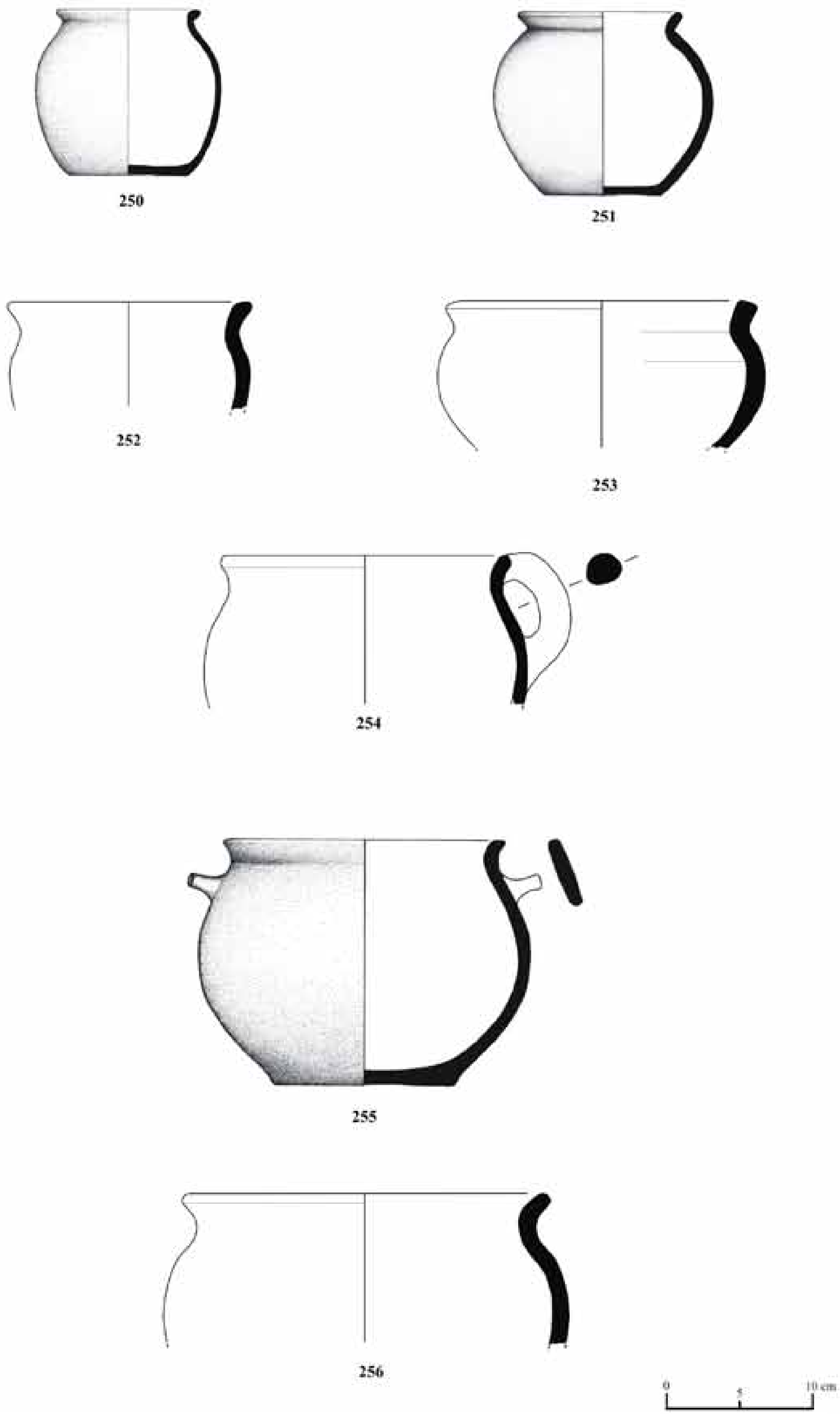
249

0 5 10 cm

Res. - Fig.24

Tip/Type

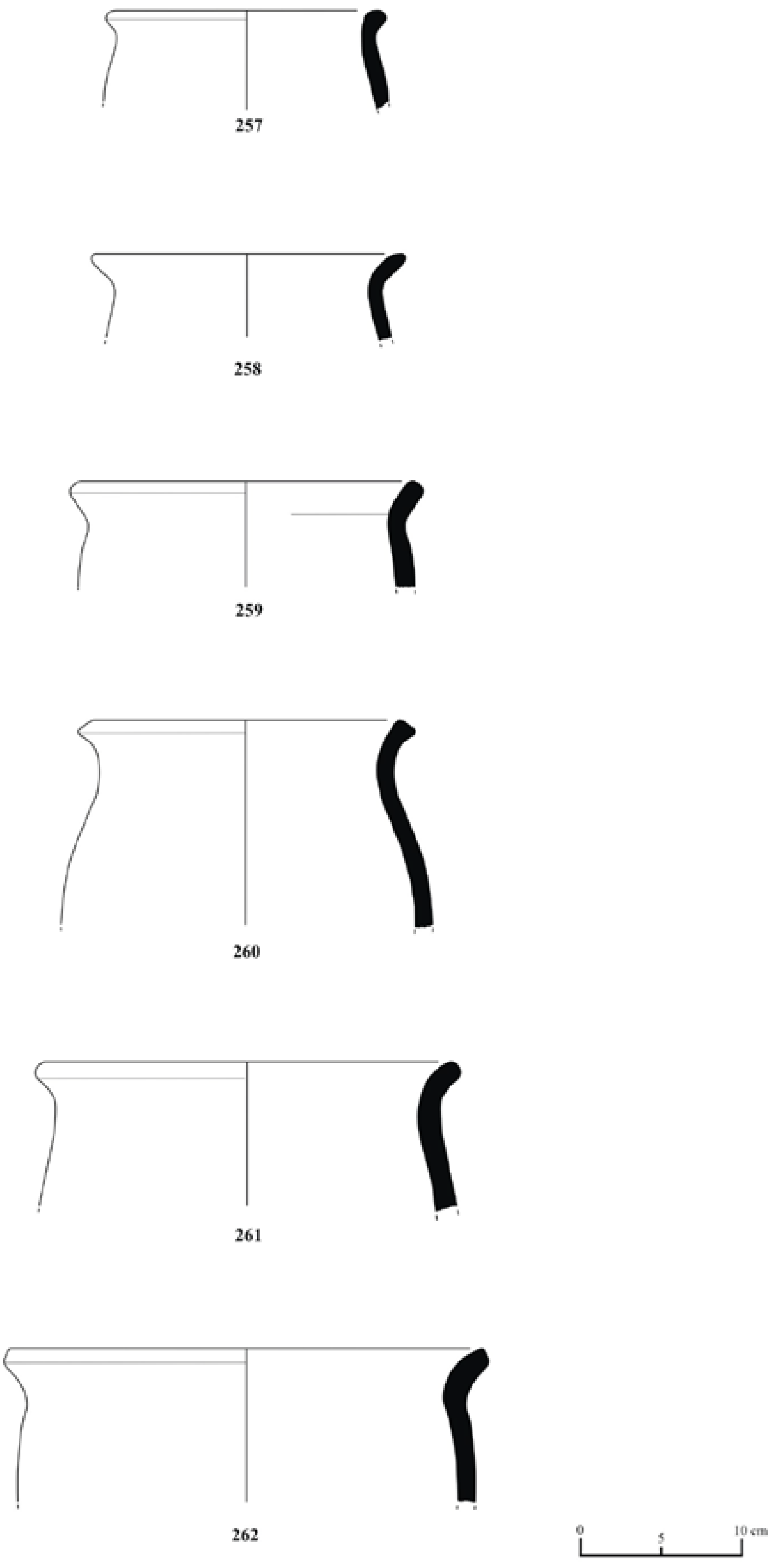
12.3.



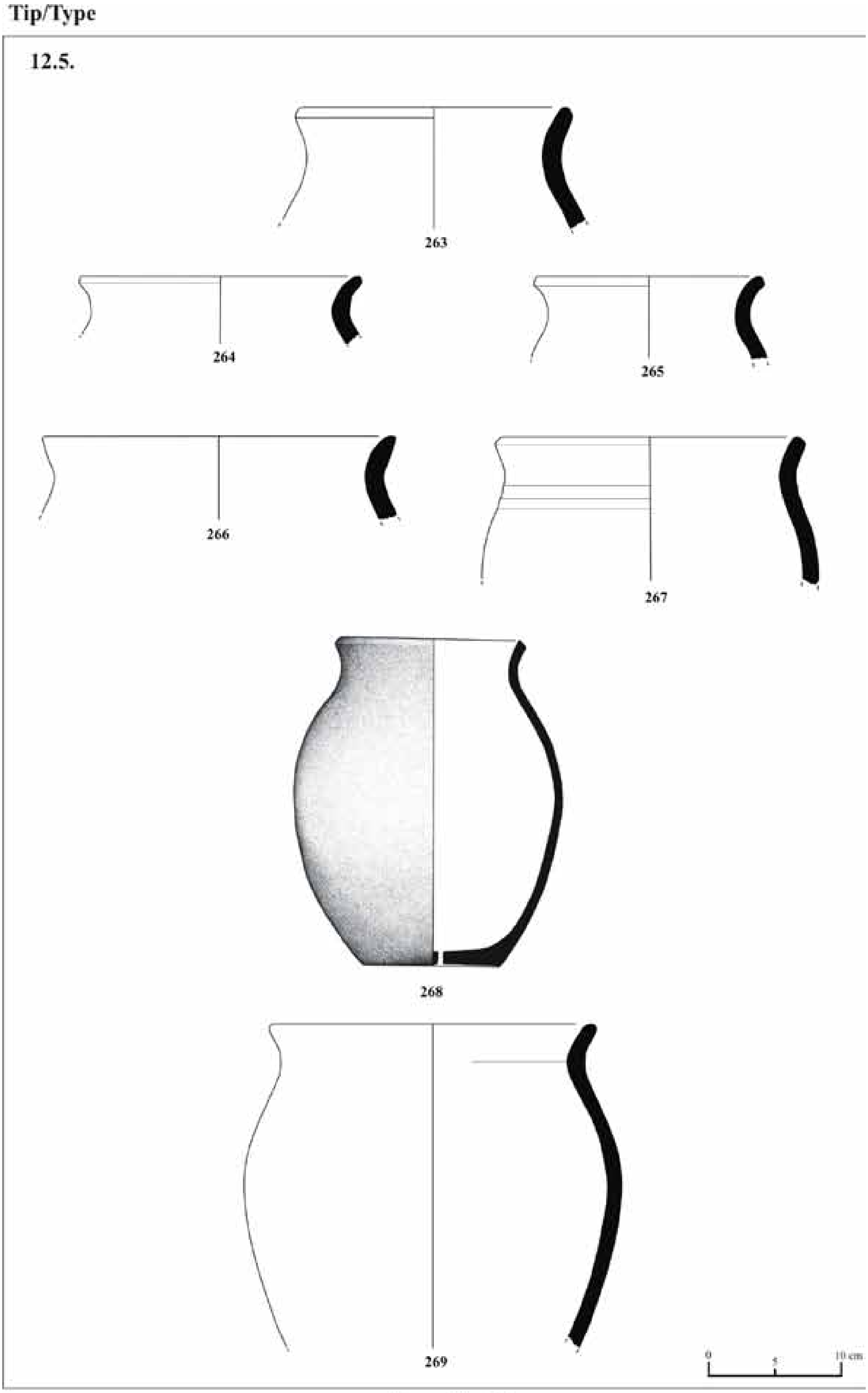
Res. - Fig.25

Tip/Type

12.4.

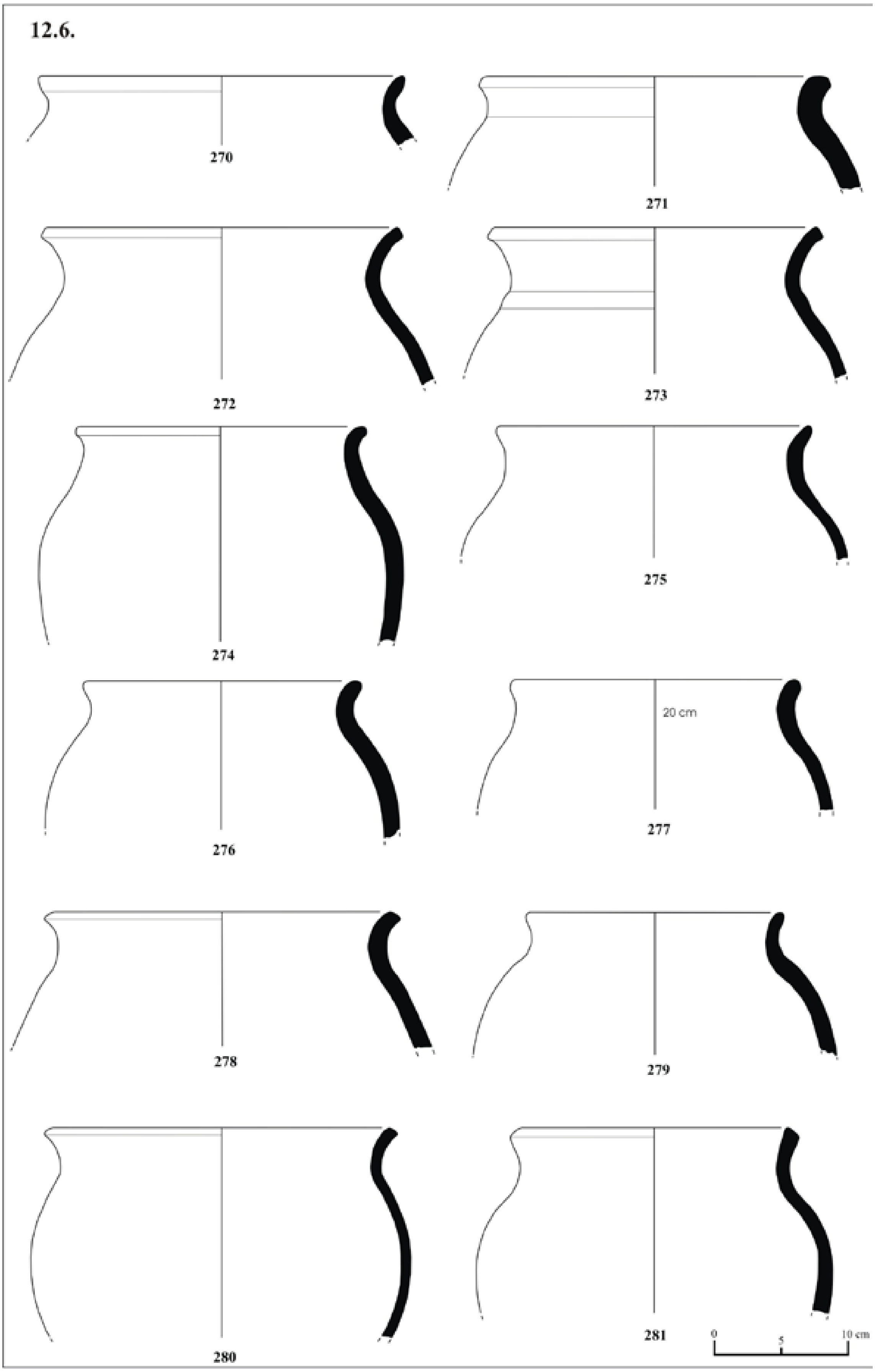


Res. - Fig.26



Res. - Fig.27

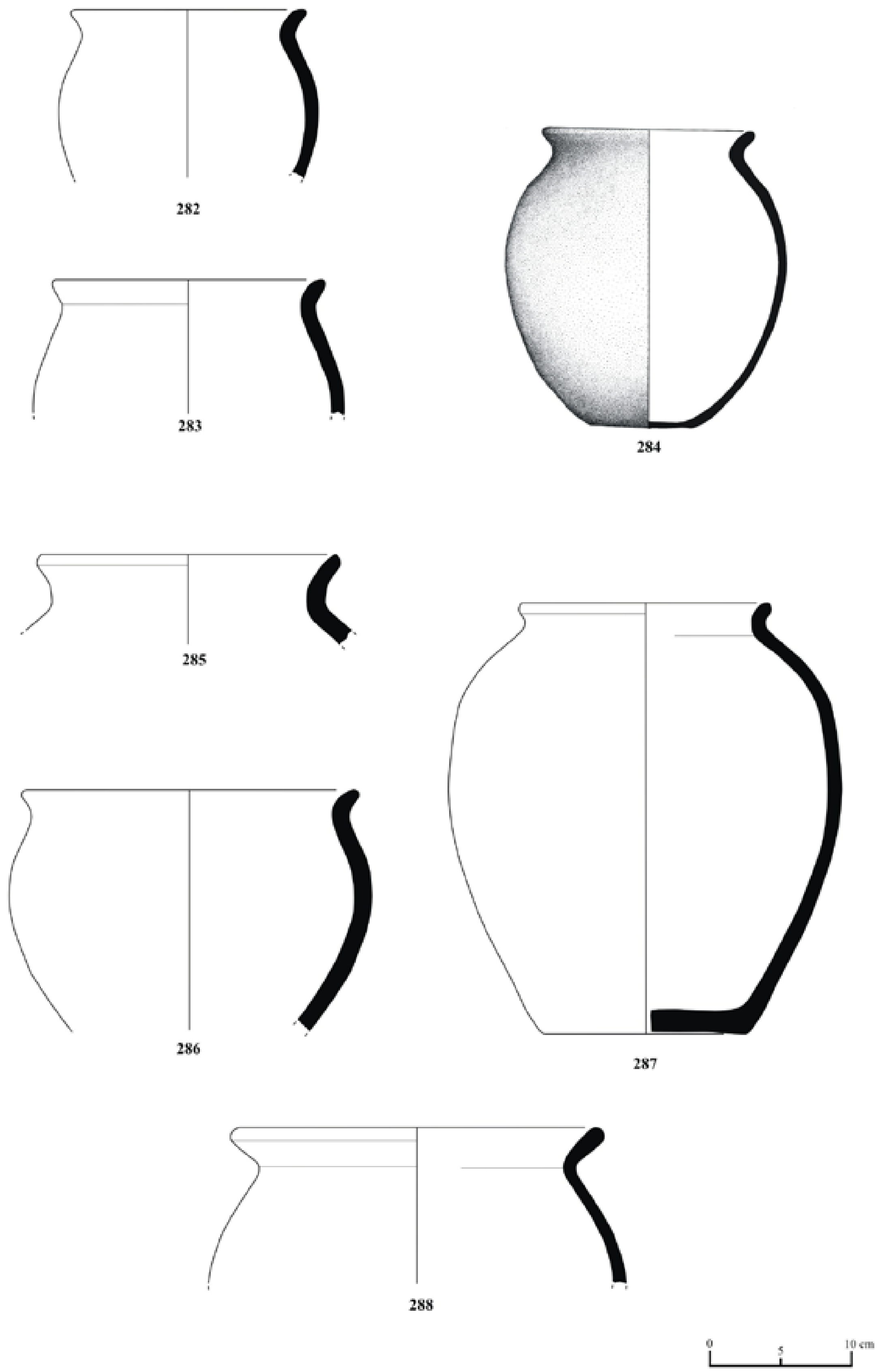
Tip/Type



Res. - Fig.28

Tip/Type

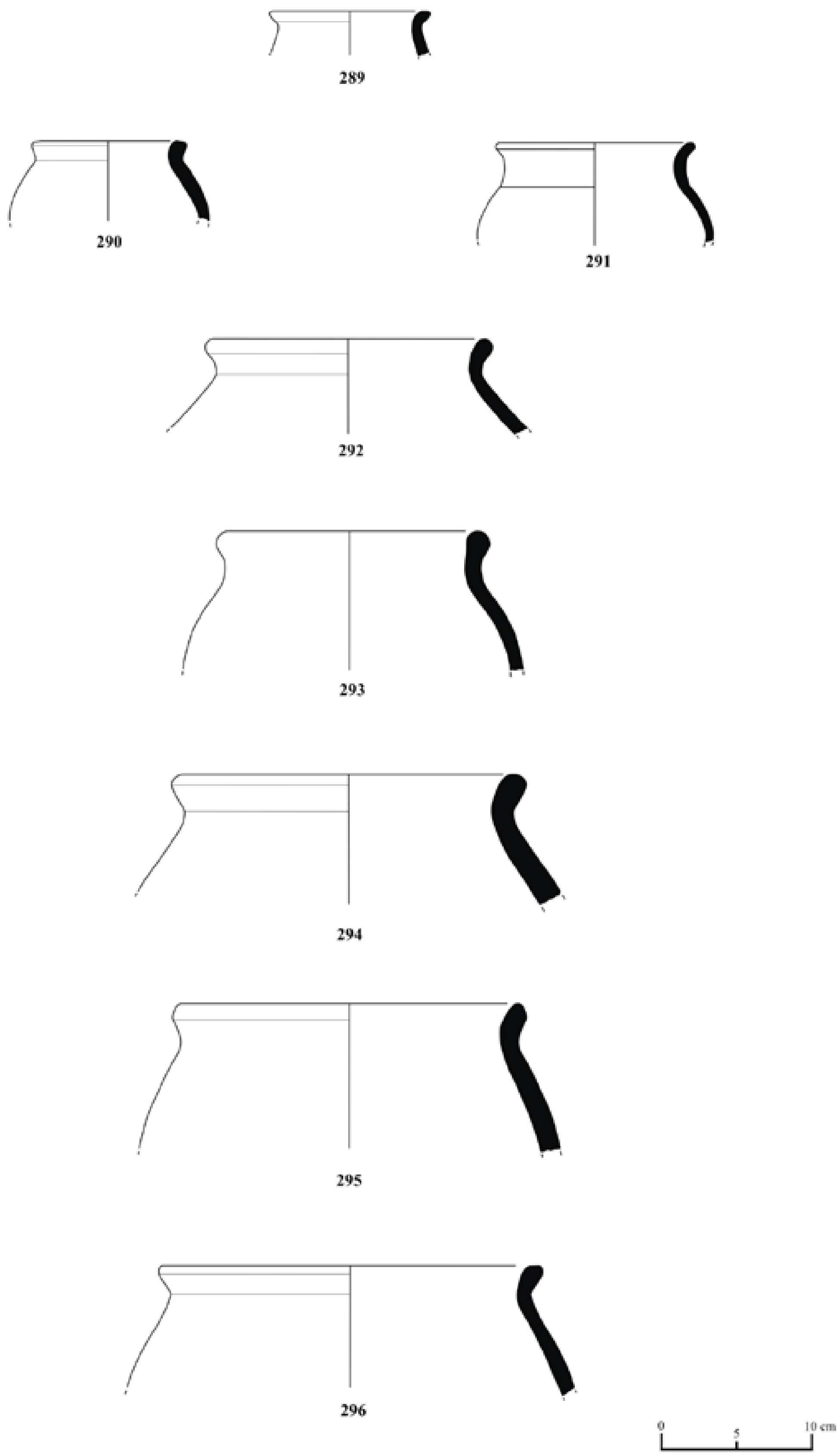
12.7.



Res. - Fig.29

Tip/Type

12.8.

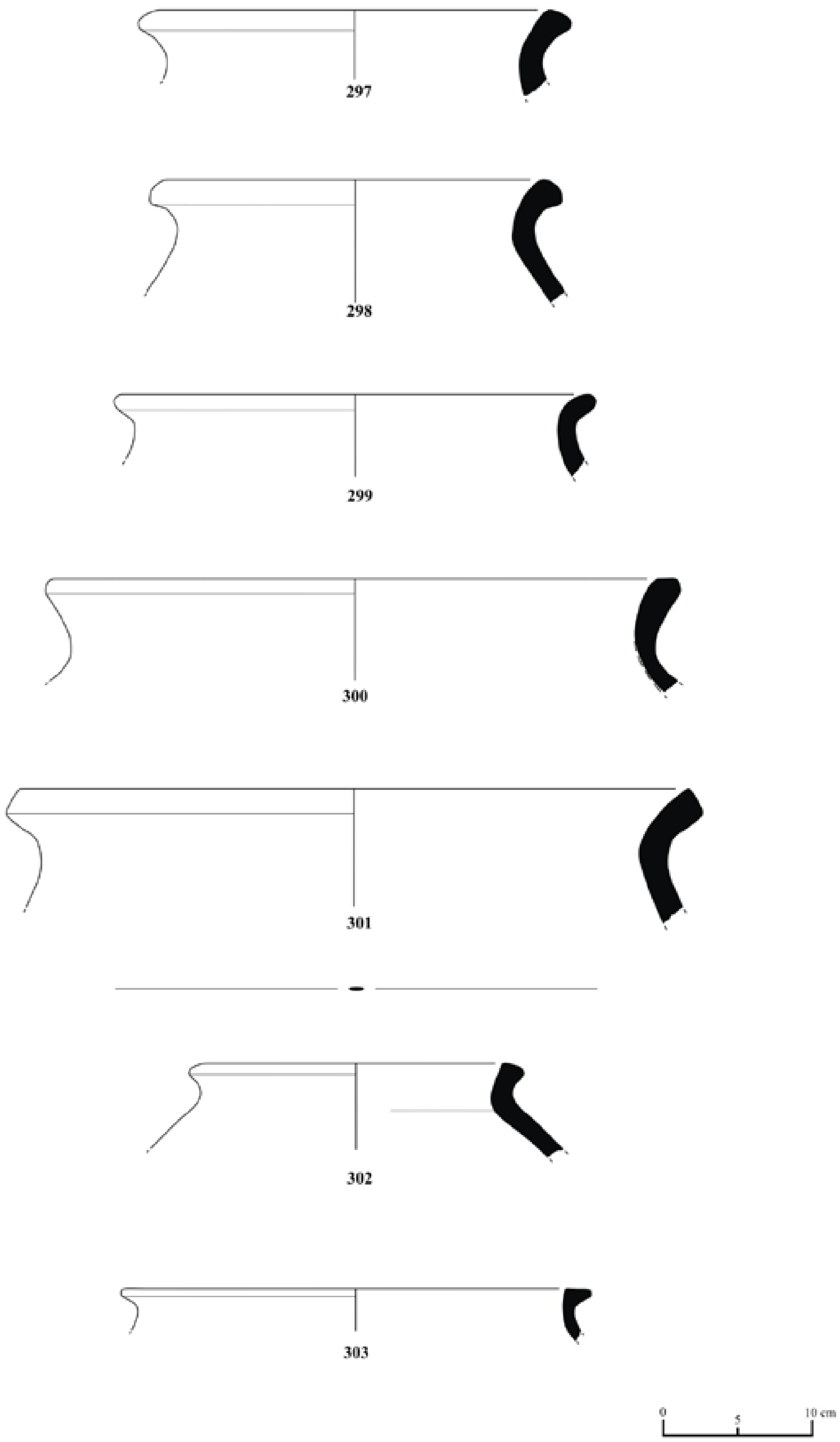


Res. - Fig.30

Tip/Type

12.8.

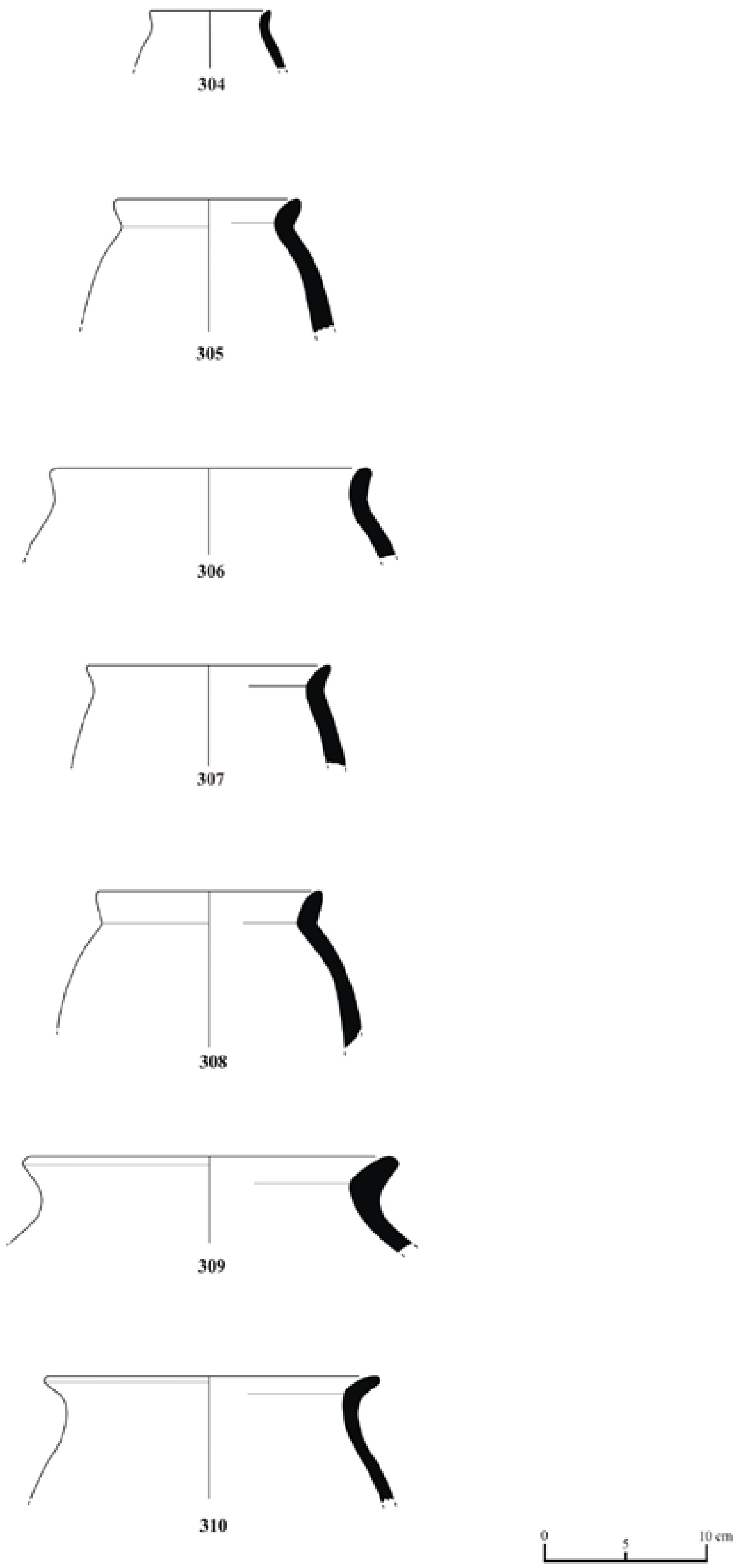
12.9.



Res. - Fig.31

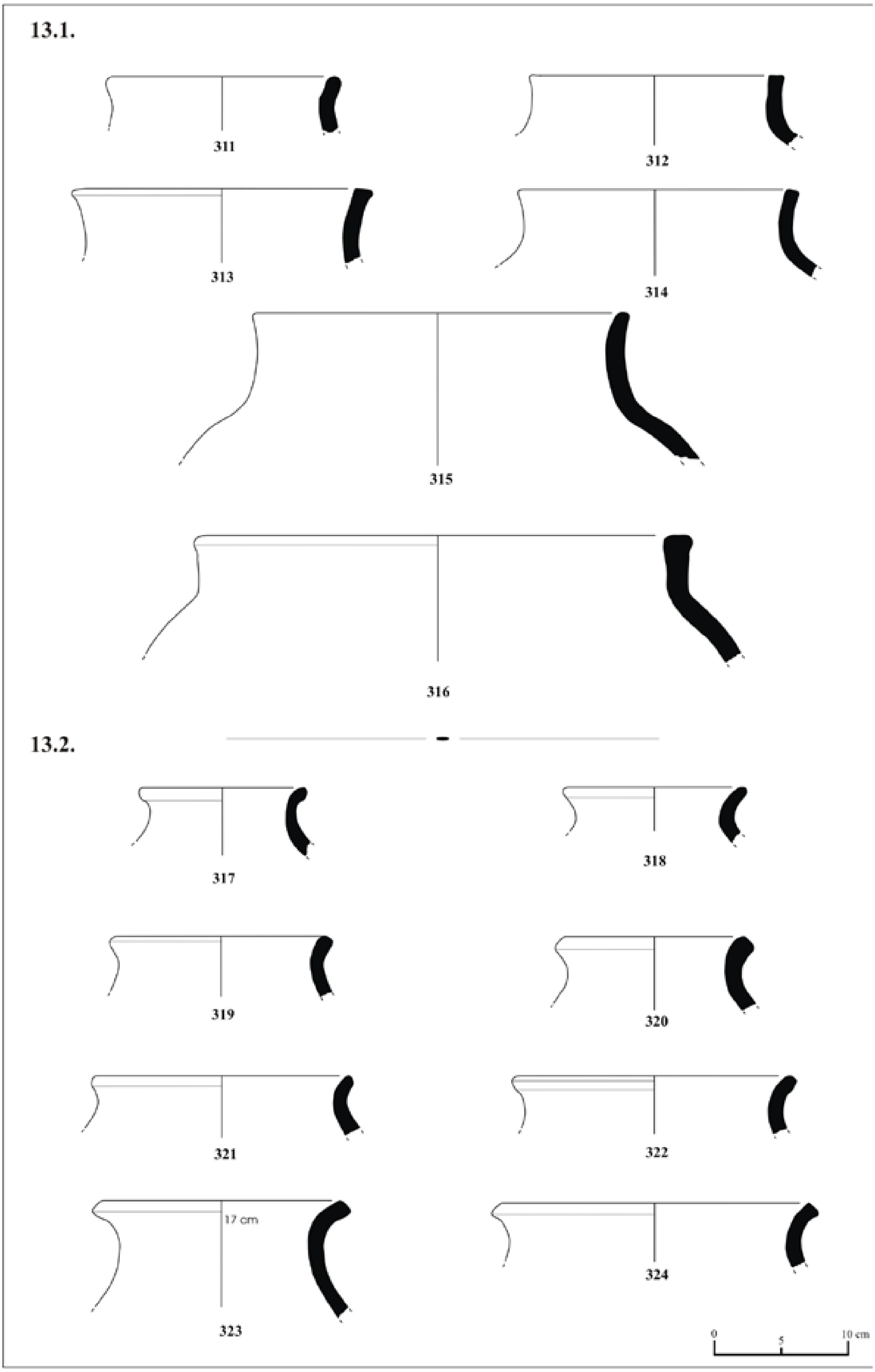
Tip/Type

12.10



Res. - Fig.32

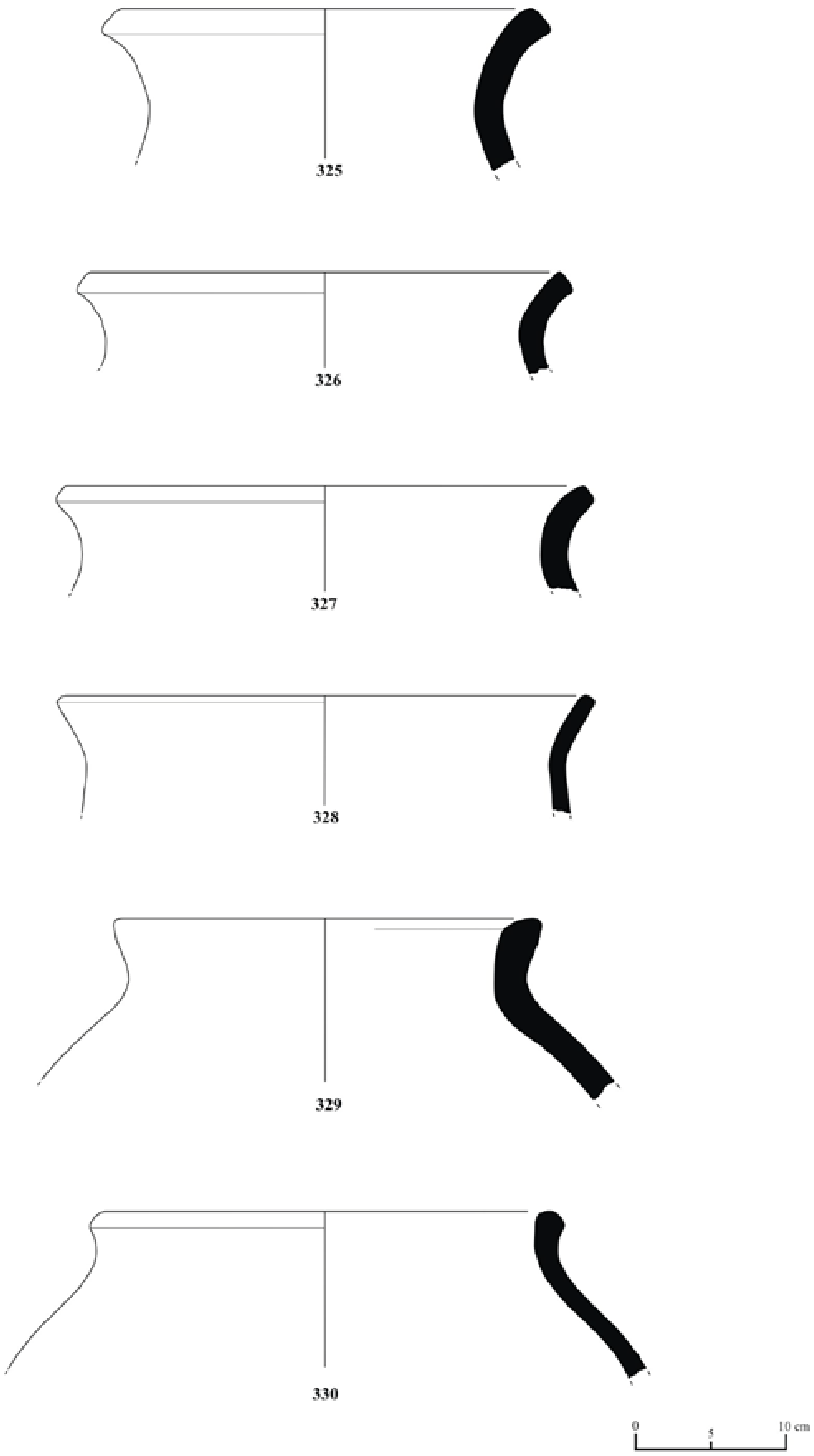
Tip/Type



Res. - Fig.33

Tip/Type

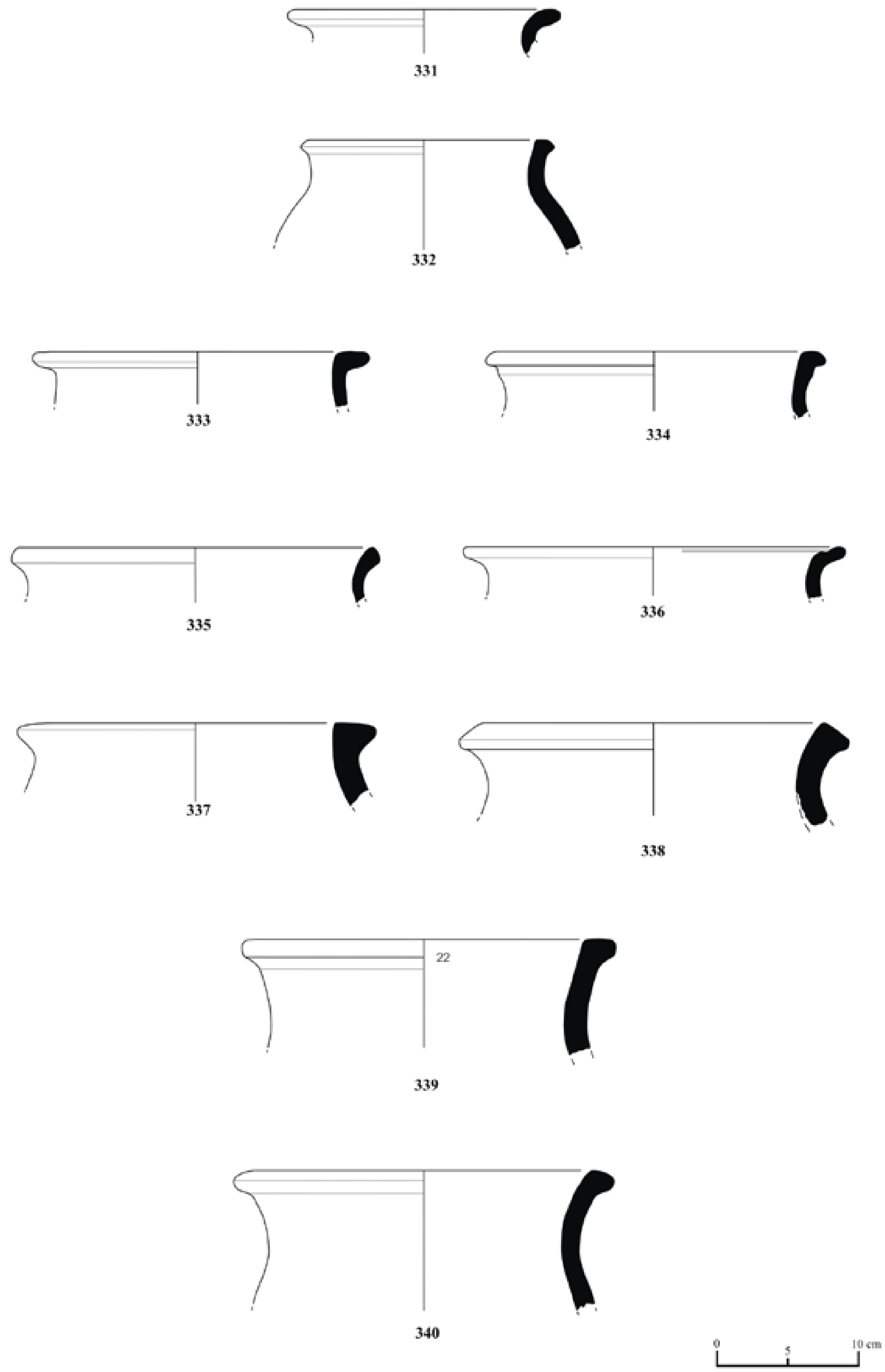
13.2.



Res. - Fig.34

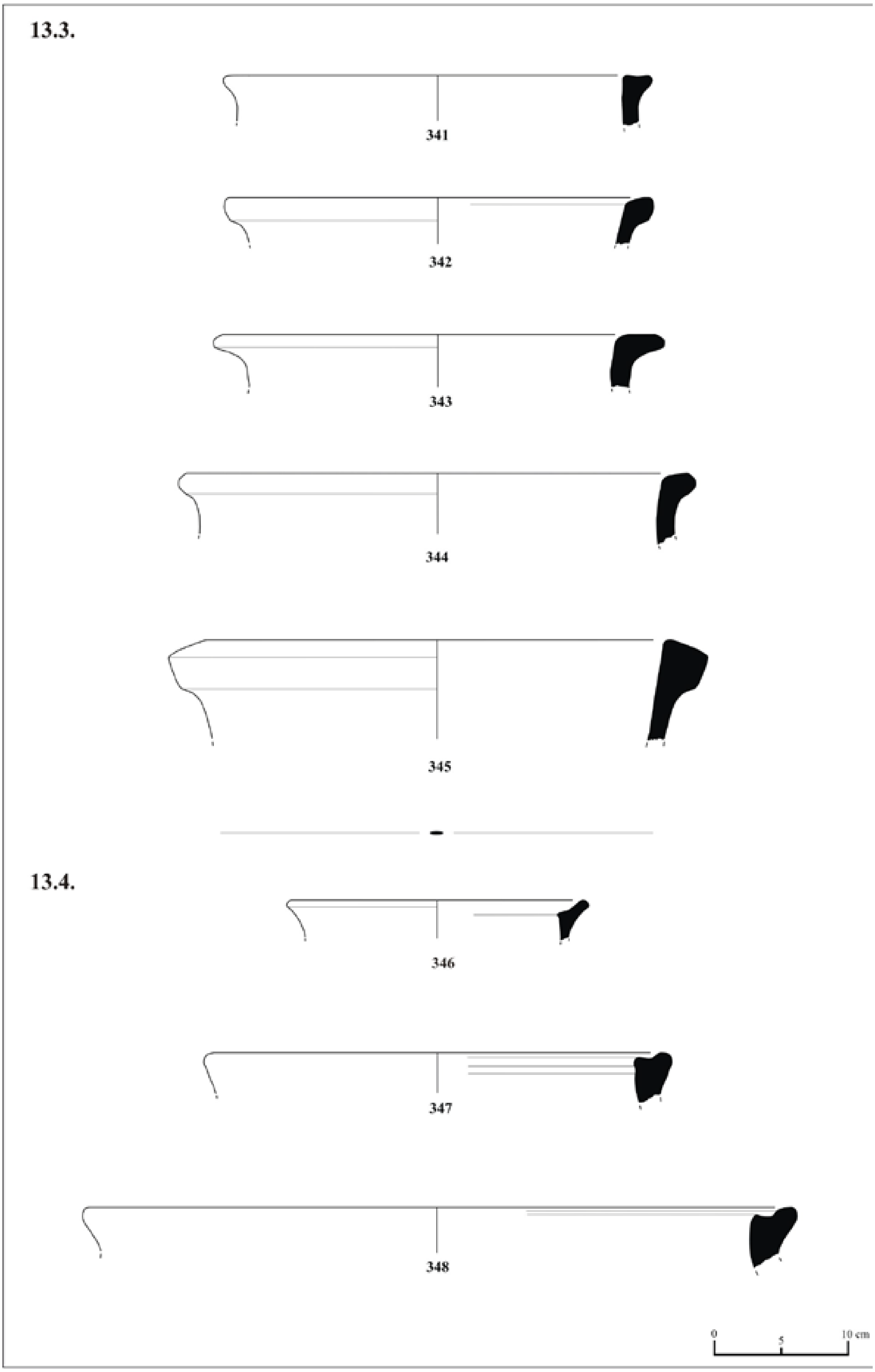
Tip/Type

13.3.



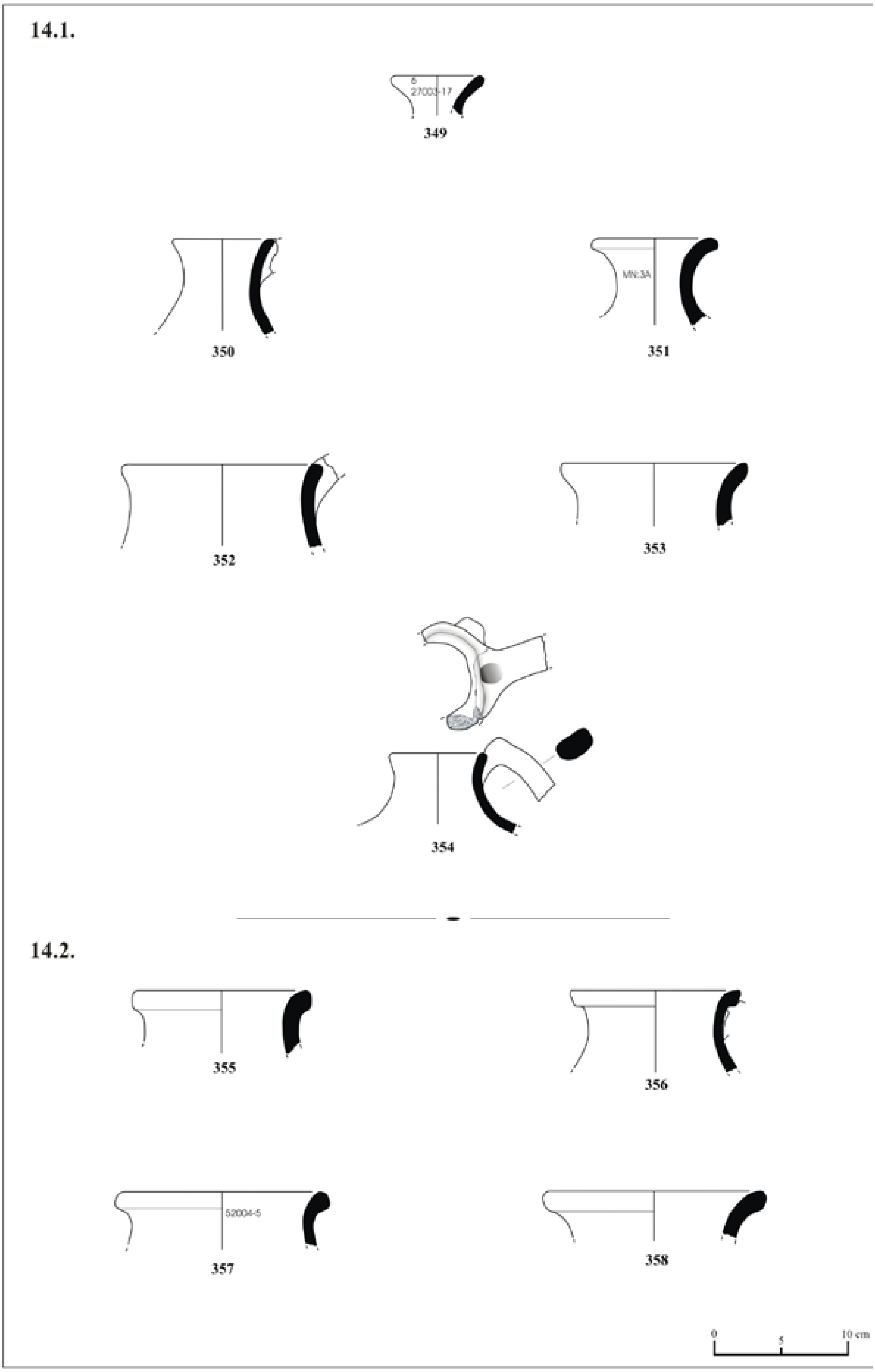
Res. - Fig.35

Tip/Type



Res. - Fig.36

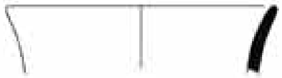
Tip/Type



Res. - Fig.37

Tip/Type

15



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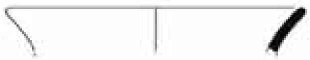

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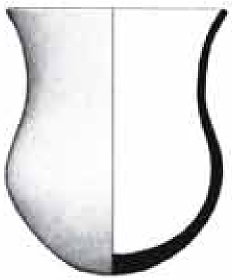
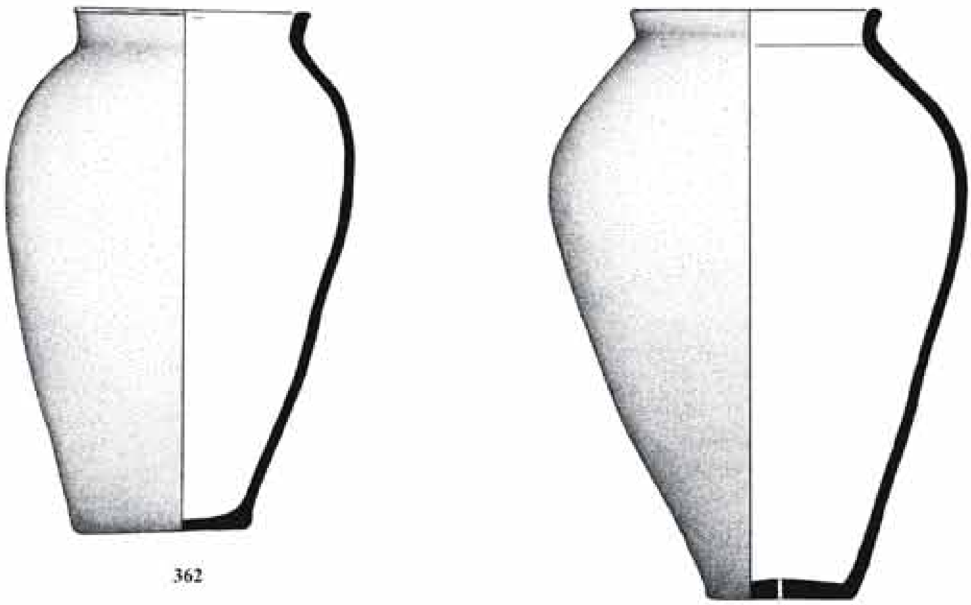


361

Res. - Fig.38

Tip/Type

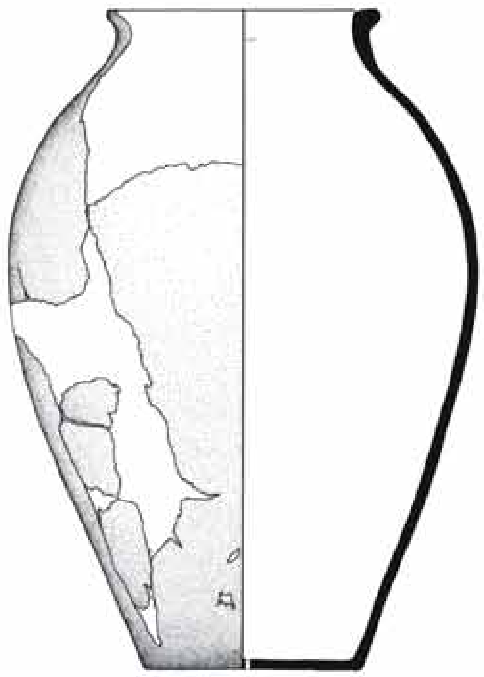
16.1.



362

363

16.2.



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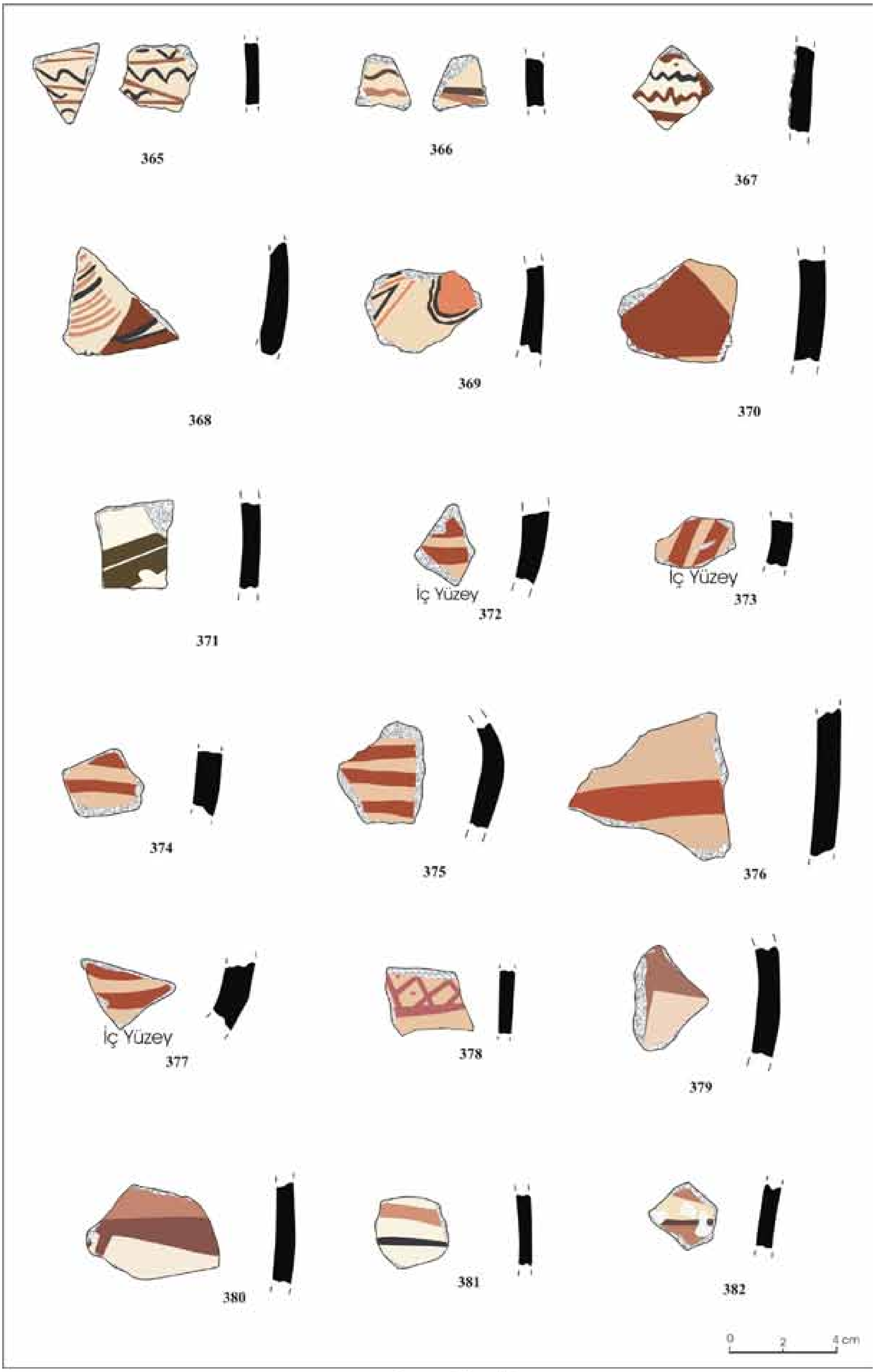
Res. - Fig.39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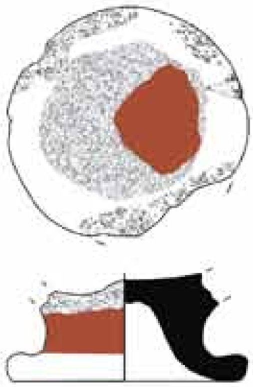

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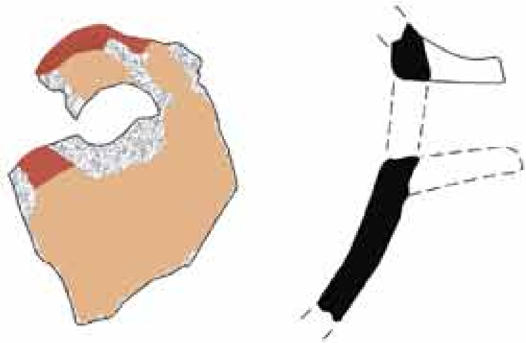

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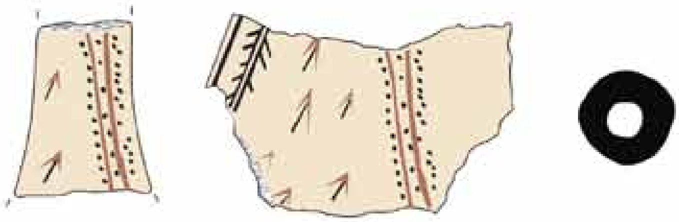

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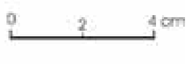

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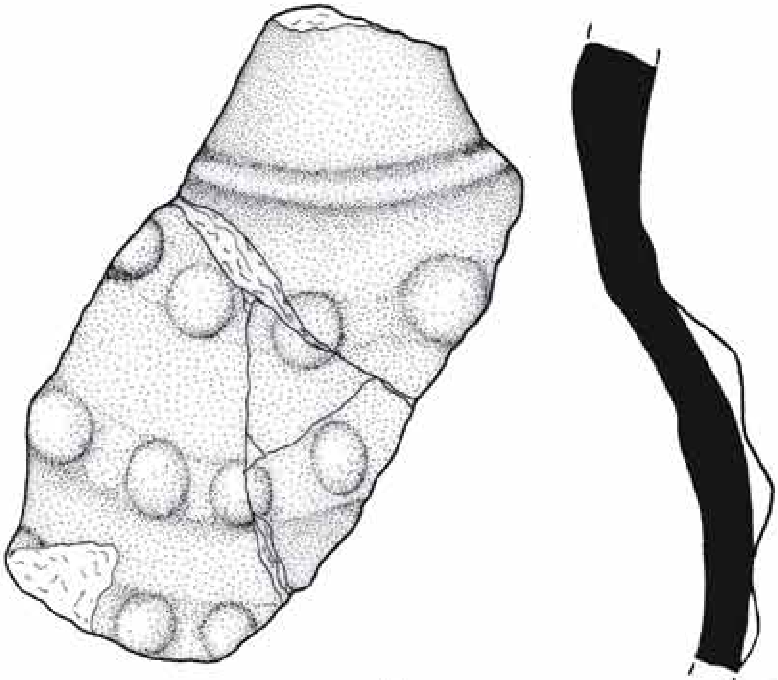

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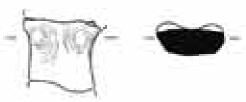

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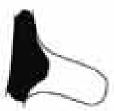

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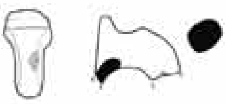

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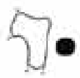

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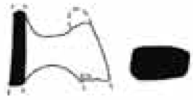

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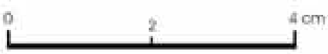

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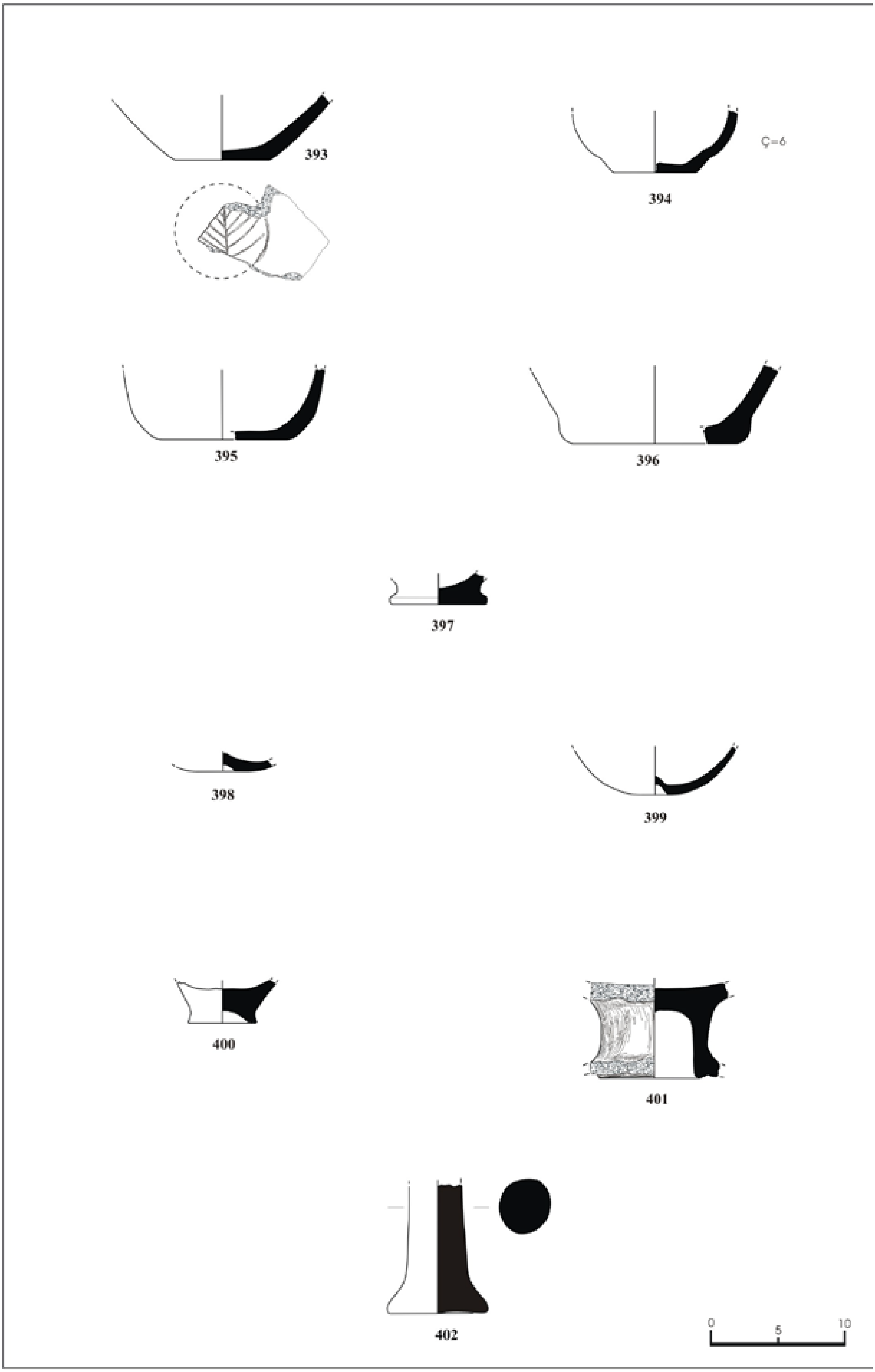

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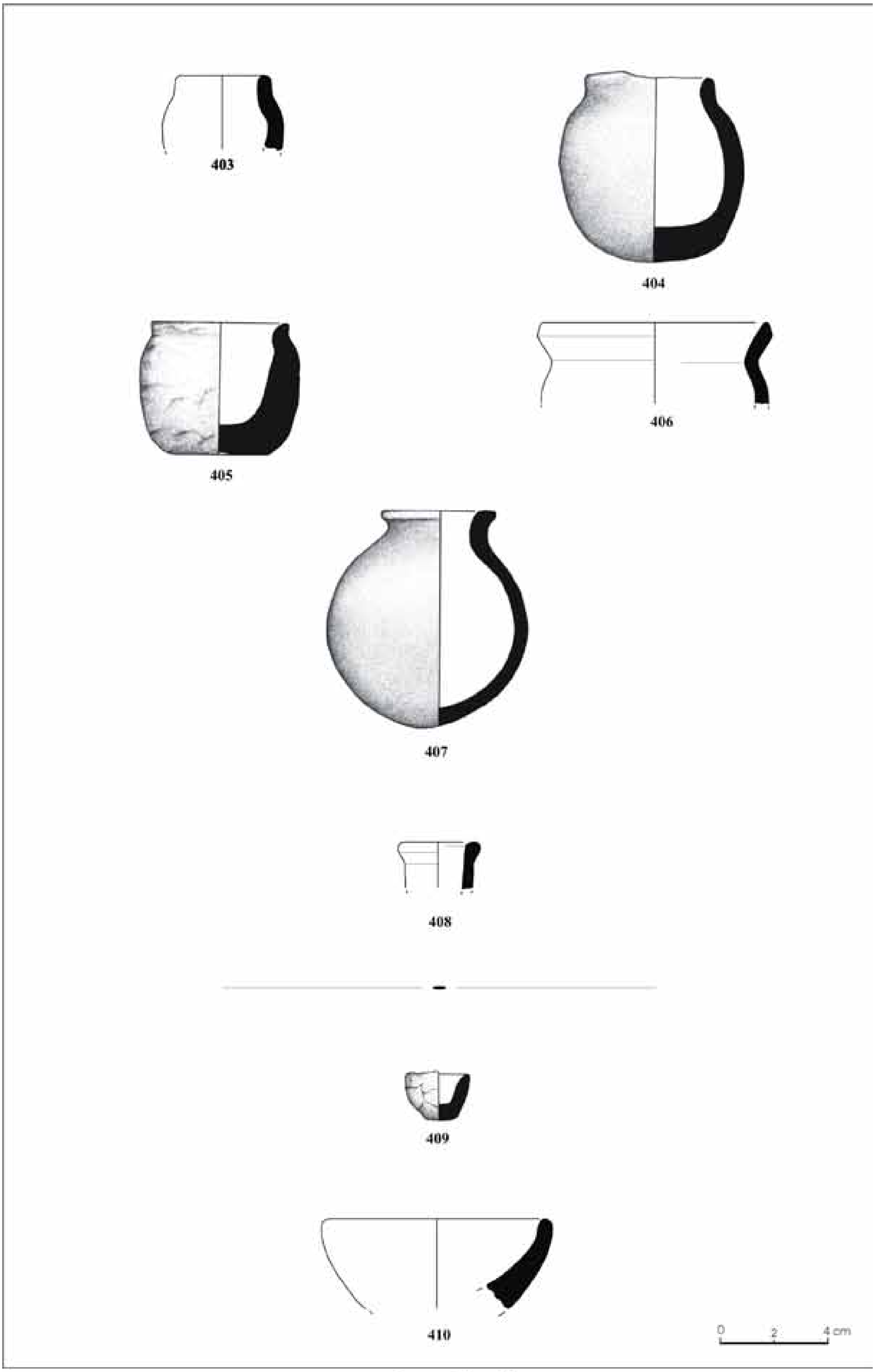

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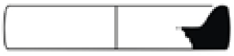

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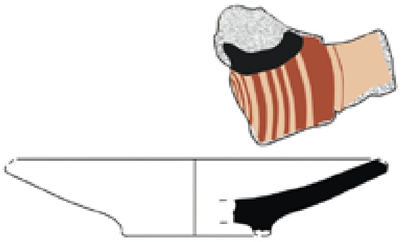

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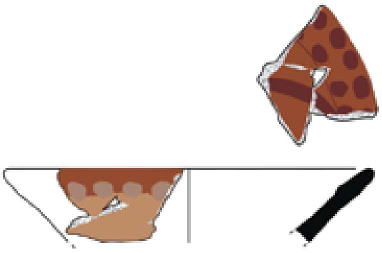

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Part VII
TASMASOR MEDIEVAL AGE SETTLEMENT

Y. Ekim

Historical Setting

Due to its geographic position, from prehistoric ages to Recent Periods, Erzurum was continuously accepted as a gate opening to Anatolia by the Caucasus and Iran steppes and it was continuously invaded by the peoples of region. Therefore, this region was very important for the security of Anatolia in all the times.

The Sasani state established in the 3rd century A.D. in Iran by Parts continued the Eastern Anatolia strategy of Parts to be in a strong position in the region. In order to dominate in this region, Sasanis were struggled with Roma and Byzantines.

One of the most important themas of the Byzantines period was Theodosiopolis (Erzurum) city. This city that is located on the Iranian border and is an important military thema for the region sovereignty was at the center of Byzantines-Sasani contention. Sebastiapolis (Sivas) comprised the western border of this large military thema. As also understood from its name, Theodosiopolis city was established in the Theodosius period (after 387 A.D) at a hill very close to the Şiğve Mountain (Eğerli Mountain).[1] The establishment of city was completed in the first quarter of 5th century[2] and then it played an important role in the Byzantines-Sasani contention.

Depending on ending of the Part dominancy and a tumult in Roma, Armenian principalities were established. The eastern Roma Emperor that was strengthened in the Theodosius period attacked to these principalities that got stronger with commercial activities. The purpose of Theodosius in this expedition was to split the Armenians that got stronger in the region and take this important commercial place before the Sasanis. As a result of this expedition conducted at the beginning of 5th century, Erzurum and its vicinity were captured by Eastern Roma and remaining lands were shared with Sasanis. In this respect, the lands at west of Erzurum where the Armenians live were left with the Roma Emperor and the lands at east of Erzurum where the Armenians are dominated

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[1] Brosset 2003: 132.
[2] Sinclair 1987: 190.

were left with Sasanis. Lands given to Sasanis were only one fifth of the Roman's.[3] Thus, these Armenian-dominated lands were shared between Eastern Roma and Sasanis.[4]

In 502, Sasani ruler Kavaz invaded Theodosiopolis as a result of was declared to the Eastern Roma Emperor. Iranians easily captured Theodosiopolis which is sheltered castle. Due to a conflict between Rums and Armenians, Armenians betrayed to Romans and handed over the city to Iranians. However, one year later, Eastern Roma Emperor Anastasius regained Theodosiopolis from Iranians made it a solid castle again. In 530, a big war took place between Eastern Roma and Sasanis who continuously struggled to dominate in the region. Dorotheus and Sittas, eastern border commanders of Byzantines, defeated the Iranian army around Theodosiopolis. In the same year, Byzantine general Belisairius refortified Theodosiopolis.

The most brilliant period of the Theodosiopolis city was during the Iustinianos period. In this period, city gained a commercial as well as military identity. Iustinianos who wanted to accelerate the western politics made a piece agreement in 532 with Sasani state at east. However, during the II Iustinos period who took power of Iustinianos, the conditions of agreement could not be implemented and Theodosiopolis, which was an important place by means of commerce and strategy, had become the center of long-lasting struggles. The strategic importance of Theodosiopolis also continued in following periods and this region was accepted as a gate to Anatolia.

Defeating of Sasanis by the Arabians in 636-640 wars changed the destiny of Armenians living in the region.[5] Thus, Sasani pressure on Armenian people living in Iran and Anatolia were recessed. By then, Erzurum and its vicinity were ruled by Arabians by dividing several emirates. At the beginning of 9th century, the region was ruled out by several emirates contingent to Abbasids.[6] The Tao-Klarjeti principality under domination of Arabians was made a principality by *kouropalates* I. Aşot[7] (780-826) in areas today known as Artvin and Erzurum.

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[3] Grousset 2005: 160.
[4] Honigmann 1970: 7.
[5] Grousset 2005: 285.
[6] In Georgia, that is called as "upper region" by the Arabians who established the Kaheti, Hereti, Abhazeti and Tao-Klarceti principalities (Bayram 2003: 21).
[7] I. Aşot, who stayed in Tbilisi for a while under the dominancy of Arabs, came to Ardanuç and had the castle repaired there and made this city as the capital of princedom. Aşot, who had good commercial relations with his neighbors, increased his political power in the region in time, and he behaved in parallel to Byzantine's benefits in the region and became the first Georgian prince who was given *kouropalates* (kour opal at hs) title by the Byzantine Imperators (Lang 1997: 95; Kazdan 1991: 2, 1157).

In 994-1000, city was held by Georgians. However, with the dead of Georgian king, Georgians stared to be untied and they had to leave Erzurum for Byzantine.[8] With the ruling out of region by the Byzantines, security was maintained and commercial live was developed. Erzurum region is a strategic center where commerce can be developed regarding its position, and during this period, it was an important stop of trade road between Trabzon and Istanbul. The Erzurum thema that was getting strong under the dominancy of Byzantine invaded the Ani city in 1045.[9]

Following a long Arabian dominancy, Seljuks stared to attack the region in 1045-1049. Attacks started under command of Ibrahim Yinal were towards the south from Georgia and lands to the Erzurum region were controlled by Turks. Byzantine Imperator Konstantinos Monomakhos had a great contribution for the Seljuk Turks to easily access Erzurum before the Pasinler war. As a result of Emperor's pressures, fifty-thousand troops of Armenians against Turks was dispersed which provided Turks easily occupy the Eastern Anatolia. After the Pasinler war, Seljuks took some part of Erzurum (Garin in Armenian) and they advanced to south and west (1048- 1049).[10] Then, the 1054-1055 expeditions of Tuğrul Bey on the Armenians were more effective and the Seljukian army accessed Büyüktüy village close to Tasmasor at northeast of Erzurum from the Pasinler Plain. Tuğrul Bey came back due to strong Erzurum defense.[11]

In 1071, the region was completely destroyed. Byzantine and Seljukian armies were ready to fight for ending this complex situation. Byzantine forces were accommodated in Erzurum for a while to strengthen the army with troops from the vassal principalities. Seljukians were strengthened their army with forces from Azerbaijan and Musul. On the basis of agreement made at the end of Malazgirt war in 1071, Erzurum will be the last castle of Byzantine at east. However, since Byzantines broke the rules of agreement and the Emperor Romanos Diogenes was assassinated, Turks occupied Erzurum. Following the invasion of Erzurum, the Georgian king II. Giorgi who was waiting for the westerly movement of Seljukian army, occupied the region. Then, Melik-şah, successor of Alparslan, sent the forces commanded by Emir Ahmed to the region,[12] and following the defeat of II. Giorgi by Emir Ahmed, Şavşat,

[8] Sinclair 1987: 280
[9] Sinclair 1987: 190
[10] Grousset 2005: 571-573.
[11] Grousset 2005: 585.
[12]Brosset 2003: 307

Ardanuç, Çoruh, Batum, Gümüşhane and Trabzon were contingent on the Saltuklu Principality (1071-1202) whose center is Erzurum.[13]

The power of Saltuklu Principality was shacked by the throne fight after the dead of Melik-şah.[14] In 1115, the Georgian prince IV David (1089-1125)[15] benefiting from this situation advanced until Erzurum and then occupied Tbilisi.[16] In 1126, the region was taken by Seljukians with the army sent by Sultan Sencer on the Georgian prince IV David.[17]

II. İzzedin Saltuk, who took the Saltuklu throne, Sökmens and the Erzen principality at south were together against the Georgians. However, by the weakening of emirates that were alliance of Saltuks, Georgians increased the pressure and under the command of Commander-in-chief David they advanced until Erzurum in 1193, but they could not take the city. The Anatolian Seljuk Sultan II. Rükneddin Süleyman-şah took Erzurum in 1202 and demolished the Saltuklu principality which was extremely weakened by the Georgians attacks.[18]

In 1202-1230, the region was ruled out by people sent by Anatolia Seljukians.[19] Seljukians made an expedition on Muhittin Tuğrul'un[20], who pursued an independent strategy and declared independent in 1215, and in 1230 they connected the city to the center

The Mongolian[21] danger started particularly by the second quarter of 13th century resulted in diminishing of clashes between Seljukians and Georgians and a mutual thrust was formed between the sides via kinship.[22] In spite of all these efforts, in 1242, the Erzurum region was invaded by Mongolians.[23]

[13]Kırzıoğlu 1990: 116- 117
[14]In 1102-1105, a throne struggle took place between Sultan Berk-yaruk and his bother Mehmed Tapar. (Turan 2001: 6).
[15]Meskhia 1968: 13- 14
[16]Sinclair 1987: 442
[17]Georgian Chronicle: 53; Turan 2001: 7
[18]Following the defeating Saltuks, II. Rükneddin Süleyman-şah gives the administration of Erzurum and its vicinity to his bother Muğiseddin Tuğrul-şah (Turan 2001:19- 21).
[19] Sinclair 1987: 190
[20] Sinclair 1987: 283
[21]The Mongolians invaded Caucasus first time in 1220- 1221and obtained southern part of Georgia. (Bedrosyan 1979: 95- 98).
[22]Turan 2001: 24
[23] Sinclair 1987: 191

ARCHITECTURE

In excavation works conducted in Tasmasor, Medieval Age architectural remnants were found in A-39 – A-43 and B-41 openings. These remnants are composed of a NE-SW extending rectangular planned house of 14.35 x 29.90 m and a place of 6.90 x 8.70 m built adjacent to northeast corner of this house.

The house exposed is found to be composed of at least five places (M1- M5) with different dimensions in SW-NE direction. In addition to these places, there is another place (M6) at northeast corner that is believed to be used as semi-open site. Since northeast part of the house is outside the excavation site, the plans of M4-M6 places could not be exactly determined. Among the outer walls extending parallel in SW-NE direction of the structure, the one at southwest exposes only its 29.90 m part and the one at northwest exposes 13.30 m part.

Figure 1: A general view of Medieval structure.

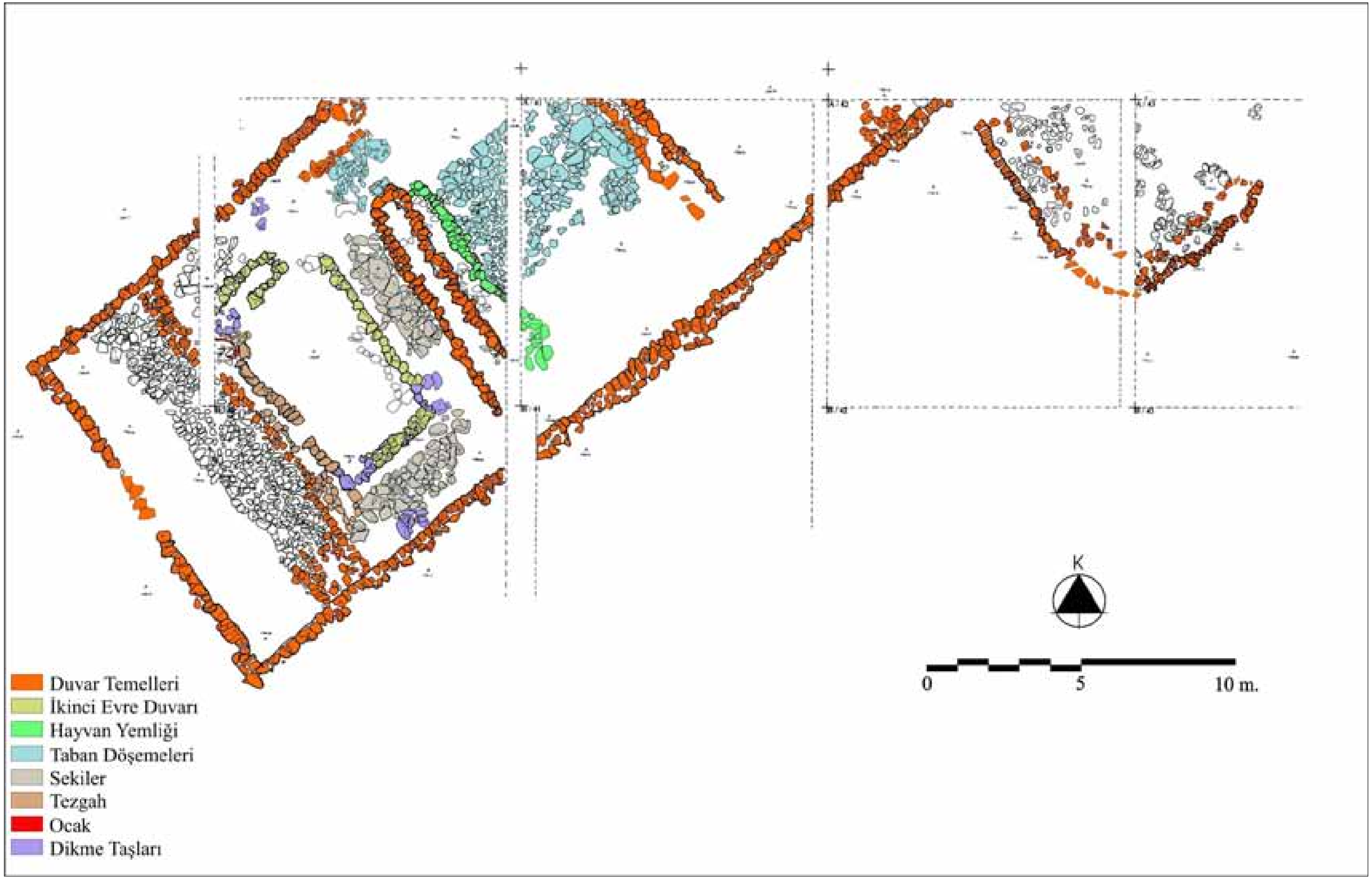

Figure 2: General plan of Medieval structure.

The position of M6 place at northeast corner of the house indicates that structure continues 5.80-6 m in northeast direction and it has a total length of 35 m.

The stone foundation surrounding the structure is composed of single line of stones in most part of structure. However, in some parts of SW-NE extending wall, double lines of stone foundations are observed. This indicates that stone foundation is composed of double lines of stones and after the use of structure, outer part of stone foundation has been stripped off. The facts that thickness of stone foundation surrounding the structure is 1 m and debris material of upper parts is not generally found in the excavation area may indicate that walls were built with the use of mud brick material.

Stone foundations were exposed at a depth of 40 cm from the surface. The use of excavation site as an agricultural area and the position of structure[24] well explain the preservation of only stone foundations.

M1 Place

The place at southwest of structure has a utilizable area of 11 x 2 m. At southeast of structure, foundation remnants were explored that are thought to belong to two different walls adjacent to M2 place. These two wall remnants are of 2 x 11.50 m and their boundaries and functions could not be clearly understood. These walls that were latticed with coarse stones might have been built with mud bricks. Rectangular-shaped main utilizable area at west of place has a compacted soil basement.

Figure 3: General view of room M1.

[24]Since the height at west of flat area where structure was built, is in the dragging site, it is possible to say that walls are intensely eroded.

Out connection of M1 place might have been provided with a mud brick wall that is believed to be at a basement of 50 cm thickness. However, there is no finding regarding gate arrangement of the place that was preserved on a stone foundation.

M2 Place

The place called as M2 has an inner dimension of 6.10 x 12 m and it is defined as the main living side of the house. Entrance to the place is from an opening of 1.85 m wide at north corner of northeastern wall. The wall remnant of 1.06 x 2.50 m built in parallel to SW-NE extending wall of the house partly narrows the entrance. At southwest of entrance, half of partly preserved, an in-situ doorjamb stone was found at southwest of entrance.

In studies conducted in M2 place, two usage stages were determined. The area of 5 x 8.50 m at the center of place with a compacted soil basement comprises the first stage and it was shrunk to 3.40 x 6.20 m with a single stone line at the second stage. At western corner of the area with a soil basement at the center, there is a tendour type stove and a counter of 0.60 x 3 m extending parallel to western wall.

There are 'L' type figures parallel to northeast and southwest walls of the place. At the second stage, 'L' type figures were also enlarged in accordance with narrowing of rectangular area at the center of place and redetermining its boundaries.[25] The space between stone bases and the stone line that was constructed to border the area at the center in the second stage indicates that there are two usage stages in the place.

In M2 place, a number seven stones were found that are evaluated as cover elements and support the wooden posts. These remnants are found inside the long walls extending SW-NE direction of the house and inner and outer sections of single stone line bordering the soil-basement area at the center.

The wall foundation of 1.30 x 9.50 m at NE of M2 place has a different structural technique with respect to other foundations. This wall foundation that separates M2 and M3 places was built with the technique of soil fill between double lines of stone lattice.

1.20 m thickness of foundation may indicate that upper level of the wall is made of mud brick.

[25]The width of 'L' shaped stone base in M2 place was between 1.20 and 1.40 m at then first stage, and it was widened as 1.60 to 1.90 m at the second stage.

Figure 4: General view of room M2 .

M2 place in which stove, counter and wide figures are found, was probably used a kitchen and it is the main living part of the house. The stone base that was explored at southwest wall of M2 place, where a dung stone is also found, is very similar to other stone bases that are commonly used in the winter time in the region.[26]

M3 Place

M3 place of 7.50 x 12.50 m has an irregular rectangular planned utilizable area. Since north and northwest corners of the place are outside the excavation area, no information on possible door entrance was obtained. Sectional wall foundations inside the place were built with the technique of soil fill between double lines of stone.

M3 place could be qualified as an animal manger of 2 x 7.50 m that was built adjacent to sectional wall of 1.20 x 9.50 m separating it from the M2 place. In addition, a door opening of 2.10 m was found that opens to M4 place at south of sectional wall in the eastern part of M3 place.

[26]Sözer 1970: 46

Figure 5: General view of room M3.

The basement flooring of M3 place is at the same level of door opening of M2 place and its extent is similar to that of house. On the basis of basement flooring, it is possible to mention about a corridor that opens to all places starting from the door of M2 place. The level of compacted soil basement of 4.40 x 6 m at south of place[27] is suitable to stone floored basement. Since there is no stone at the south of place, there might be an entresol or wooden figures in this area.

The broad structure of basement flooring explored at this place, the animal manger built next to western wall and entresol or wooden figures found on the compacted soil at south may show that this place might be used as a stable rather than a house. In houses built in regions where stock rising is common, depending on climate conditions, wooden figures are made in the stables that are constructed adjacent to kitchen-functioned main living areas. The reason for making of these figures is generally to benefit from the heat of animals during the cold winter days. Figures portray a sitting place at a height of 1 or 1.5 m from the basement which is surrounded with fence pots that is accessed with an a foot step-stair.[28]

[27]Partial subsidence is observed on stone floored area.
[28]Sözer 1970: 46

M4 and M5 Places

Since these places are outside of study area, no information was obtained on their plans. 1.30 x 1.50 m part of the eastern wall of M4 place was explored. Considering this, the width of place is as much as 4.70 meters. The basement of M4 place is probably a compacted soil. The place called as M5 is completely outside of study area and no information was obtained on its plan.

M6 Place

Differing from other places in the house, M6 place was built later next to northeastern wall of house was probably used as an open-site. The fact that there is no remnant for the northeastern wall of M6 place supports the open-site use of this place such as storage. Wall foundations explored were built with the technique of soil fill between double lines of stone lattice. Coarse stones were encountered at the basement level

Material and Technique

Wall foundations were latticed with coarse stones of various sizes[29] using the soil mortar. Since foundations are not thick[30] enough to carry stone walls, walls of this structure might have been built with mud brick or a lighter material. Since outer wall foundations of house are damaged, a straight lien is only observed for the inner part of foundation. Double line of stones is clearly seen on sectional walls that are better preserved in comparison to the outer surface.

Stones used at the basement are generally composed of stones of various sizes with broadly smoothed surfaces. In stone bases, semi-plate stones were used with more smoothed surfaces in comparison to stones at the basement. Among the architectural elements, a tendour type stove is buried at the counter and it is surrounded with stones.

Water Transport and Distribution Network of the Recent Period

SE-NW extending cooked soil water transportation line and distribution networks explored in A-26 and B- 27 openings at western part of the hill in Tasmasor are thought to belong to Tasmasor village which was in use in the near past.

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[29]Stones used in sectional wall lattice are about 20 x 17 x 19 cm, 22 x 15 x 17 cm., 24 x 23 x 25 cm; while stones used in outer wall foundation of the house are about 55 x 64 x 36 cm, 51 x 54 x 47 cm, 52 x 61 x 33 cm.

[30]Thickness of wall foundations at outer surface averages as 70 cm. Thickness of sectional wall foundations averages as 1 m.

One part of line extends to a fountain whose remnants are still observed around the Recent Period Tasmasor village (Figure 7). In surface investigations conducted at this site which is out of the study area considering the orientation of pipes, several pipe pieces were found due to agricultural damage around the Tasmasor village. The pipes and distribution network have been preserved since the area where they are found is located at the hill side and is not suitable for agriculture.

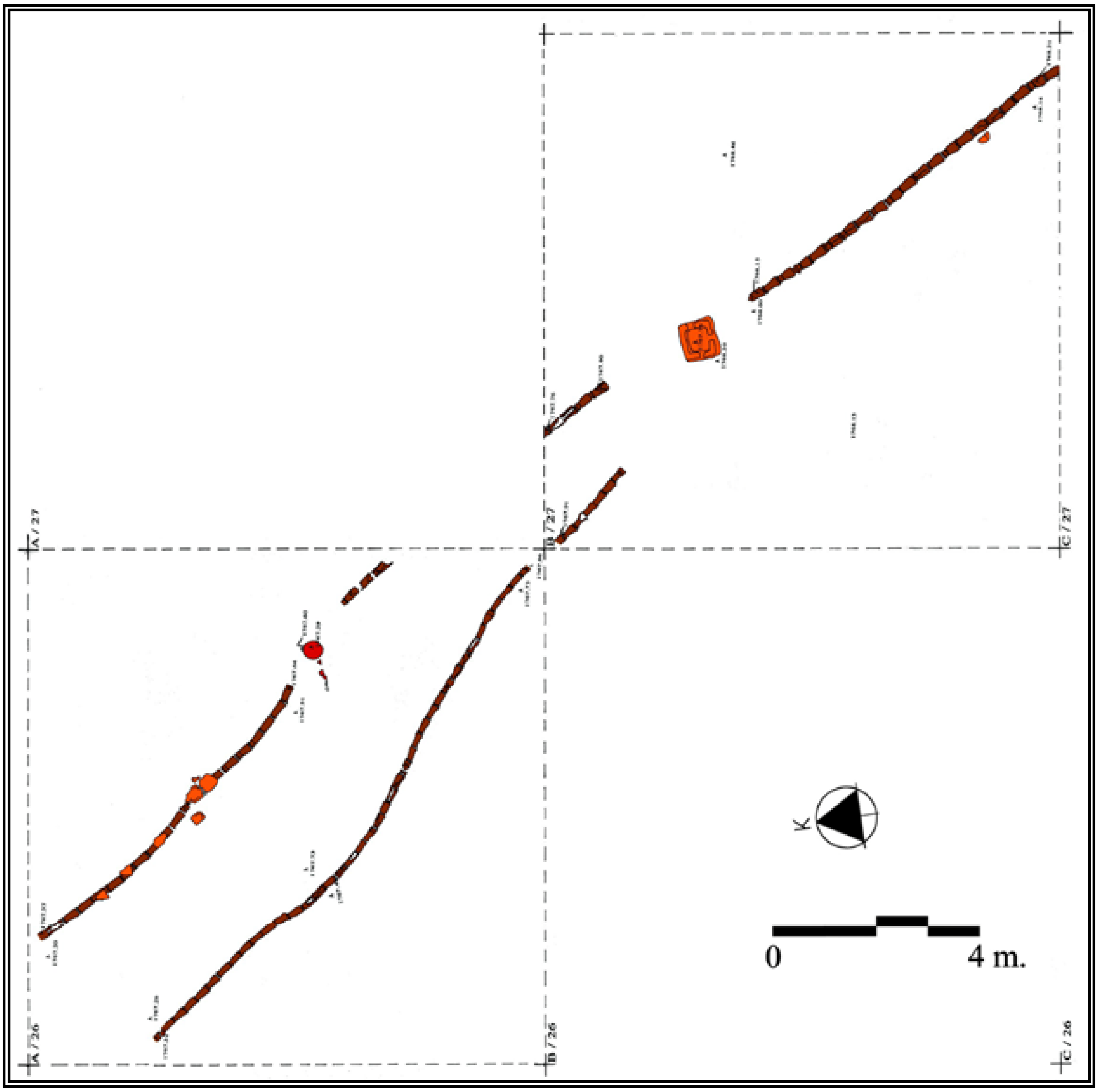

Figure 6: General view of water network.

The drain pipes of 16- 10.09 cm diameter with 7-m preserved part in SE-NW found in B-27 opening are connected at 7.75 m to a distribution network of 65 x 55 x 50 cm which is made of basalt and has single inlet and double outlets. This drain pipe line is divided into two branches there and flows to the same direction. The diameter of pipes in the line, which is located northwest of distribution network, was shrunk to 13.02- 9.06 cm and the continued so on. This drain pipe line that is also continuous in A-27 opening has a total explored part of 13.10 m. The line with an unshrinking drain pipe continues 6.10 m and in A-27 opening, a second distribution network was explored in which a cube was used. A small pipe line of 7 m diameter is separated from this network in which belly part of a cooked cube was used. On the main drain line that extends northwest with an explored part of only 6.40 m, no change was observed. On the drain line, some repairs were made with stones.

The drain lines found in Tasmasor are of three types by size. The first type has a length of 42.02 cm, and female and male edges are of 16 and 10.09 cm diameter. In general, there are wave decorations of scrapping technique. The second type has a length of 34 cm, and female and male edges are of 13.02 and 9.06 cm diameter. The third type has a length of 30 cm, and female and male edges are of 7 and 4 cm diameter.

Figure 7: A fountain remnant from the Recent Period.

TASMASOR MEDİEVAL AGE CERAMICS

In studies conducted in Tasmasor, it was determined that Medieval and Iron Age layers are locally mixed with each other. In areas of layering, particularly in the area of house which is evaluated in the Medieval Age, an intense man-made smoothing is detected from the complexity of ceramic material. The distribution of glazed ceramics in the area also yields a general disturbance. Therefore, the mixed ceramic material was evaluated upon separation of known container types and considering the results of published archeological excavation works and surface investigations conducted in the vicinity of region. Most of the ceramics included to this study are composed of samples obtained from Medieval Age structure which shows less complexity in comparison to other areas.

WARE GROUPS:

As a result of study conducted on 93 pieces evaluated in Tasmasor, a total eight ware groups **(Figure 7)** was determined. The main separation of ware groups was made with respect to their paste colors. Following this paste-color separation, wares were morphologically examined and sub-types were formed. Among the groups, brown ware pieces are dominant. The most noticeable group among the wares is reddish yellow pieces. All the ceramics in this group are glazed.

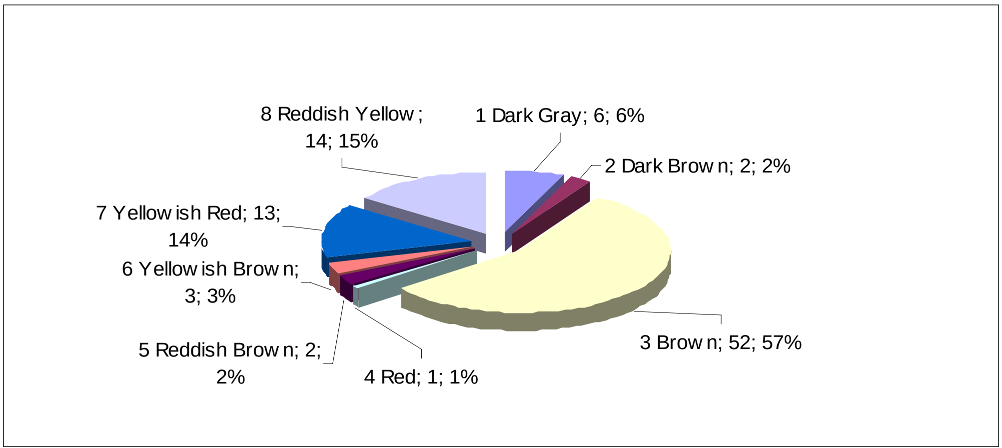

Figure 7: Separation of wares by their colors.

1-Dark Gray Wares

A. It is composed of little chalk, ceramic powder, moderately mica, intense sand added, well cooked cement, moderately compact and less porous. It is normal coated and polished for both inside and outside. Cement color is gray (7.5 YR 3/1), grayish brown colored for out (2.5 Y 5/2), dark grayish brown colored for inside (10 YR 4/2) (H 1)

B. It is composed of little stone, chalk, ceramic powder, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both inside and outside. Cement color is gray (7.5 YR 4/1), red for out (2.5 YR 4/6) and light brown (7.5 YR 6/3) colored for inside. (H 1)

C. It is composed of little sand, ceramic powder, intense mica added, moderately cooked cement, moderately compact and less porous. Micaceous coated for outside and thin coated, unpolished for inside. Cement color is gray (10 YR 3/1), dark gray for out (5 YR 3/1) and brown (7.5 YR 5/3) for inside. (H 1)

D. It is composed of little chalk, mica, intense fine sand added, well cooked cement, moderately compact and less porous. It is normal coated for both inside and outside and polished at out. Cement color is dark gray (10 YR 3/1), black for out (Gley 1 2.5/N), dark light gray (2.5 Y 4/1). (H 1)

2- Dark Brown Ware

It is composed of little chalk, mica, sand, ceramic powder, chaff, moderately stone added, succulently cooked cement, coarse, compact and less porous. It is normal coated for outside and thinly coated for inside and polished for both sides. Cement color is dark brown (7.5 YR 5/6), brown (7.5 YR 5/4) for outside and red (2.5 YR 5/6) for inside. (H 2)

3- Brown Wares

A. It is composed of little chalk, mica, ceramic powder, chaff, moderately stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated for outside and outside and unpolished. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside and brown (5YR 5/4) for inside (H 3).

B. It is composed of little chalk, mica, moderately sand, coarse and moderately stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 5/4), reddish brown (2.5 YR 5/4) and dark gray (10 YR 4/1), brown (7.5 YR 4/2) for outside and reddish brown (5YR 5/4) for inside. (H 3)

C. It is composed of little chalk, quartz, moderately stone, mica, sand added, succulently cooked cement, moderate, compact and less porous. It is normal coated for outside, thin coated for inside and both sides are polished. Cement is brown (7.5 YR 5/4), yellowish red (5 YR 5/6) for outside and reddish brown (5 YR 5/4) for inside. (H 3)

D. It is composed of little stone, mica, plant seed, moderately chalk, sand, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is brown (7.5 YR 4/4), light brown (7.5 YR 6/3) for outside and reddish brown (5 YR 4/3) for inside. (H 3)

E. It is composed of little chalk, mica, sand, moderately stone added, succulently cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated for inside and both sides are polished. Cement is brown (7.5 YR 5/4), dark gray (10 YR 3/1), brown (7.5 YR 5/3) for inside and brown (7.5 YR 5/4) for inside. (H 3)

F. It is composed of little stone, chalk, mica, sand, ceramic powder added, sticky cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement is brown (7.5 YR 4/4), some are dark brown (7.5 YR 3/1), brown (7.5 YR 4/2) for outside and dark reddish gray (2.5 Y 4/1) for inside. (H 3)

G. It is composed of little chalk, chaff, moderately mica, intense stone, sand added, moderately cooked cement, coarse, compact and less porous. It is thinly coated for outside, is normal coated and polished for inside, Cement is brown (7.5 YR 4/4), dark brown (7.5 YR 41) for outside and dark gray (7.5 YR 3/1) for inside. (H 3)

H. It is composed of little mica, ceramic powder, intense stone and sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement is brown (7.5 YR 5/4), red (2.5 YR 4/6) for outside and reddish brown (5 YR 4/4) for inside. (H 3)

J. It is composed of little stone, chalk, quartz, mica and intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement is brown (10 YR 4/3) and red (10 R 4/6) for both sides. (H 3)

K. It is composed of little stone, chalk, moderately sand, intense mica added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is brown (7.5 YR 5/4), reddish brown (2.5 YR 4/4) for outside and reddish brown (5 YR 5/4) for inside. (H 3)

L It is composed of little stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, unpolished for inside, unpolished. Cement is brown (7.5 YR 5/4), dark brown (7.5 YR 3/2) for outside and light pink (5 YR 7/4) for inside. (H 3)

M. It is composed of little chalk, moderately stone, sand, intense mica added, moderately and sticky cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is brown (7.5 YR 5/4), light brown (7.5 YR 6/4), and reddish brown (2.5 YR 6/4) for inside. (H 3)

N. It is composed of little chalk, mica, moderately stone, sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is reddish brown (2.5 YR 5/4), reddish brown for outside (2.5 YR 4/3), dark gray for inside (10 YR 3/1). (H 3)

O. It is composed of little mica, sand, intense stone added, sticky cooked cement coarse, compact and less porous. It is normal coated for outside, thinly coated for inside and unpolished at outside. Cement is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)

Ö. It is composed of little chalk, quartz, ceramic powder, moderately stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside and, brown (10 YR 5/3) for inside. (H 3)

P. It is composed of little mica, moderately sand, intense stone, chalk added, moderately cooked cement, coarse, loose and porous. It is thinly normal and polished for both sides. Cement is brown (7.5 YR 5/4), dark brown (7.5 YR 3/2) for both sides. (H 3)

4- Red Ware

It is composed of little chalk, moderately stone, mica, intense sand added, well cooked cement, coarse, compact and less porous. It is normal coated, thin coated and unpolished for inside. Cement is red (10 R 5/8), reddish brown (2.5 YR 5/4) for outside, reddish brown (2.5 YR 5/3) for inside. (H 4)

5- Reddish Brown Wares

A. It is composed of little quartz, sand, ceramic powder, moderately chalk, intense stone and mica added, moderately cooked cement, fine, compact and nonporous. It is thinly coated for outside, normal coated for inside and polished for both sides. Cement is light reddish brown (5 YR 6/4), brown (7.5 YR 5/3) for outside, light brown (7.5 YR 6/4) for inside. (H 5)

B. It is composed of little stone, chalk, sand, moderately mica, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, thinly coated and unpolished for inside. Cement is reddish brown (2.5 YR 4/3), red (10 R 4/6) for outside, reddish brown (5 YR 5/3) for inside. (H 5)

6-Yellowish Brown Ware

It is composed of little chalk, quartz, mica, chaff, moderately sand, intense stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement is yellowish red (5 YR 4/6), light greenish brown (2.5 Y 5/3) for outside and dark greenish brown (2.5 YR 4/4) for inside. (H 6)

6- Yellowish Red Wares

A. It is composed of little ceramic powder, plant seed, moderately stone, mica added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both sides. Cement is yellowish red (5 YR 5/6) and dark brown (7.5 YR 3/2), brown (7.5 YR 5/3) for outside brown (5 YR 5/4) for inside. (H 7)

B. It is composed of little stone, chalk, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thinly coated and polished for inside. Cement is yellowish red (5 YR 5/6), reddish brown for outside (5 YR 5/4) and reddish (2.5 YR 4/6) for inside. (H 7)

C. It is composed of little chalk, mica, ceramic powder, moderately stone, intense sand added, sticky cooked cement, coarse, compact and less porous. It is normal coated for outside and thinly coated and polished for both sides Cement is yellowish red (5 YR 5/6), some are dark gray (2.5 Y 4/1), light gray (5 Y 7/2) for outside and light gray (10 YR 7/2) for inside. (H 7)

D. It is composed of little ceramic powder, moderately stone, mica, sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thinly coated and polished for outside. Multi-coloring is observed at outside. Cement is yellowish red (5 YR 4/6), dull red for outside (10 R 4/3), reddish brown (5 YR 5/4) for inside. (H 7)

8 Reddish Yellow Wares

A. It is composed of moderate quartz, mica, sand added, well cooked cement, coarse, compact and less porous. It is thinly coated for outside and glazed inside. Cement is reddish yellow (7.5 YR 6/6), reddish yellow (5 YR 6/6) for outside. (H 8)

B. It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is glazed at both sides. Cement is reddish yellow (5 YR 6/8). (H 8)

C. It is composed of little quartz, mica and sand added, well cooked cement, coarse, compact and nonporous. It is glazed at both sides. Cement is reddish yellow (5 YR 6/6). (H 8)

CERAMIC EVALUATION:

A total of 93 pieces including a well-shaped lid found in Tasmasor were used in typologic classification.

Container types evaluated were first divided into two main groups as open and closed. Open containers are evaluated as three groups as plate, bowl and trough while closed containers are also evaluated as three groups as water jug, pot and cubes. In typology, the priority was given to entire form of container. This was followed by containers with no neck to those with neck. Then, rim profiles of containers were arranged from inward-facing to outward-facing and they were sequenced from simple to advanced ones and given a type number.

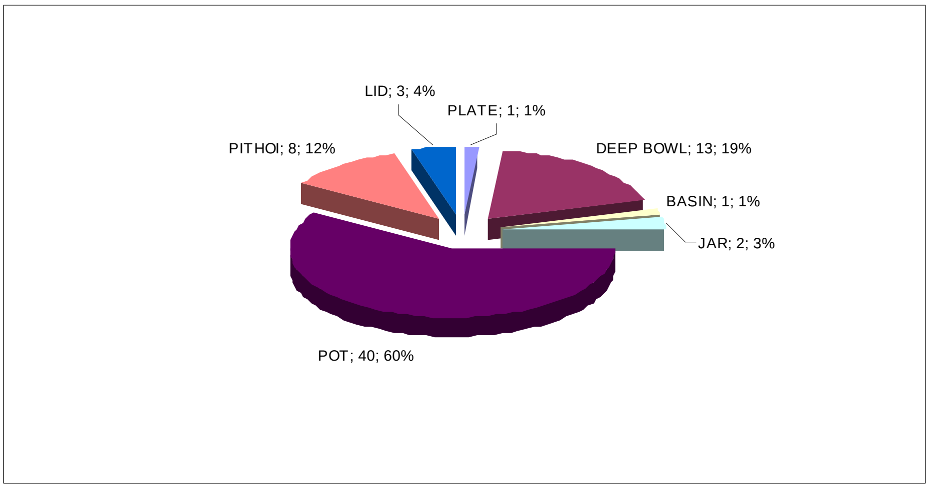

Figure 6: Numeric and rational distribution of types.

T 1: Outward-thickening rimmed, flat plate type.

T2: Similar types of simple rounded rimmed, conical bowls are observed in Sazpegler[31] and Sirjan[32].

T3: Similar types of simple or outward-thickening, inward-facing rimmed circular bowl are seen in Sazpegler[33] and Aşvan Castle[34].

T4: Similar types of outward-pulled rimmed, steep bowl were found in surface investigations in Çorak Hill[35] and Tille Höyük[36] and İmikuşağı[37] excavations.

T5, Slightly inward-cut, outward-thickening rimmed conical bowl type.

T5, Inward-thickening rimmed flat bowl type.

T6, Turned rimmed flat bowl is observed in Tille Höyük[38].

T8, Inward-inclined cut rimmed, circular bowl types are found in Aşvan Castle[39].

T9, Lid chamfered, outward-thickening rimmed, slightly inward-inclined bowl type.

T10, Outward-pulled and outward-thickening rimmed, long water jug type.

T11, Similar types of outward-pulled rimmed, long water jugs are observed in Sazpegler[40], Aşvan Castle[41], Tille Höyük[42] and Gritille[43].

T12, Similar types of outward-pulled rimmed, short, concave bowls are observed in Sazpegler[44],[45] and Gritille[46].

T13, Similar types of simple, outward-pulled and outward-inclined, cut rimmed, short-necked, wide belly pots are observed in Sazpegler[47] and Tille Höyük[48].

T14, Blunted rimmed, long wave necked pot type.

T15, Similar types of outward-pulled and outward-thickening rimmed, long necked pots are observed in Sazpegler[49] and Sos Höyük[50].

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[31]Tekinalp and Ekim 2005: Fig. 8 No. 1.
[32]Morgan and Leatherby 1987: Fig. 11/4-5.
[33]Tekinalp ve Ekim 2005: Fig. 9 No. 4.
[34]Mitchell 1980: Fig. 44 No. 592.
[35]Sagona ve Sagona 2004: Fig. 128 No. 6.
[36]Moore 1993: Fig. 49 No. 219- Level 1.1
[37]Sevin 1995: Fig. 46 No.2.
[38]Moore 1993: Fig. 53 No. 352- Level 3.1-3.2
[39]Mitchell 1980: Fig. 62 No.775, Fig. 77 No.895.
[40]Tekinalp ve Ekim 2005: Fig. 28 No. 11; Fig. 29 No. 9.
[41]Mitchell 1980: Fig. 98 No. 1137.
[42]Moore 1993: Fig. 32 No. 32.
[43]Redford 1998: Fig. 3:5 N, Fig. 3:8 C.
[44]Tekinalp ve Ekim 2005: Fig. 19 No. 2.
[45]Moore 1993: Fig. 34 No. 66- Level 3.4
[46]Redford 1998: Fig. 3:11 D.
[47]Tekinalp ve Ekim 2005: Fig. 33 No. 7; Fig. 19 No. 4, 5
[48]Moore 1993: Fig. 40 No. 108- Level 1.2
[49]Tekinalp ve Ekim 2005: Fig. 33 No. 4, 5, 9; Fig. 41 No. 4, 5.
[50]Sagona vd. 1995: Fig. 6 No. 1.

T16, Similar types of simple, outward-pulled rimmed, inward lid-nested, long-necked pots were found in Korukdağ Tepe[51] surface investigations and Tille Höyük[52] excavations.

T17, Similar types of outward-pulled and outward-thickening rimmed, concave, long-necked pots were found in Sazpegler[53], Aşvan Castle[54], Gritille[55] Han İbrahim Şah[56], Sos Höyük[57] and Kinet Höyük[58] excavations.

T18, Similar types of outward-pulled and outward-thickening rimmed, slightly concave, long-necked pots were found in Çorak Höyük[59], İncili[60], Bayburt Castle[61] surface investigations and Sazpegler[62], İmikuşağı[63], Tille Höyük[64].

T19, Outward-thickening rimmed, concave, long-necked cube type.

T20, Similar types of outward-thickening rimmed, steep, long-necked cubes are observed in Sazpegler,[65] Tetritskaroyskiy Rayon,[66] Aşvan Castle[67] and Gritille[68].

Decoration:

Surface processing of containers found in Tasmasor is generally smooth, the color is the same cement color and thinly coated. Coating application in limited container surface differs from others with respect to color and thickness.

Five samples found are made of slip technique. Plant motifs were made with white, thick coating on preserved rim of transparent, light brown, glazed bowl-type container **(Figure 1.5)**. A similar application is also shown in dips **(Figure 9.69- 70)**. In areas of coating application, glaze is yellowish brown colored and it is dark brown colored in unglazed areas of container. Plant motifs with white, thick coating were applied for inner surface of another dip that is decorated with slip technique. In areas of coating application on this piece, glaze is light yellowish colored and it is dark green colored in unglazed areas of container.

[51]Moore 1993: Fig. 37 No. 87- Level 2.1a, 88- Level 1.1; Fig. 38 No. 92- Level 1.2, 93- Level 2.1a; Fig. 39 No. 99- Level 1.2.
[52]Sagona and Sagona 2004: Fig. 131 No. 13.
[53]Tekinalp and Ekim 2005: Fig. 31 No. 4; Fig. 33 No. 4; Fig. 37 No. 6.
[54]Mitchell 1980: Fig. 43 No. 563.
[55]Redford 1998: Fig. 3:9 C.
[56]Ertem 1982: Fig. 46 No. 48, 69.
[57]Sagona et al., 1995: Fig. 6 No. 5.
[58]Redford et al., 2001: Fig. 39 No. 2.
[59]Sagona and Sagona 2004: Fig. 125 No. 3.
[60]Sagona and Sagona 2004: Fig. 110 No. 10.
[61]Sagona and Sagona 2004: Fig. 113 No. 4.
[62]Tekinalp and Ekim 2005: Fig. 33 No. 9; Fig. 20 No. 10
[63]Sevin 1995: Fig. 49 No.1, 2
[64]Moore 1993: Fig. 39 No. 98- Level 1.2; Fig. 40 No. 100- Level 3.3.
[65]Tekinalp and Ekim 2005: Fig. 43 No. 2.
[66]Amiranaşvili 1991: Fig. 91 No. 2.
[67]Mitchell 1980: Fig. 43 No. 569.
[68]Redford 1998: Fig. 3:3 I

Decorations were made with scrapping, printing and embossing techniques. In some ceramics, scrapping and embossing techniques are observed together.

Decorations of comb drawing technique studied as three groups were determined on four pieces. Comb-decorated samples were observed in surface investigations conducted in Tille Höyük,[69] Taşkun Castle[70] and Kale[71] and Karataş Site[72] in the Bayburt region. Similar types of wavy scrapped and embossed samples were observed in surface investigations conducted in Tille Höyük,[73] Taşkun Castle,[74] Söğütlü[75] and Bayrampaşa Hill[76].

Decorations made by finger or a device technique studied under two subgroups were determined on twenty four samples. Similar types of print decorations made by a device were observed in Taşkun Castle,[77] Aşvan Castle,[78] Gritille[79] and Tille Höyük [80].

Decorations of regular foldings formed in equal spaces by finger print particularly on lips of containers are commonly observed. Similar types of finger print decorations observed in Tasmasor are also found on ceramics obtained from Taşkun Castle,[81] Aşvan Castle,[82] Gritille,[83] and Han İbrahim Şah[84] excavations.

Line or button-like embossing decorations are shown on body and handles of containers. Line-shaped embossing is generally made as wavy lines parallel to the height of container while those of straight lines were made as horizontally. Similar types of button-like decorations are found in Taşkun Castle[85] excavations and surface investigations in İncili[86].

Similar types of containers with embossing-scrapping techniques are observed in Gritille[87].

General evaluation of Tasmasor ceramics with respect to decoration reveals that decorations made with scrapping technique are very common. Decorations on rims with print technique are generally made with finger print on a ribbon.

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[69]Moore 1993: fig. 29 no.14- Level 3.2, fig. 32 no.42- Level 1.1, fig. 34 no.65- Level 3.1.
[70]McNicoll 1983: fig. 77 no. 236- KP II.
[71]Sagona ve Sagona 2004: fig. 110 no.7.
[72]Sagona ve Sagona 2004: fig. 147 no. 2, 4.
[73]Moore 1993: fig. 28 no. 4- Level 2.1- 2.2.
[74]McNicoll 1983: fig. 48 no. 25- KP I/ II ?, fig. 55 no. 68- KP I, fig. 56 no. 77- KP I ?, fig. 50 no. 39- KP I/ II.
[75]Sagona ve Sagona 2004: fig. 121 no. 8.
[76]Sagona ve Sagona 2004: fig. 152 no.11.
[77]McNicoll 1983: fig.70 no.182- KP I, fig. 42 no. 2- KP II, fig. 44 no. 12, fig.67 no. 164- KP I , fig. 73 no 205- KP II, fig. 82 no. 294- CP 2- 3.
[78]Mitchell 1980: fig.97 no. 1118, no. 1127, no. 1131, no. 1132, no. 1133- Ortaçağ II.
[79]Redford 1998: fig. 3:1 F.
[80]Moore 1993: fig. 30 no. 22- Level 1.2, fig. 32 no.45- Level 2.1a.
[81]McNicoll 1983: fig. 44 no.11- KP I, no. 13- KP I, no. 14- KP I, no. 15- KP I.
[82]Mitchell 1980: fig. 100 no.1218- Ortaçağ II, fig. 95 no.1085- Ortaçağ II.
[83]Redford 1998: fig. 3:1 H, 3:6 H- L.
[84]Ertem 1970-71: 45 parç. no. 49.
[85]McNicoll 1983: fig. 56 no. 73- KP II ?.
[86]Sagona ve Sagona 2004: fig. 110 no.11.
[87]Redford 1998: fig. 3: 3 J.

Fig.1.

1. 18016-2: Outward-thickening rimmed, flat plate (T-1). It is composed of little stone, chalk, moderate sand, intense mica added, moderately cook cement, coarse, compact and less porous. It is thinly coated for both sides; unpolished. Cement color is brown (7.5 YR 5/4), reddish brown (5 YR 4/4) at outside, reddish brown for inside (2.5 YR 5/4). (H 3)
2. 24001-10: Simply rounded rimmed, conical bowl (T-2). It is composed of little chalk, quartz, mica, chaff, moderate sand, intense stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is yellowish red (5 YR 4/6), greenish brown (2.5 Y 5/3) for outside and dark grayish brown (2.5 YR 4/4) for inside. (H 6)
3. 41000-1: Simply rounded rimmed, conical bowl (T-2). It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is thinly coated for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
4. 24010B-6: Simply rounded rimmed, conical bowl (T-2). It is composed of little chalk, mica, sand, ceramic powder, chaff, moderate stone added, dense cooked cement, coarse, compact and less porous. It is normal coated for outside, thinly coated for inside and polished for both sides. Cement color is dark brown (7.5 YR 5/6), brown (7.5 YR 5/4) for outside and red (2.5 YR 5/6) for inside. (H 2)
5. 23029-8: Simply rounded rimmed, conical bowl (T-2). It is composed of mica, sand added, well cooked cement, coarse, compact and nonporous. It is glazed for inside. Cement color is reddish yellow (5 YR 6/6). (H 8)
Comp.: Tekinalp and Ekim 2005: Fig. 8 No. 1; Morgan and Leatherby 1987: Fig. 11/4-5.
6. 37014-8: Simple or outward-thickening, inward rimmed, circular bowl (T-3). It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is polished for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
7. 29011-2: Simple or outward-thickening, inward rimmed, circular bowl (T-3). It is composed of little mica, ceramic powder, intense stone and sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 5/4), red (2.5 YR 4/6) for outside and reddish brown (5 YR 4/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 9 No. 4; Mitchell 1980: Fig. 44 No. 592 Medieval I.
8. 35012-16: Outward-pulled rimmed, steep bowl (T-4). It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and polished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside and brown (10 YR 5/3) for inside. (H 3)
9. 14031-1: Double-thickening rimmed, steep bowl (T-4). It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is polished for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
Comp.: Sagona and Sagona 2004: Fig. 128 No. 6; Moore 1993: Fig. 49 No. 219 Level 1.1; Sevin 1995: Fig. 46 No.2.

Fig.2.

10. 24005-5: Slightly inward-cut, outward-thickening rimmed, conical bowl (T-5). It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thinly coated and unpolished for both

sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside, brown (5YR 5/4) for inside. (H 3)
11. 30003-2: Inward-thickening rimmed, flat bowl (T-6). It is composed of little stone, mica, ceramic powder, chaff, intense stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated and polished for inside. Cement color is yellowish red (5 YR 5/6), reddish brown (5 YR 5/4) for outside and red (2.5 YR 4/6) for inside. (H 7)
12. 16020-1: Turned-rimmed, flat bowl (T-7). It is composed of little quartz, mica, sand added, well cooked cement, coarse, compact and nonporous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/6). (H 8)
Comp.: Moore 1993: Fig. 53 No. 352 Level 3.1- 3.2.
13. 52001-9: Inward-inclined cut rimmed, circular bowl (T-8). It is composed of little stone, chalk, mica, moderate quartz, stone added, well cooked cement, coarse, compact and less porous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
Comp: Mitchell 1980: Fig. 62 No.775, Fig Medieval II. 77 No.895 Medieval II.
14. 23023-5: Lid chamfered, outward-thickening rimmed, slightly outward-inclined bowl (T-9). It is composed of little quartz, mica, sand added, well cooked cement, coarse, compact and nonporous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/6). (H 8)
15. 23025-1: Cylindrical shallow trough. It is composed of mica, moderate sand, intense stone, chalk added, moderately cooked cement, coarse, loose and porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 5/4), dark brown (7.5 YR 3/2) for both sides. (H 3)

Fig.3.

16. 29002-13: Outward-pulled and outward-thickening rimmed, long-necked water jug (T-10). It is composed of little chalk, quartz, moderate stone, mica, sand added, densely cooked cement, moderate, compact and less porous. It is normal coated for outside, thin coated for inside and polished for both sides. Cement color is brown (7.5 YR 5/4), yellowish red for (5 YR 5/6) for outside, reddish brown (5 YR 5/4) for inside. (H 3)
17. 16000-4: Outward-pulled rimmed, long-necked water jug (T-11). It is composed of little stone, chalk, mica, ceramic powder, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is dark gray (7.5 YR 4/1), red (2.5 YR 4/6) for outside and light brown (7.5 YR 6/3) for inside. (H 1)
Comp.: Tekinalp and Ekim 2005: Fig. 28 No. 11, Fig. 29 No. 9; Mitchell 1980: Fig. 98 No. 1137 Medieval II; Moore 1993: Fig. 32 No. 32 Level 2.2; Redford 1998: Fig. 3:5 N, Fig. 3:8 C.
18. 29001-1: Outward-pulled rimmed, short, concave necked bowl (T-12). It is composed of little chalk, mica, moderate sand, coarse and moderate stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is reddish brown (2.5 YR 5/4) and dark gray (10 YR 4/1), brown (7.5 YR 4/2) for outside and reddish brown (5YR 5/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 19 No. 2; Moore 1993: Fig. 34 No. 66 Level 3.1- 3.2; Redford 1998: Fig. 3:11 D.
19. 16003-3: Simple, outward-pulled rimmed, short necked, wide-bellied bowl (T-13). It is composed of little stone, chalk, mica, sand, ceramic powder added, densely cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 4/4), some are dark brown (7.5 YR 3/1) dense, brown (7.5 YR 4/2) for outside, dark reddish gray (2.5 Y 4/1) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 33 No. 7

20. 34020-2: Outward-pulled and outward-inclined cut rimmed, short-necked, wide-bellied bowl (T-13). It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, and intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside and brown (10 YR 5/3) for inside. (H 3)
21. 23002-1: Simple, outward-pulled rimmed, short necked, wide-bellied bowl (T-13). It is composed of little stone, sand, ceramic powder, intense mica added, moderately cooked cement, coarse, compact and less porous. It is micaceous coated for outside, thin coated and unpolished for inside. Cement color is dark gray (10 YR 3/1), dark gray (5 YR 3/1) for outside and brown (7.5 YR 5/3) for inside. (H 1)
Comp.: Tekinalp and Ekim 2005: Fig. 19 No. 4 Moore 1993: Fig. 40 No. 108 Level 1.2.
22. 20006-5: Outward-pulled and outward-thickening rimmed, short necked, wide-bellied bowl (T-13). It is composed of little stone, chalk, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated and polished for inside. Cement color is yellowish red (5 YR 5/6), reddish brown (5 YR 5/4) for outside and red (2.5 YR 4/6) for inside. (H 7)
23. 24008-6: Simple, outward-pulled rimmed, short necked, wide-bellied bowl (T-13). It is composed of little chalk, quartz, mica, chaff, moderate sand, intense stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is yellowish red (5 YR 4/6), greenish brown (2.5 Y 5/3), dark grayish brown (2.5 YR 4/4) for inside. (H 6)
Comp.: Tekinalp and Ekim 2005: Fig. 19 No. 5
24. 43014-8: Outward-pulled and outward-thickening rimmed, short necked, wide-bellied bowl (T-13). It is composed of little stone, chalk, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated and polished for inside. Cement color is yellowish red (5 YR 5/6), reddish brown (5 YR 5/4) for outside and red (2.5 YR 4/6) for inside. (H 7)
25. 34020-5: Simple, outward-pulled rimmed, short necked, wide-bellied bowl (T-13). It is composed of little ceramic powder, plant seed, moderate stone, mica added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is yellowish red (5 YR 5/6), dark brown (7.5 YR 3/2), brown (7.5 YR 5/3) for outside and brown (5 YR 5/4) for inside. (H 7)

Fig.4.

26. 24012-7: Blunted rimmed, long wave necked bowl (T-14).). It is composed of little chalk, mica, moderate stone, sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4) reddish brown (2.5 YR 4/3) for outside and dark gray (10 YR 3/1) for inside. (H 3)
27. 24040b-5: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside and brown (5YR 5/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 33 No. 5
28. 41004-3: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and uncoated and unpolished for

inside. Cement color is brown (7.5 YR 5/4), dark brown (7.5 YR 3/2) for outside, light pink (5 YR 7/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 35 No. 9
29. 34015-2: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
30. 23026-8: Outward-pulled and inward-thickening rimmed, long necked bowl (T-15). It is composed of little stone, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and polished for inside. Cement color is red (5 YR 5/6), reddish brown (5 YR 5/4) for outside, red (2.5 YR 4/6) for inside. (H 7)
31. 16026-2: Outward-pulled and outward-thickening rimmed, lid chamfered inside, long necked bowl (T-15). It is composed of little chalk, moderate stone, sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4), reddish brown (2.5 YR 4/3) for outside and dark gray (10 YR 3/1) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 35 No. 4; Sagona et al., 1995: Fig. 6 No. 1
32. 50000-2: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little chalk mica, intense very fine sand added, well cooked cement, coarse, compact and less porous. It is normal coated for both sides and polished at outside. Cement color is dark gray (10 YR 3/1), black (Gley 1 2.5/N) for outside and, dark light grey (2.5 Y 4/1) for inside. (H 1)
33. 16026-16: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little ceramic powder, plant seed, moderate stone, mica added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is yellowish red (5 YR 5/6) and dark brown (7.5 YR 3/2), brown (7.5 YR 5/3) for outside and brown (5 YR 5/4) for inside. (H 7)
Comp.: Tekinalp and Ekim 2005: Fig. 41 No. 5
34. 23005-1: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little stone, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and polished for inside. Cement color is yellowish red (5 YR 5/6), reddish brown (5 YR 5/4) for outside, red (2.5 YR 4/6) for inside. (H 7)
Comp.: Tekinalp and Ekim 2005: Fig. 41 No. 4
35. 24011-2: Outward-pulled and outward-thickening rimmed, long necked bowl (T-15). It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and polished for inside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)
36. 29011-1: Simple, outward-pulled rimmed, lid nested inside, long necked bowl (T-16). It is composed of little chalk, mica, moderate sand, coarse to moderate stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 5/4), reddish brown (2.5 YR 5/4) and dark gray (10 YR 4/1), brown (7.5 YR 4/2) for outside, reddish brown (5YR 5/4) for insdie. (H 3)
Comp.: Moore 1993: Fig. 37 No. 87 Level 1.2a
37. 29002-10: Simple, outward-pulled rimmed, lid nested inside, long necked bowl (T-16). It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished

for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
Comp.: Moore 1993: Fig. 39 No. 95 Level 1.2
38. 34020-6: Simple, outward-pulled rimmed, lid nested inside, long necked bowl (T-16). It is composed of little chalk, mica, sand, moderate stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is brown (7.5 YR 5/4), dark gray (10 YR 3/1), brown (7.5 YR 5/3) for outside and brown (7.5 YR 5/4) for inside. (H 3)
Comp.: Moore 1993: Fig. 37 No. 88 Level 1.1, Fig. 38 No. 92 Level 2.1, Fig. 38 No. 93 Level 2.1a, Fig. 39 No. 99 Level 1.2.
39. 20013-10: Simple, outward-pulled rimmed, lid nested inside, long necked bowl (T-16). It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)
Comp.: Sagona and Sagona 2004: Fig. 131 No. 13

<u>Fig.5.</u>

40. 24014-5: Outward-pulled and outward-thickening rimmed, concave, long necked bowl (T-17). It is composed of little chalk, mica, moderate sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4), reddish brown (2.5 YR 4/3) for outside, dark gray (10 YR 3/1) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 33 No. 4; Mitchell 1980: Fig. 43 No. 563 Medieval I; Redford 1998: Fig. 3:9 C; Ertem 1982: Fig. 46 No. 48, Fig. 46 No. 69.
41. 24012-6 Outward-pulled and outward-thickening rimmed, concave, long necked bowl (T-17). It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 33 No. 4; Mitchell 1980: Fig. 43 No. 563 Medieval I; Redford 1998: Fig. 3:9 C; Ertem 1982: Fig. 46 No. 48, Fig. 46 No. 69.
42. 13001-13: Simple, outward-pulled rimmed, concave, long-necked bowl (T-17). It is composed of little ceramic powder, plant seed, moderate stone, mica added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is yellowish red (5 YR 5/6) and dark brown (7.5 YR 3/2), brown (7.5 YR 5/3) for outside and brown (5 YR 5/4) for inside. (H 7)
43. 24008-4: Outward-pulled and outward-thickening rimmed, concave, long necked bowl (T-17). It is composed of little ceramic powder, moderate stone, mica, sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Multi coloring is common for outside. Cement color is yellowish red (5 YR 46), dull red (10 R 4/3) for outside reddish brown (5 YR 5/4) for inside. (H 7)
44. 24008-1: Simple, outward-pulled rimmed, concave, long-necked bowl (T-17). It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside, brown (5YR 5/4) for inside. (H 3)

Comp.: Tekinalp and Ekim 2005: Fig. 37 No. 6; Sagona et al., 1995: Fig. 6 No. 5; Redford et al., 2001: Fig. 39 No. 2.
45. 24012-3: Outward-pulled, chamfered rimmed, concave, long-necked bowl (T-17). It is composed of little chalk, mica, ceramic powder, moderate stone, intense sand added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is yellowish red (5 YR 5/6), some are dark gray (2.5 Y 4/1), light gray (5 Y 7/2) for outside and light gray (10 YR 7/2) for inside. (H 7)
46. 29008-1: Simple, outward-pulled rimmed, concave, long-necked bowl (T-17). It is composed of little chalk, quartz, moderate stone, mica, sand added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is brown (7.5 YR 5/4), yellowish red (5 YR 5/6) for outside, reddish brown (5 YR 5/4) for inside. (H 3)
Comp.:
47. 34024-1: Simple, outward-pulled rimmed, concave, long-necked bowl (T-17). It is composed of little chalk, mica, sand, ceramic powder, chaff, moderate stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is dark brown (7.5 YR 5/6), brown (7.5 YR 5/4) for outside, red (2.5 YR 5/6) for inside. (H 2)
Comp.: Tekinalp and Ekim 2005: Fig. 31 No. 4

Fig.6.
48. 15000-4: Outward-pulled and outward-thickening rimmed, slightly concave, long-necked bowl (T-18). It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)
Comp.: Sagona and Sagona 2004: Fig. 125 No. 3
49. 18016-7: Outward-pulled and outward-thickening rimmed, slightly concave, long-necked bowl (T-18). It is composed of little quartz, sand, ceramic powder, moderate chalk, intense stone, mica added, moderately cooked cement, fine, compact and nonporous. It is thin coated for outside, normal coated for inside and polished for both sides. . Cement color is light red brown (5 YR 6/4), brown (7.5 YR 5/3) for outside and light brown (7.5 YR 6/4) for inside. (H 5)
Comp.: Tekinalp and Ekim 2005: Fig. 33 No. 9
50. 35012-22: Simple, outward-pulled rimmed, slightly concave, long-necked bowl (T-18). It is composed of little ceramic powder, moderate stone, mica, sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Cement color is red (5 YR 4/6), dull red (10 R 4/3) for outside reddish brown (5 YR 5/4) for inside. (H 7)
Comp.: Sagona and Sagona 2004: Fig. 110 No. 10, Fig. 113 No. 4; Sevin 1995: Fig. 49 No.1.
51. 23033-1: Simple, outward-pulled rimmed, slightly concave, long-necked bowl (T-18). It is composed of little chalk, quartz, mica, chaff, moderate sand, intense stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is yellowish red (5 YR 4/6), light grayish brown (2.5 Y 5/3) for outside, dark grayish brown (2.5 YR 4/4) for inside. (H 6)
52. 23026-9: Simple, outward-pulled rimmed, slightly concave, long-necked bowl (T-18). It is composed of little chalk, ceramic powder, moderate mica, intense sand added, well cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides.

Cement color is dark gray (7.5 YR 3/1), grayish brown (2.5 Y 5/2) for outside, dark grayish brown (10 YR 4/2) for inside. (H 1)
53. 35012-7: Outward-pulled and outward-inclined cut rimmed, slightly concave, long-necked bowl (T-18). It is composed of little chalk, mica, moderate stone, sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4), reddish brown (2.5 YR 4/3) for outside, dark gray (10 YR 3/1) for inside. (H 3)
Comp.: Sevin 1995: Fig. 49 No. 2.
54. 14000-5: Simple, outward-pulled rimmed, slightly concave, long-necked bowl (T-18). It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 20 No. 10
55. 35007-32: Simple, outward-pulled rimmed, slightly concave, long-necked bowl (T-18). It is composed of ceramic powder, moderate stone, mica, sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and polished for inside. Multi coloring is common for outside. Cement color is yellowish red (5 YR 4/6), dull red (10 R 4/3) for outside and reddish brown (5 YR 5/4) for inside. (H 7)
Comp.: Moore 1993: Fig. 39 No. 98 Level 1.2, Fig. 40 No. 100 Level 3.3.

Fig.7.

56. 16026-15a: Outward-thickening rimmed, concave, long-necked cube (T-19). It is composed of little stone, chalk, sand, moderate mica, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and unpolished for inside. Cement color is reddish brown (2.5 YR 4/3) reddish (10 R 4/6) for outside, reddish brown (5 YR 5/3) for inside. (H 5)
57. 24008-11: Outward-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little chalk, chaff, moderate mica, intense stone, sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated for outside and normal coated and polished for inside. Cement color is brown (7.5 YR 4/4), dark gray (7.5 YR 4/1) for outside, dark gray (7.5 YR 3/1) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 43 No. 2; Amiranaşvili 1991: Fig. 91 No. 2
58. 24010B-8: Outward-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside and brown (5YR 5/4) for inside. (H 3)
Comp.: Mitchell 1980: Fig. 43 No. 569 Medieval I; Redford 1998: Fig. 3:3 I
59. 16023-5: Outward-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little chalk, moderate stone, sand, intense mica added, moderately and densely cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 5/4), light brown (7.5 YR 6/4) for outside and reddish brown (2.5 YR 6/4) for inside. (H 3)
60. 2000-6: Double-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little stone, chalk, quartz, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (10 YR 4/3), red (10 R 4/6) for both sides. (H 3)

61. 18001-1: Outward-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little chalk, moderate stone, mica, intense sand added, well cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated and unpolished for inside. Cement color is red (10 R 5/8), reddish brown (2.5 YR 5/4) for outside, reddish brown (2.5 YR 5/3) for inside. (H 4)
62. 30004-6: Outward-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little stone, chalk, moderate sand, intense mica added, moderately cooked cement, coarse, compact and less porous. It is normal thin coated and unpolished for both sides. Cement color is brown (7.5 YR 5/4), reddish brown (5 YR 4/4) for outside, reddish brown (2.5 YR 5/4) for inside. (H 3)
63. 43003-2: Double-thickening rimmed, steep, long-necked, cube (T-20). It is composed of little stone, chalk, moderate sand, intense mica added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 5/4), reddish brown (5 YR 4/4) for outside, reddish brown (2.5 YR 5/4) for inside. (H 3)

Fig.8.
64. 24022-4: Churn piece. It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside and grayish brown (10 YR 5/2) for inside. (H 3)
65. 18019-1: It is composed of little chalk, moderate stone, sand, intense mica added, moderately and densely cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 5/4), light brown (7.5 YR 6/4) for outside and reddish brown (2.5 YR 6/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 49 No. 6; Cabaridze et al., 1987: 105, CC 2; Apakidze et al., 1986: fig.LXVI no.5; Koşay 1964: lev.XIII p.55
66. 39007-1: Circular, flat handle (churn handle). It is composed of little chalk, mica, moderate sand, coarse and moderate stone added, moderately cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is brown (7.5 YR 5/4), reddish brown (2.5 YR 5/4) and dark gray (10 YR 4/1), brown (7.5 YR 4/2) for outside and reddish brown (5YR 5/4) for inside. (H 3)
67. 35012-8: Oval vertical handle. It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 31 No. 4
68. 35012-12: Oval vertical handle. It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 28 No. 11; Moore 1993: Fig. 44 No. 168 Level 3.2; Sagona and Sagona 2004: Fig. 132 No. 7.

Fig.9.

69. 23026-13: Ring dip. It is composed of little quartz, mica, sand added, well cooked cement, coarse, compact and nonporous. It is glazed for both sides. Cement color is yellow (5 YR 6/6). (H 8)

70. 22008-1: Ring dip. It is composed of moderate quartz, mica, sand added, well cooked cement, coarse, compact and less porous. It is thin coated for outside and glazed for inside. Cement color is reddish yellow (7.5 YR 6/6), reddish yellow (5 YR 6/6) for outside. (H 8)
Comp.: Redford 1998: Fig. 3:15 N.
71. 28006-1: Ring dip. It is composed of little quartz, mica, sand added, well cooked cement, coarse, compact and nonporous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/6). (H 8)
72. 16021-2: Ring dip. It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
73. 24001-8: Ring dip. It is composed of moderate quartz, mica, sand added, well cooked cement, coarse, compact and less porous. It is thin coated for outside and glazed for inside. Cement color is reddish yellow (7.5 YR 6/6), reddish yellow (5 YR 6/6) for outside. (H 8)
74. 24008-14: Ring dip. It is composed of moderate quartz, mica, sand added, well cooked cement, coarse, compact and less porous. It is thin coated for outside and glazed for inside. Cement color is reddish yellow (7.5 YR 6/6), reddish yellow (5 YR 6/6) for outside. (H 8)
75. 30004-9: Ring dip. It is composed of moderate quartz, mica, sand added, well cooked cement, coarse, compact and less porous. It is thin coated for outside and glazed for inside. Cement color is reddish yellow (7.5 YR 6/6), reddish yellow (5 YR 6/6) for outside. (H 8)
76. 35007-21: Ring dip. It is composed of little chalk, mica, moderate stone, sand, ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4), reddish brown (2.5 YR 4/3) for outside and dark gray (10 YR 3/1) for inside. (H 3)
Comp.: Sagona and Sagona 2004: Fig. 143 No. 10
77. 32019-5: Ring dip. It is composed of little stone, chalk, mica, moderate quartz, sand added, well cooked cement, coarse, compact and less porous. It is glazed for both sides. Cement color is reddish yellow (5 YR 6/8). (H 8)
Comp.: Sagona and Sagona 2004: Fig. 128 No. 11
78. 24001-4: Simple flat dip. It is composed of little chalk, ceramic powder, moderate mica, intense sand added, well cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is dark gray (7.5 YR 3/1), grayish brown (2.5 Y 5/2) for outside, dark grayish brown (10 YR 4/2) for inside. (H 1)
Comp.: Tekinalp and Ekim 2005: Fig. 20 No. 3-4, Fig. 31 No. 1; Mitchell 1980: Fig. 94 No. 1030 Medieval II.
79. 24003-4: Simple flat dip. It is composed of little chalk, quartz, ceramic powder, moderate stone, mica, intense sand added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/3), brown (7.5 YR 5/3) for outside, brown (10 YR 5/3) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 45 No. 8; Sagona and Sagona 2004: Fig. 125 No. 6, Fig. 113 No. 5, Fig. 153 No. 18,
80. 24001-1: Flat, bed plate dip. It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside and brown (5YR 5/4) for inside. (H 3)
81. 34020-4: Ribbon-flat dip. It is composed of little chalk, quartz, moderate stone, mica, sand added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and both sides are polished. Cement color is brown (7.5 YR 5/4), yellowish brown (5 YR 5/6) for outside and reddish brown (5 YR 5/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 41 No. 6; Sagona and Sagona 2004: Fig. 113 No. 6; Mitchell 1980: Fig. 44 No. 596 Medieval I.

Fig.10.

82. 24017: Simple, flat handled lid. It is composed of little stone, chalk, mica, ceramic powder, chaff, intense sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for inside. Cement color is yellowish red (5 YR 5/6), reddish brown (5 YR 5/4) for outside, reddish (2.5 YR 4/6) for inside. (H 7)
Comp.: Tekinalp and Ekim 2005: Fig. 46 No. 6; Moore 1993: Fig. 44 No. 162 Level 2.1b-3.2; McNicholl 1983: Fig. 72 No. 195 KP I; Sagona and Sagona 2004: Fig. 132 No. 4, Fig. 147 No. 3, Redford 1998: Fig. 3:13 A.
83. 24003-7: Simple, flat lid. It is composed of little chalk, chaff, moderate mica, intense stone, sand added, moderately cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated for inside and polished for inside. Cement color is brown (7.5 YR 4/4), dark gray (7.5 YR 4/1) for outside, dark gray (7.5 YR 3/1) for inside. (H 3)
84. 24008-13: Bed plate shaped-lid. It is composed of little chalk, mica, ceramic powder, chaff, moderate stone added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/4) for outside and brown (5YR 5/4) for inside. (H 3)
85. 24014-14: Simple, flat lid. It is composed of little chalk, mica, sand, moderate stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for inside. Cement color is brown (7.5 YR 5/4), dark gray (10 YR 3/1), brown (7.5 YR 5/3) for outside and brown (7.5 YR 5/4) for inside. (H 3)
Comp.: Tekinalp and Ekim 2005: Fig. 48 No. 3-7; Redford et al., 2001: Fig. 41 No. 1; Moore 1993: Fig. 45 No. 180 Level 2.1b Fig. 45 No. 181 Level 1.2; Hauptmann 1987: Fig. 162 No. 7; McNicholl 1983: Fig. 71 No. 189 KP I/II.

Fig.11.

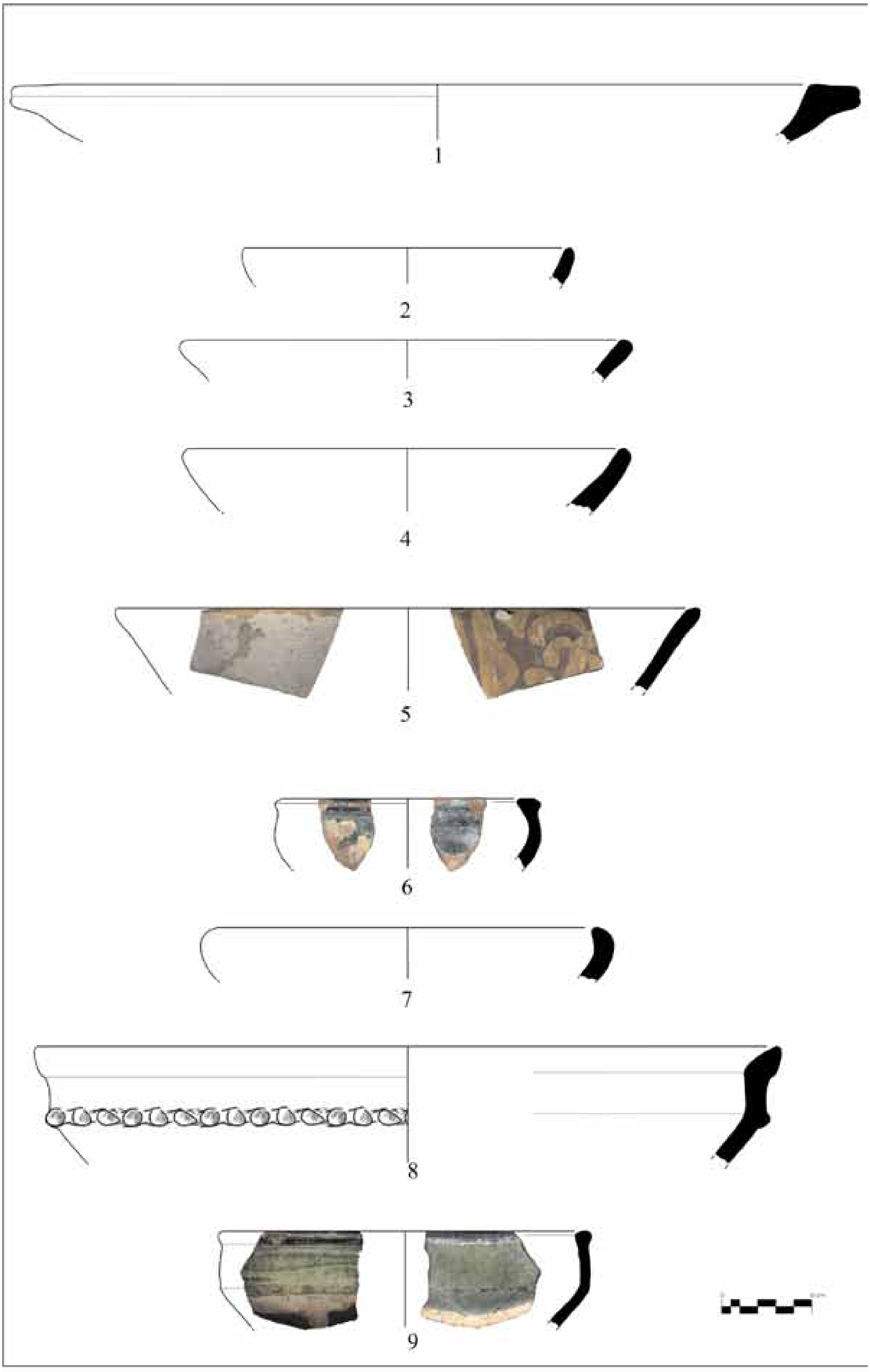
86. 23026-14, 15: Wavy decorated, body piece made of scrapping technique. It is composed of little chalk, mica, sand, moderate stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is brown (7.5 YR 5/4), dark gray (10 YR 3/1), brown (7.5 YR 5/3) for outside and brown (7.5 YR 5/4) for inside. (H 3)
87. 24020-6: Wavy decorated, body piece made of scrapping technique. It is composed of little chalk, mica, sand, moderate stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for both sides. Cement color is brown (7.5 YR 5/4), dark gray (10 YR 3/1), brown (7.5 YR 5/3) for outside and brown (7.5 YR 5/4) for inside. (H 3)
88. 24014-18: Wavy decoration made of scrapping technique and button decorated, body piece made of embossing technique. It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside and thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)
89. 28008-1: Wavy decorated, body piece made of scrapping technique. It is composed of little chalk, ceramic powder, moderate mica, intense stone added, well cooked cement, coarse, compact and less porous. It is normal coated and polished for both sides. Cement color is dark gray (7.5 YR 3/1), grayish brown (10 YR 5/2) for outside, dark grayish brown (10 YR 4/2) for inside. (H 1)

90. 24014-7: Chamfer made of scrapping technique and button decorated, body piece made of embossing technique. It is composed of little chalk, mica, moderate stone, sand ceramic powder added, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is reddish brown (2.5 YR 5/4), reddish brown (2.5 YR 4/3) for outside dark gray (10 YR 3/1) for inside. (H 3)

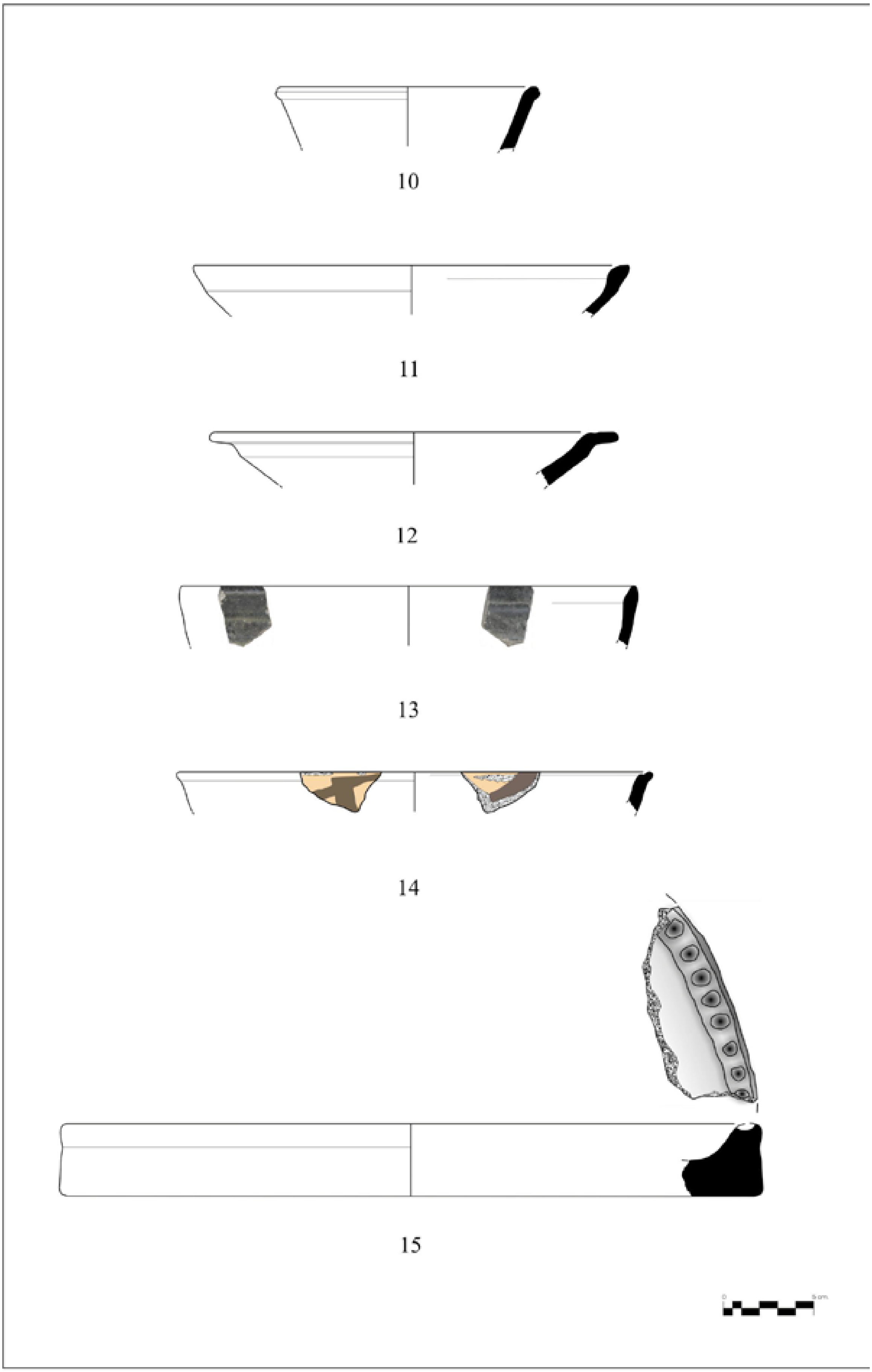
91. 13001-19: Chamfer made of scrapping technique and wavy decorated, body piece. It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)

92. 23026-16: Embossing ribbon decorated body piece. It is composed of little stone, mica, plant seed, moderate chalk, sand, moderately cooked cement, coarse, compact and less porous. It is thin coated and unpolished for both sides. Cement color is brown (7.5 YR 4/4), light brown (7.5 YR 6/3) for outside, reddish brown (5 YR 4/3) for inside. (H 3)

93. 23018-9: Body piece with finder print decorated on embossing ribbon. It is composed of little mica, sand, intense stone added, densely cooked cement, coarse, compact and less porous. It is normal coated for outside, thin coated for inside and polished for outside. Cement color is brown (10 YR 5/3), black (7.5 YR 2.5/1) for outside, grayish brown (10 YR 5/2) for inside. (H 3)



Resim 10



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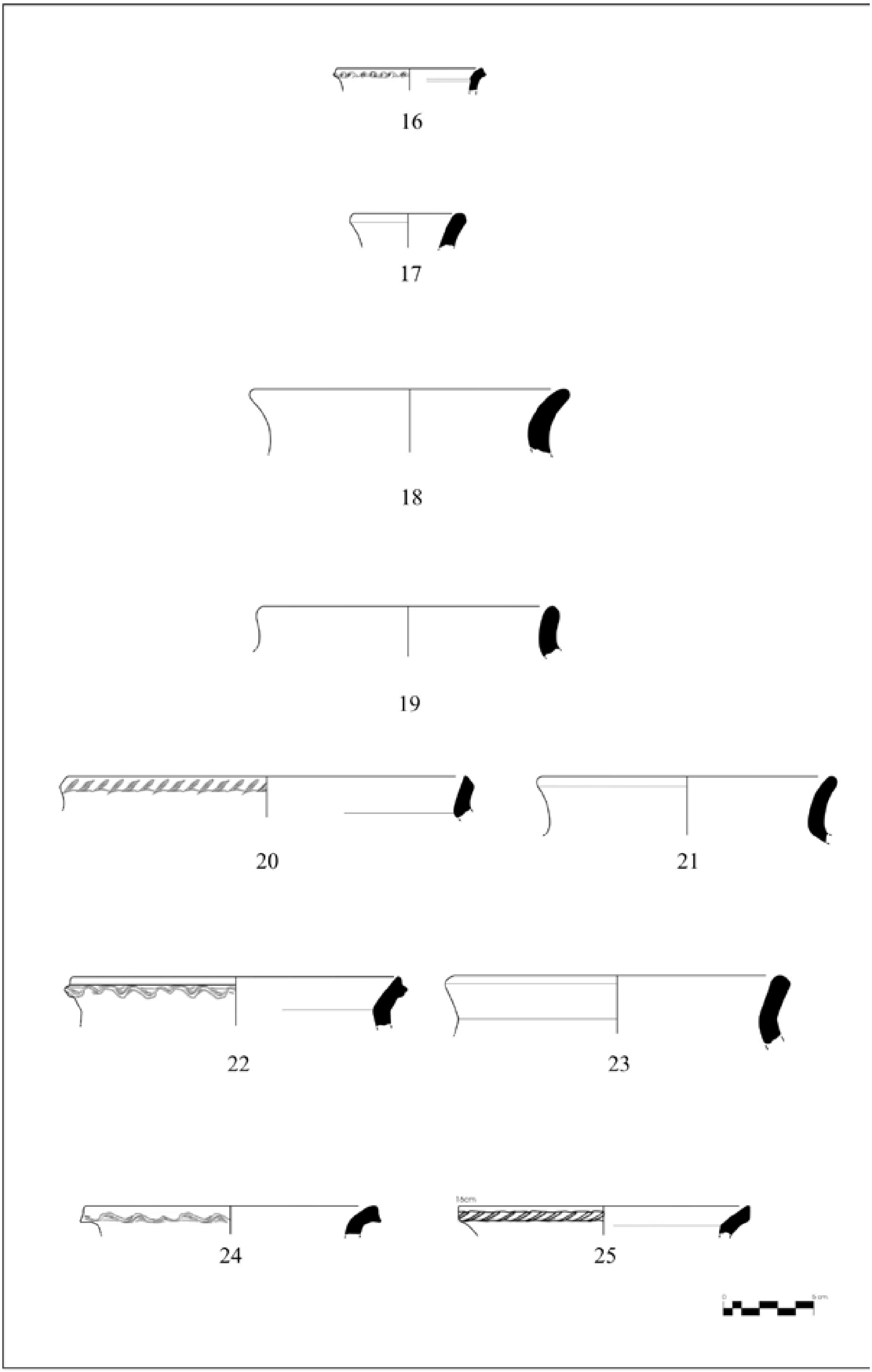

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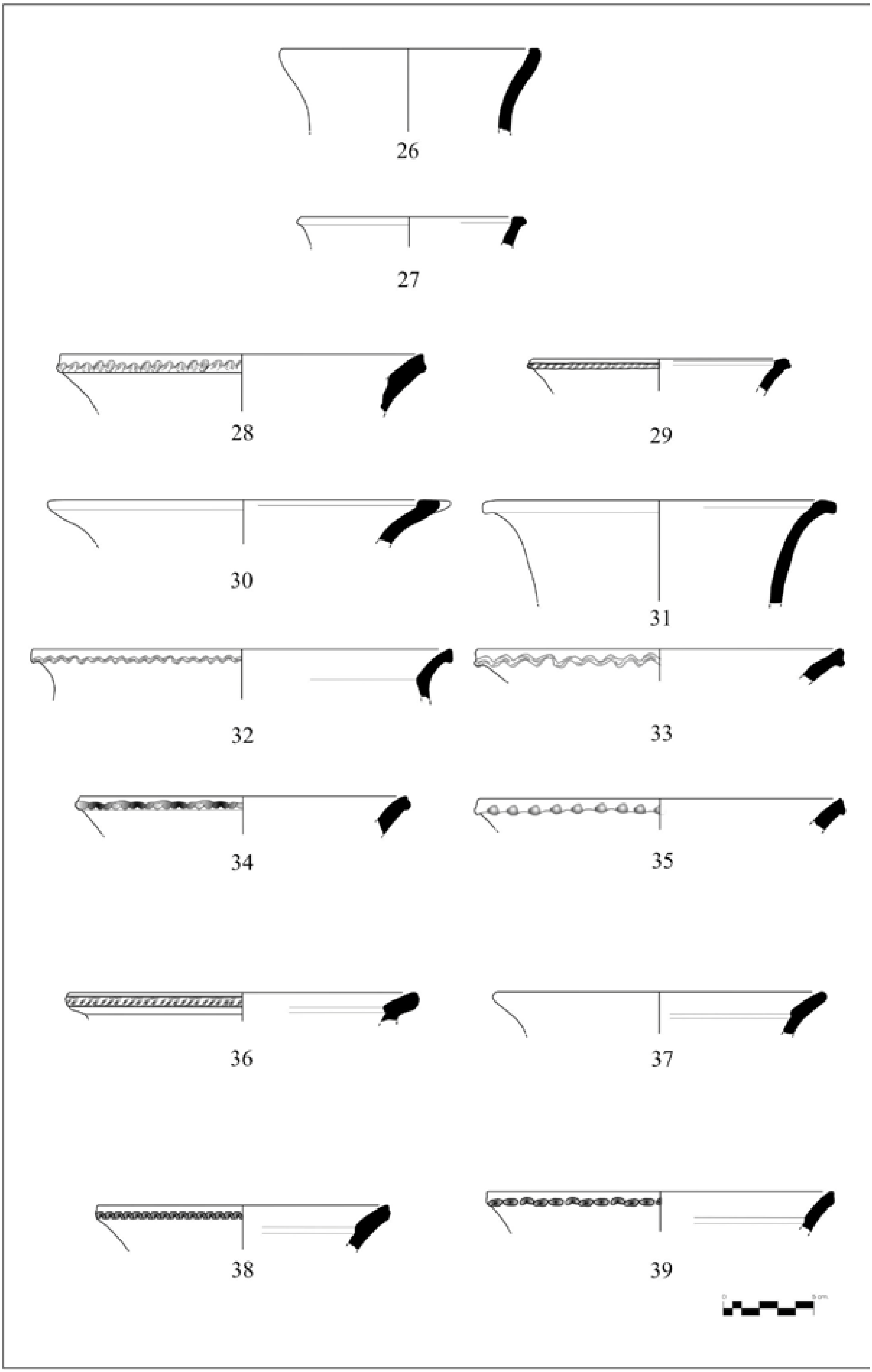

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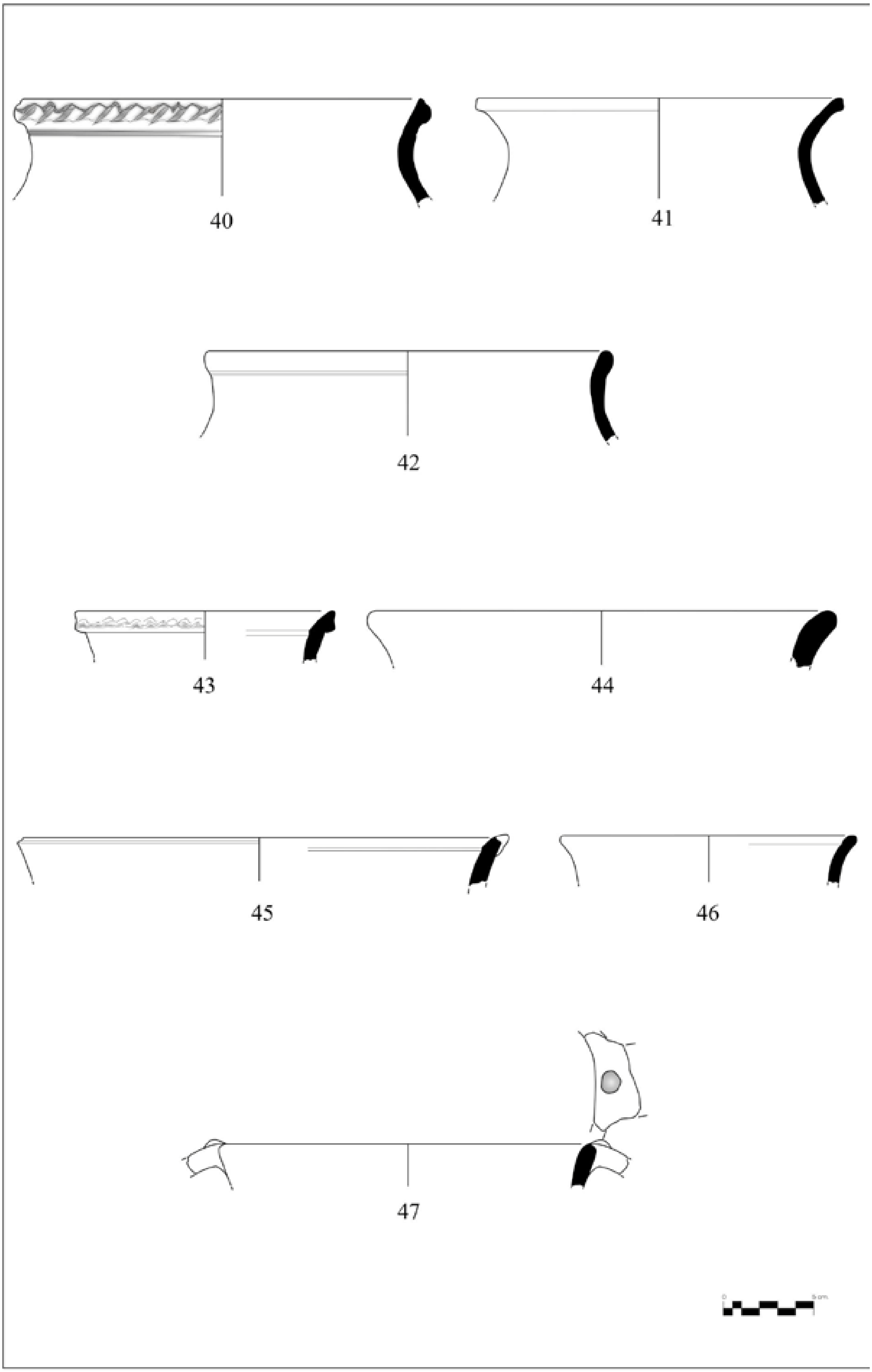

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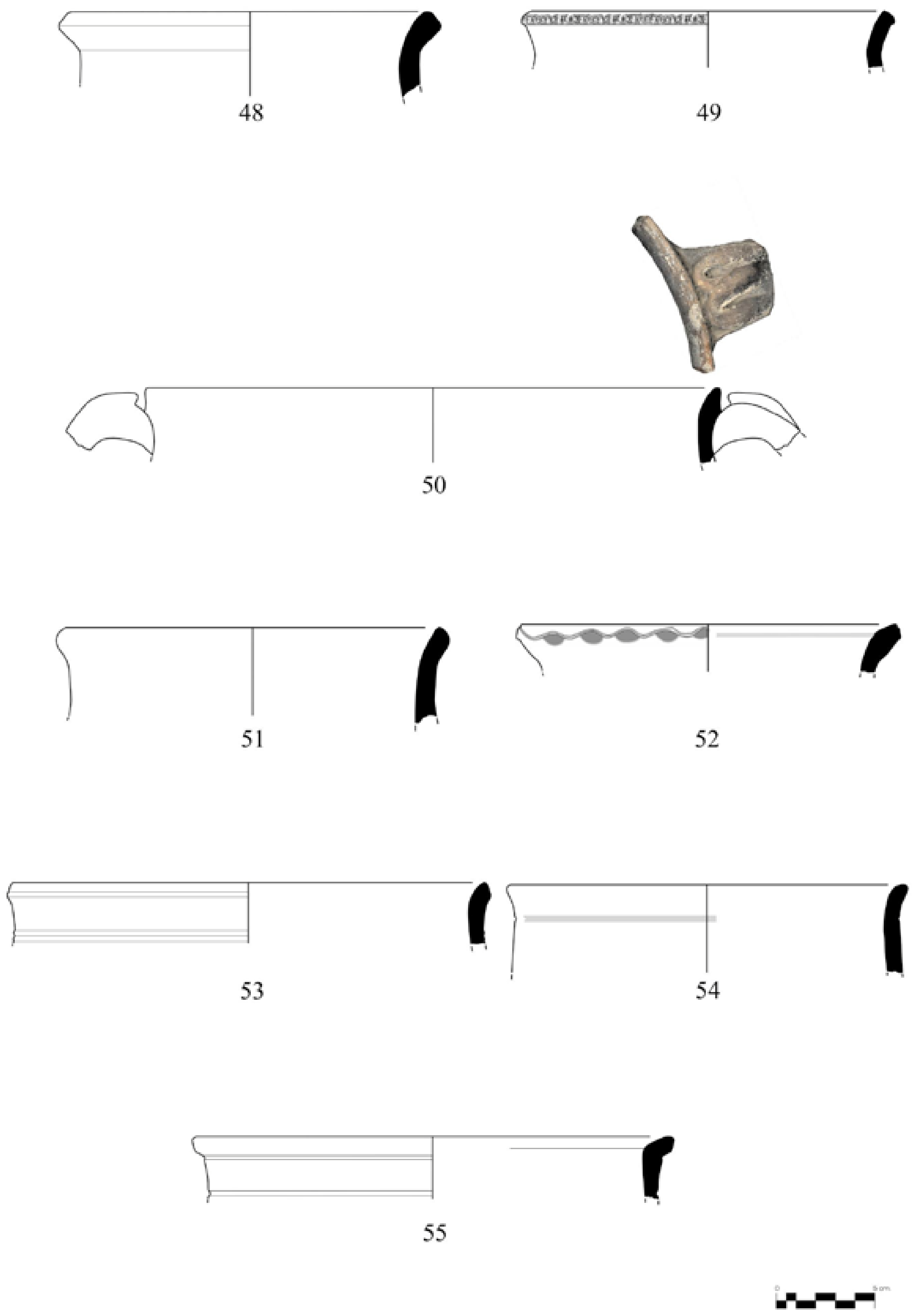

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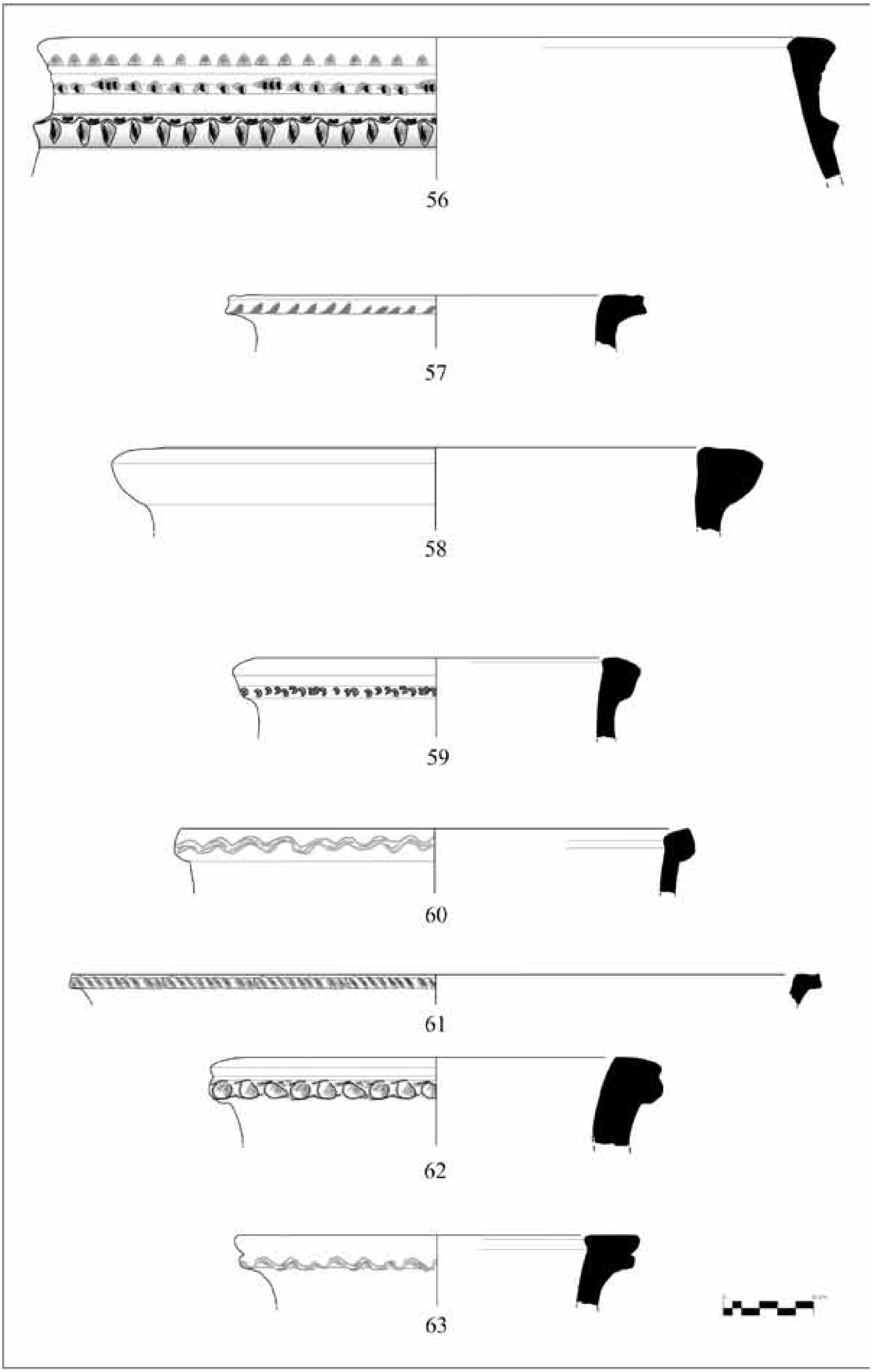
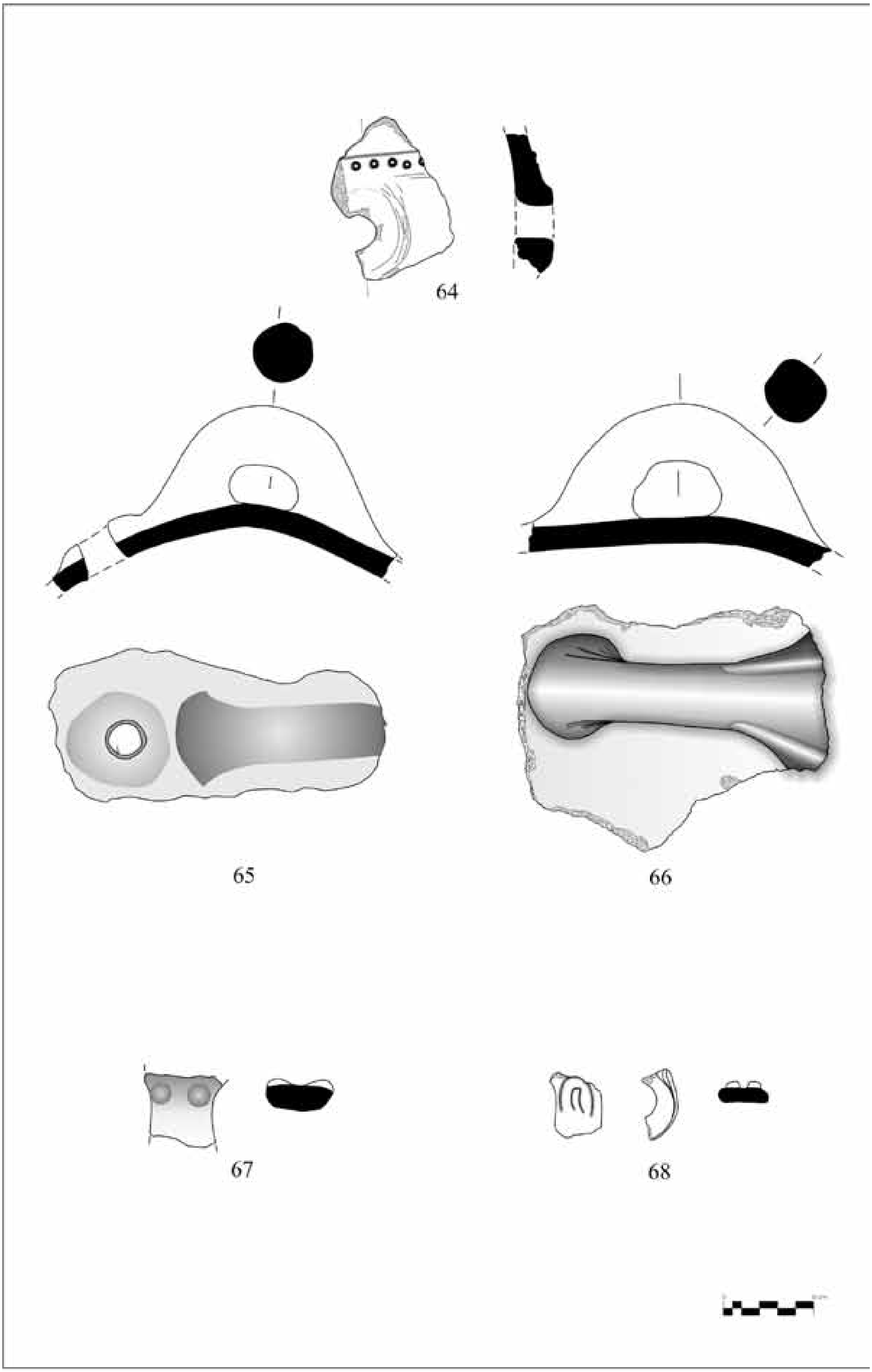
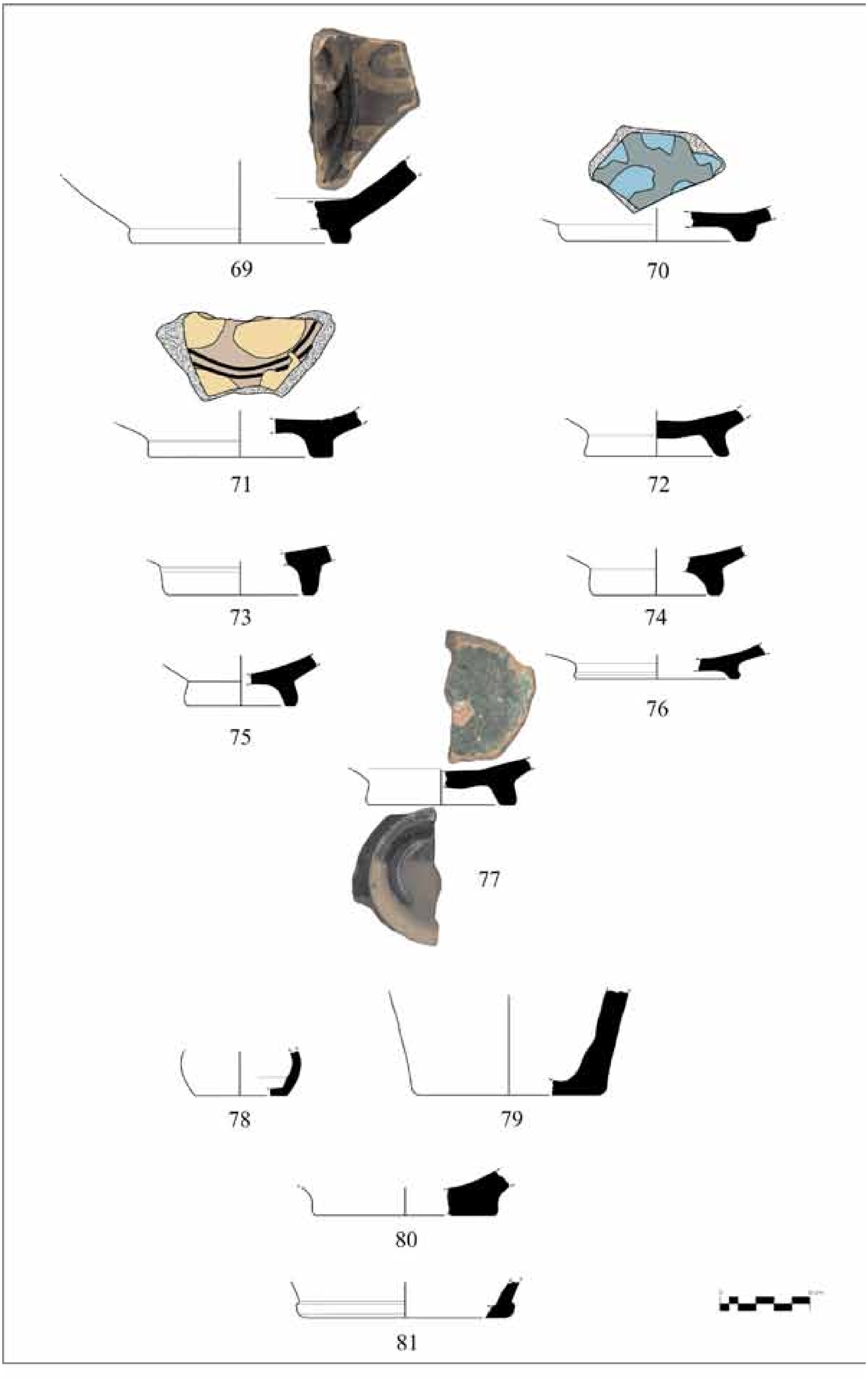


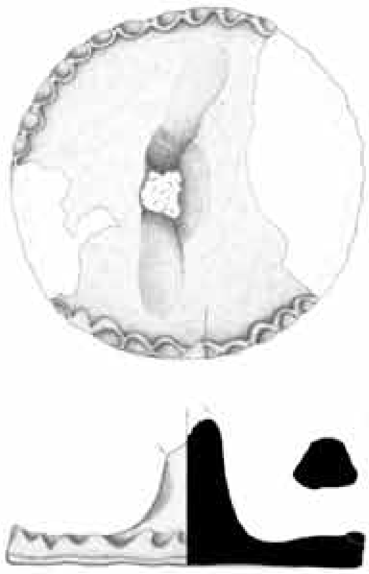
Resim 16



Resim 17



Resim 18



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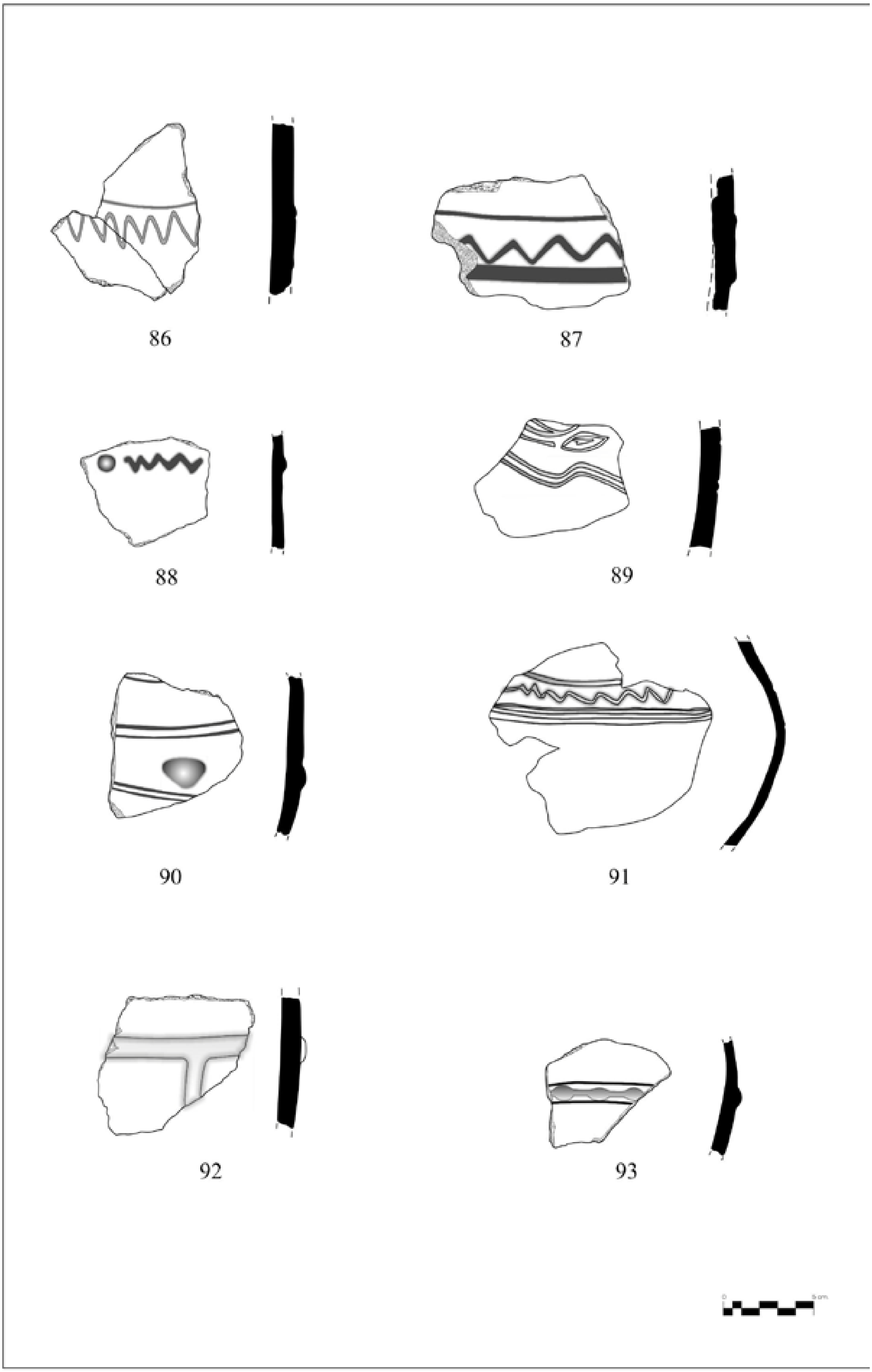
Resim 19



Resim 20

SMALL FINDINGS

COINS[88]

Two Byzantine bronze coins were found in Tasmasor.

Coin 1[89]:

Byzantine Anonymous, A2 Type, Variation 3

A.D. 976 (?) – c. 1030/1035

Front Side: "[+EMMA – NOVHL]", in space "IC – XC". Tunic and himation wearing, bearded Jesus bust with nimbus, from front. He raised his right hand as if he sanctifying, left hand holding the holy bible with ornamented cover. Two points within the arms of nimbus cross. No decoration like the one on holy book.

Back Side: "+IhSЧS / XRIST[ЧS] / bASILE[Ч] / bAS[ILE] ". Four lines of writings, ornament of single point at top and bottom.

Coin 2[90]:

Byzantine Anonymous, C Type

A.D. 1042 (?) – c. 1050

Front Side: "[+EMMA – NOVHL]" L]", in space "[IC – XC]". Tunic and himation wearing, bearded, 3/4 part appearing, standing Jesus bust with cross on this head and nimbus of single point ornaments on the arms, He raised his right hand as if he sanctifying, left hand holding the holy bible with ornamented cover, Antiphonetes type, from front.

Back Side: "IC – XC / NI – KA". Writings on the equally spaced arms of cross, all the arms are decorated and there is a point at the end.

88

89 Grierson 1973: 651-652, var. 3, no. A2.3.1 – A2.3.13, lev. XLIX.

90 Grierson 1973: 681-684, no. C.1-C.48, lev. LX

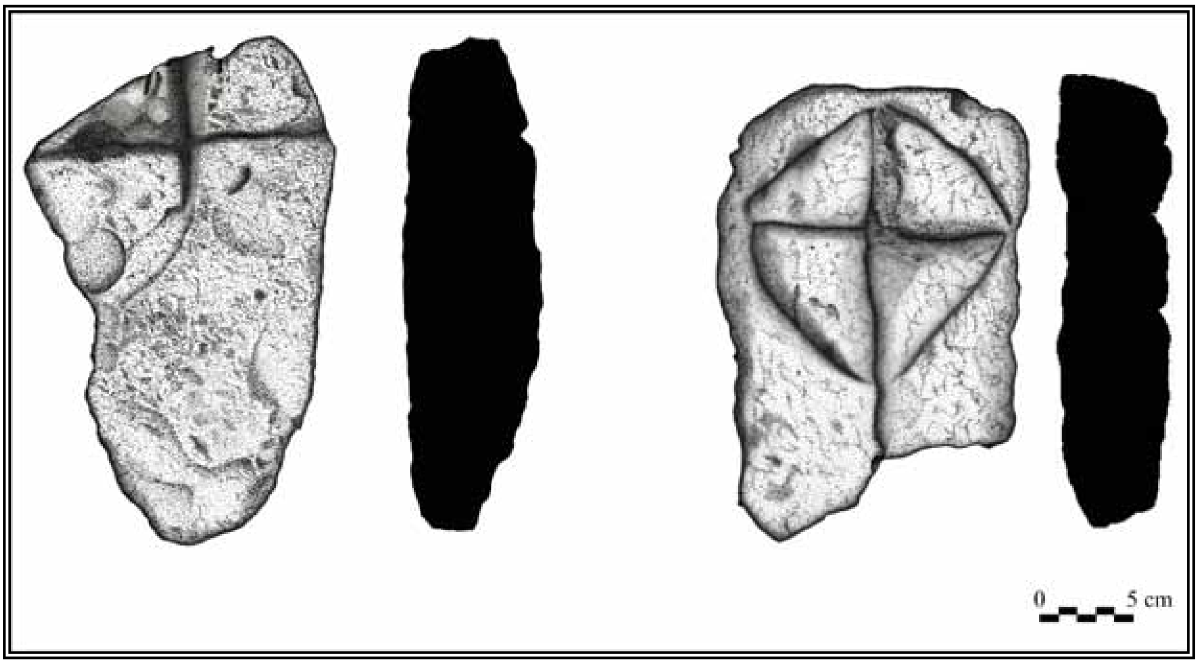
Coin Evaluation:

There is limited number of publications on coin findings of the Eastern Anatolia. Since only two coins were obtained from Tasmasor, a reliable evaluation cannot be made. The two coins obtained were probably in circulation in the same years. Although Anonymous C type coins are printed on the stamps of Anonymous A1, A2 and type coins, these data cannot reveal that when the new coin type was put in circulation the old one was withdrawn from the circulation. The mint reused the stamps of old coins they received but, we know that all old anonymous coins were not withdrawn from the circulation since A, B and C types were obtained form the same contexts during the excavations. Similarly, these coins should be in circulation until politically dominancy of Turks in the region in the years of 1070-1080. Anonymous I type samples that are dated as 1075-1080 are sometimes printed on C type samples[91] may indicate that at least C type anonymous in the capital was in the circulation until 1075. Since only two coins were obtained during the excavation, these samples yield limited information on dating of last stage of excavated building, generally as the middle of 11th century or little younger.

[91] Grierson 1973: 696, No. I.4.

STONE FINDINGS

They are made of coarse limestones. The motif one of the stones which are decorated with scrapped cross motifs, is surrounded with scrapping.



GLASS FINDINGS[92]

Among the glass findings obtained from the Tasmasor excavation, bracelets comprise the most intense group. In addition to bracelets, beads, bed plates and rim pieces are also important in Tasmasor glasses.

Considering their color and sections, bracelets show an important variation. They can be examined under 6 different types as: Circular Sectioned Bracelets without Decoration, Semi-Circular Sectioned Bracelets without Decoration, Triangular Sectioned Bracelets without Decoration, Oval Sectioned Bracelets without Decoration, Circular Sectioned Spiral Bracelets and Spiral Bracelet with Inner Glass Fiber. Some of bracelets have so small sizes that their diameter cannot be measured and those measured have a diameter size ranging from 3.5 to 10 cm. In some samples, considering the trace on the glass surface, it is understood that a previously formed bar was made a bracelet by bending. 12-13th century-dated Gritille glass bracelets are the most similar analogues of Tasmasor bracelets regarding color and form[93].

92

93 Redford: 1998: 177- 179.

Other similar types in Anatolia were obtained from Tille Höyük and Yümüktepe of 10th century.[94]

Among the glass findings, a bracelet (55001, Fig.1) is different from other with its technique. Similar types of above mentioned spiral bracelets with glass fiber are very less. One of these samples was found in Demre and it was dated as 8-12th centuries. In addition, it is known that this type of bracelets was produced in Hebron (Jordon) until the beginning of 20th century.[95]

Limited amount of container pieces found in Tasmasor are composed of bed plates of two different bowls and rim piece of a different bowl. On body of this rim, there is a thick line of glass fiber. By periodically pressing the glass fiber on decoration, decoration was mobilized (24018, Fig 2). One of bed plate pieces belongs to bowl. This piece was outward-folded at the lower part and then periodically pressed on its fold site (29018, Fig. 3). In lower part of 23016 no (Fig. 4) flat bed plate, two lines of glass fibers were wavy applied. These three pieces are noticeable with their thick walls. The piece of rim and bowl plate is dark brown and other bed plate is green colored. Wavy, thick glass fiber decoration, which is generally applied to bottles as shown in samples of different colors from Qasr al-Hayr in 9th century, are found in Anatolia in remnants of Melik Mahmud Gazi Hangahı in Aksaray (Seljuk period). Similar color and decorated types are in Hama of 14th century.[96] In addition to Syria and Anatolia findings, similar colored and decorated samples were obtained in 11-12th century glass findings in Kiev that is not geographically distant from Erzurum.[97].

Beads comprise another glass finding group. Blue-green and colorless limited number of all the beads is perforated. One (29006) of these beads is noticeable with its height and diameter.

Among the Tasmasor glass findings, bowl pieces are not so much. These limited number of bowl pieces is composed of decorated pieces. Other glass findings obtained is the ornament objects with the highest number. Among the findings, there is object relevant to kitchen use. The low number of glass findings and the absence of glass wares for daily use may indicate that the use o glass in Tasmasor was not common. In the frame of these findings, these glasses are imported since there is no indication of glass production. Glasses were found in Medieval Age structure that yields 10-12th century findings. Although the closest analogues

[94]Moore 2002: 360- 361; Köroğlu : 355- 372.
[95]Çömezoğlu 2001: 368-369; Korfmann 1966: 48- 51.
[96]Salam-Leibch 1978: 61.4; Deniz 1997: 597; P.J.Riis: 1957: 60- 61.
[97]Shelkovnikov 1966: 98- 99.

are found in Syria and Eastern Mediterranean that are important places for glass production in the Medieval Age, their similarity to Kiev findings is noticeable, where the presence of glass workshops that were used in 10-12th centuries are known.

On the basis of their analogues, Tasmasor glass findings can be dated to 10-12th centuries.

CATALOGUE

1- Bracelets

a-Circular Sectioned Bracelets without Decoration:

18017: Diameter: ?. Brown. Device trace on the connection site

24025: D: 8 cm. Dark blue. Device trace on the connection site (Draw 1)

24031: D: 7 cm. Brown. Device trace on the connection site (Draw 2)

22007: D: 10 cm. Dark blue. (Draw 3)

18004: D: 5.5 cm. Dark blue.

23019: D: 6 cm. Black. (Draw 4)

23014: D: 6.8 cm. Brown. (Draw 5)

23017: D: 7 cm. Dark blue. (Draw 6)

23027: D: 7.5 cm. Blue. (Draw 7)

28007: D: 6 cm. Dark blue. (Draw 8)

24027: D: 7 cm. Black. (Draw 9)

41002: D: ?. Dark green

42002: D: ?. Dark blue

b- Semi-Circular Sectioned Bracelets without Decoration:

20002: D: ?. Green-yellow

15032: D: ?. Dark blue

23007: D: 4.5 cm. Due to alteration, color cannot be distinguished. (Draw 10)

c-Triangular Sectioned Bracelets without Decoration:

21008: D: 3.5 cm. Black. (Draw 11)

27005: D: ?. Black

32017: D: ?. Light green. There are some alterations on the surface.

22006: D: ?. Dark blue

30004: D: ?. Yellow

21003: D: ?. Due to alteration, color cannot be distinguished.

d-Oval Sectioned Bracelets without Decoration:

23013: D: ?. Dark blue

28005: D: ?. Dark blue

38004: D: ?. Dark blue.

40010: D: ?. Dark blue

e- Circular Sectioned Spiral Bracelets:

29015: D: 8 cm. Dark blue (Draw 12)

22002: D: 6.5 cm. Purple. It has a tight spiral form. (Draw 13)

14021: D: 7 cm. Yellow. (Draw 14)

f-Spiral Bracelet with Inner Glass Fiber:

55001: D: 6 cm. Yellow colored, it was made with spiral method, by wrapping colorless glass around the glass fiber. (Draw 15, Fig. 1)

2- Rims and Bed Plates

24018: D: 5 cm. K: 0.2- 0.4 cm. Dark brown colored, conical rim piece. A wavy ribbon on the body was formed by periodically pressing the glass fiber that has the same color of container (Fig. 2).

29018: D: 5.5cm. K: 1.3 cm. Dark brown bowl plate piece. It is ended with outward folding at the lower level. Outward-folded part is periodically pressed and folded site was mobilized as waves (Fig. 3).

23016: D: 7 cm. K: 0.6 cm. Green colored, flat bowl plate piece. Where the bed plate is ended at the bottom of container, two thick glass fiber lines were applied as wavy decorations (Fig. 4).

3- Bead

29006: D: 1.5 cm. Y: 1.2 cm. K: 0.3- 0.25 cm. It has an irregular form of blue-green color. Alterations are shown on the outer surface (Fig. 5).

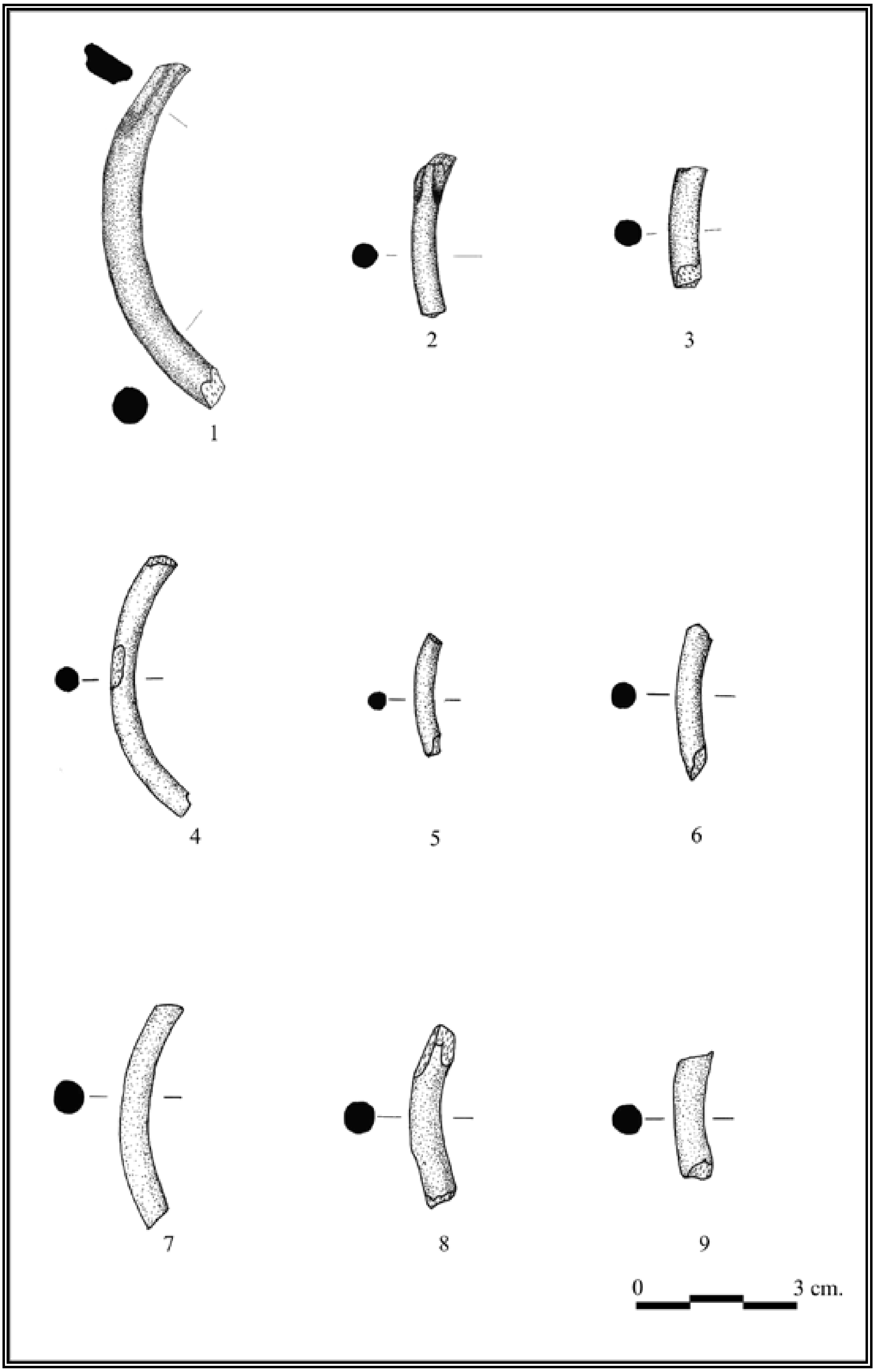


Figure 23: Glass Finds

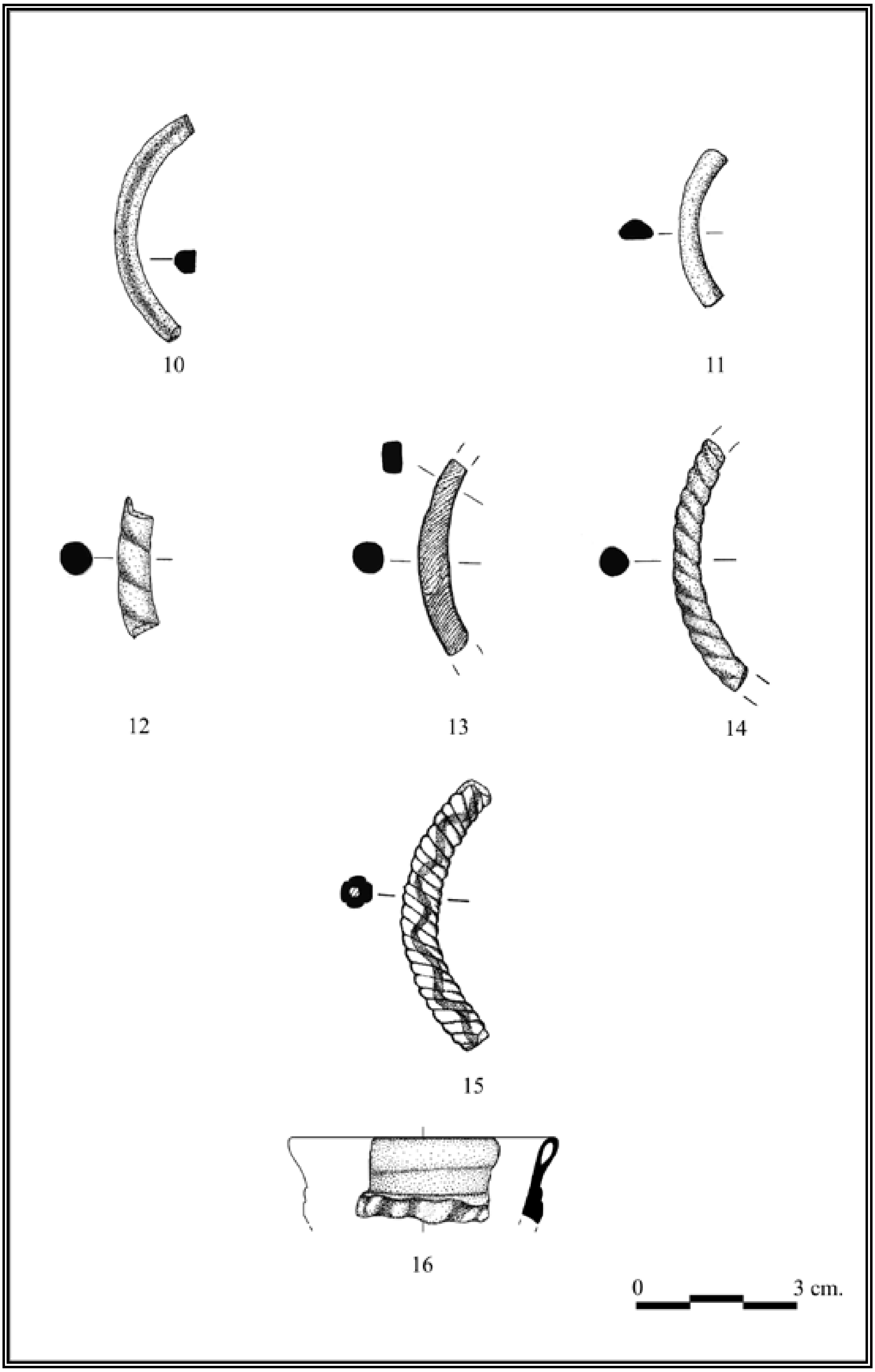


Figure 24: Glass Finds

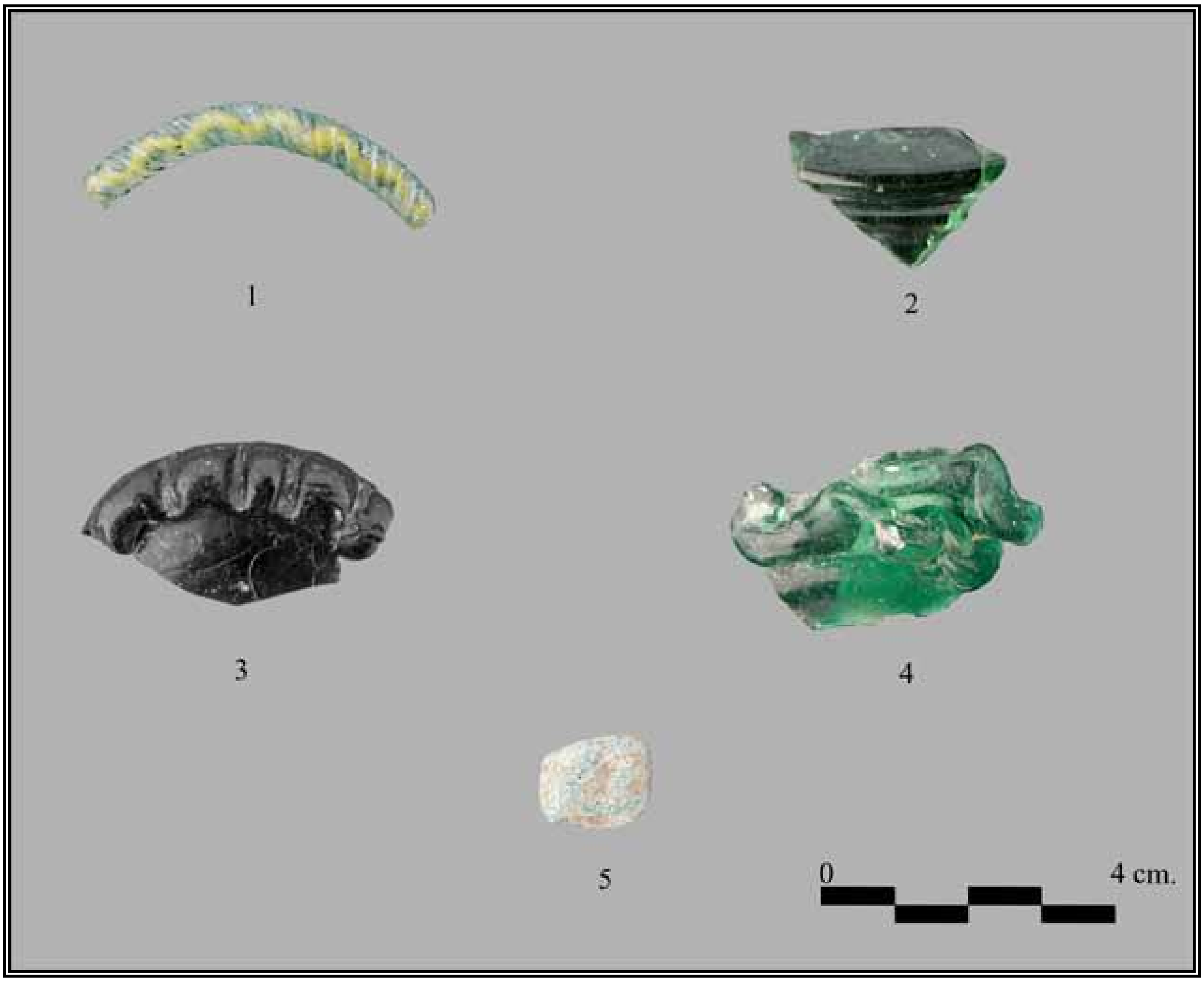


Figure 25: Glass Finds

EVALUATION

Most of the Medieval Age ceramics parsed in Tasmasor are composed of unglazed, daily use containers. Most of very few glazed ceramics are decorated with slip technique and only one piece was processed with Sigraffitto technique.

The closest Medieval Age center to Tasmasor is Ani Kent at east of Kars city which is known with excavations. Glazed ceramics found there has a low ration among the all ceramic repertory.[98]

Due to insufficient archeological studies for the analog of Tasmasor Medieval Age ceramics and the absence of a center to comparison, except for intense archeological surface investigations in the region, the surroundings areas were utilized. Comparison for the excavation centers around the Keban, Karakaya and Atatürk dams on the Fırat river at south of region was made with the Caucasus samples at the north and comparison for glazed ceramics was made with Nişabur and Semarkant samples. Moreover, considering the excavations conducted in the frame of BTC HPBH[99] Project and relations between Tasmasor and Caucasus, Medieval Age ceramics found in excavations in some centers in the territory of Georgia were also compared.

The Medieval Age ceramics found in the surface investigations conducted by A Sagone and his team between Bayburt and Erzurum and also Medieval Age ceramics from the Pulur settlement and the Sos Höyük in Erzurum played important role in understanding of Medieval Age layer of Tasmasor.

In Pulur, there is limited information on the Medieval Age layers that area not differentiated in detail. On the surface of Höyüks, that has not been evaluated for the Medieval Age layer, a coin of Byzantine period as obtained.[100] Similar types of the anonymous C group coin and the handle of a flat type container were also found in Tasmasor.

A three-stage[101] Medieval Age layer was found in the Sos Höyük that is located in the Yiyittaşı village of the Pasinler town of Erzurum. Most of ceramics obtained from this later

[98] Çubinov 1916; Şelkovnikov 1957; 1958; Turan 1997; Yazar and Değirmenci 1998.

[99] Among the seventeen excavations, in seven of them including Tasmasor conducted in the frame of BTC HPBHP, Medieval Age layers were determined. These excavations are Minnetpınarı and Geben in the Andırın town of Kahramanmaraş city, Akmezar and Çilhoroz in Tercan town of Erzincan city, Çayırtepe village in the center of Erzurum, Güllüdere excavation in the Aşkale town and Sazpegler excavation in the Damal town of the Ardahan city. Publishing studies about these excavations are still continued.

[100] Coin of 1042 (?)- 1050 years can be evaluated in the Anonymous C group (Koşay and Váry 1964: 45 P. 691, Plate XI, P. 691; Grierson 1973: 3/ 2 681 no. C1f (1042 ?- 1050)).

[101] Sagona et al., 1995: 200; Sagona et al., 1996: 27- 29

are unglazed.[102] The Medieval Age layer (I) of the Sos Höyük is dated as A.D. 1100-1300.[103] With respect to cement and typical features, the ceramics parsed in Tasmasor are similar to those in the Sos Höyük.

In the frame of Keban Dam rescue excavations in 1968-1972, archeological studies were conducted in Aşvan Castle in the territory of Elazığ. Three Medieval Age layers were found in this settlement.[104]

Coin, ceramic findings and architectural remnants obtained from the 1st Medieval Age layer are dated to 10 and 11th centuries.[105] Limited amount of sigrafitto glazed ceramics obtained in this layer were very important for dating of İmikuşağı Medieval Age layers. On the basis of this type of ceramics and the method used in İmikuşağı, only one piece of glazed ceramics from Tasmasor is of sigrafitto technique and it is possible so say that Tasmasor is contemporary with the 1st Medieval Age layer of the Aşvan Castle. Two anonymous A2 and C group coins found in Tasmasor support these historical data.

In 12 and 13th century dated 2nd Medieval Age layer[106], workshops and ceramic ovens were explored that were used for ceramic production. Layering on the basement and additions within the rooms at different stages indicate that they have been sued for long years.

There are also a group of Byzantine coins that yield important evidence for dating of ceramic ovens.

Although coins obtained here individually indicate a minting date of second quarter of 11th century, they could be in circulation more than a half century. However, considering that a bronze coin from a young group such as Type G (1067- 1071) was found a hole that was formed during the striping and removal of wall stones of the 1st Medieval Age layer in H5 opening, that coin, which indicates a short period, can be thought to be in circulation for a long time comprising the Medieval Age layer.

Two İlhanlı coins found in the 3rd Medieval Age layer, which belongs to 13th century or later, are dated for the years of 1306-1335. A stove exposed next to southern wall of this structure is dated as 16 and 17th centuries.

A total of nine pieces from the Aşvan Castle are typologically similar to ceramics parsed in Tasmasor. Among them, seven are similar to 5th Medieval Age layer and five are

[102] In Sos Höyük, very few glazed ceramics were found (Sagona et al., 1995: 200, Fig. 6:6)
[103] Sagona and Sagona 2003: Table 1. These layers found in the Sos Höyük ethnography study were dated as 13th century (Hopkins 2003: 83).
[104] Mitchell 1980: 50- 60
[105] Mitchell 1980: 255
[106] Mitchell 1980: 49- 55

similar to 2nd Medieval Age layer.[107] In addition, 1st layer where sigrafitto glazed ceramics are rarely found may be an analogue of Tasmasor's first layer.

Taşkun Castle in the territory of Elazığ city was excavated in the frame of Keban dam rescue excavations. Ceramics found in the castle on the Höyük generally belong to 1200 and 1400 years. However, this 200-year period historically comprises a wider period than the time for which the castle was used. Therefore, only the coins can provide exact dates. Typologic analogues of two of the coins parsed in Tasmasor are found in Taşkun Castle. Ceramics with known analogues are the pieces that are qualified as common type and were used along the Medieval Age. One of the ceramics belongs to KP I layer while another is evaluated between the KP I-II layer.

The Han İbrahim Şah Höyük that was excavated in the frame of Keban dam rescue excavations is 40 km NW of Elazığ. Two Medieval Age layers, named as Ia and Ib, were found in the settlement.[108]

The first layer (Ia) belongs to Seljuk period and the second is dates as Byzantine period. Most of the ceramic obtained in the first layer are "broad kitchen type containers and in black and tile colors". In the second layer, "green glazed and decorated pieces and brown, tile red and purple brown painted ornamented pieces on a light brown basement" and a weakly preserved coin belonging to I. Ioannes Tzimiskes Period (969- 976) were obtained.[109] Analogues of two Tasmasor ceramics were encountered here. These pieces are kitchen containers that are qualified as general type.

The İmikuşağı Höyük that was excavated in the frame of Keban dam rescue excavations is in the territory of Elazığ city. In the studies conducted in 1981-1982 years, three Medieval Age layers were explored. Ceramic findings obtained from the Medieval Age layers are contemporary of Aşvan Castle Kale Medieval Age I, Pirot Höyük II and Han İbrahim Şah I- II. Layers and, they are dated as the same or later of the 1st Medieval Age layer which is of third quarter of 11th century.[110] Among the three coins obtained in the excavation, the one with early date is Anonymous B (1030/ 35-1042) and the second is of Anonymous C group, IX. Konstantin Monomakhos Period (1042-1055). Short period Medieval Age layers with no large time gap between them, are dated as a little before the I. Medieval Age layer of Aşvan.[111] Similar types of three ceramics parsed in Tasmasor were found in İmikuşağı.

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[107] Mitchell 1980: no. 1359
[108] Ertem 1972: 64
[109] Ertem 1982: 8
[110] Sevin 1995: 111
[111] Sevin 1995: 113

Tille Höyük is in the territory of Adıyaman city. In the excavation works conducted the frame of Aşağı Fırat Project in 1980-1984, three floors of Medieval Age structure were determined.

There are three of Medieval Age layers in Höyük and two large holes are the only remnant for the oldest layer, called as 1st layer. Due to complexity of coins obtained from this layer, a complete dating is difficult. Three 11th century dated Byzantine coins were explored.[112] These coins found in the first layer are not consistent with ceramics determined in this layer.[113] The 2nd layer, a group of material consisting of Rakka ceramics was found. This layer is dated as the middle of 13th century. Although 3rd layer is dated as the second half of 13th century due to a coin, it is though that its date may be up to middle of 15th century.[114]

Medieval Age layers of the Tille Höyük show a complex structure and the historical inconsistency for the coins and ceramics found in the layers causes some difficulties in dating. However, ceramic findings obtained from the Höyük indicate that Medieval Age settlement was started at the middle of 12th century.[115]

A typologic similarity was established between Tasmasor and Tille Höyük on the basis of eighteen pieces.[116] Nine of these pieces belong to 1st layer and 3 belong to the 2nd layer.

Gritille is located just northeast of Samsat which was the most important Medieval Age center in the Karababa basin. Due to closeness to Samsat, the settlement is connected to this center regarding politic and trade aspects.

A number of eight Medieval Age layers were determined in Gritille. The first layer is dated as at the beginning of 11th century. The second layer with a few ceramic is a weak settlement belonging to Byzantine period. The third layer was determined as a city wall of the Crusades period that was ended with a fire dated to be 1148. Within the layers of this wall, a treasure of Crusades coins was found.[117] The forth layer is a settlement with no city wall with a date of 1148-1150 years. During this period, it should have been developed with people from Lidar Höyük which was stronger Medieval Age settlement nearby.[118] The fifth and sixth layers determined on the foot of Höyük belong to the Artuklu period[119] of 1150-1202 during which the city wall was not used. During this stage, import materials from Iran and Syria are observed. The glazed ceramics in which sgrafitto is also included are seen in these layers

[112] Moore 1993: 179- 180
[113] Moore 1993: 205
[114] Moore 1993: 205
[115] Moore 1993: 199
[116] Of these ceramics, layer of four of them is uncertain.
[117] Redford 1998: 271
[118] Redford 1998: 271
[119] Redford 1998: 271- 272

which are dated as after the 1150 and, their widest use is observed in the layer belonging to seventh period during which the region was ruled out by the Eyyubi.[120] In this period, Höyük was resettled. Although the weakly preserved two-stage eighth and the last layer has some small differences from the seventh layer[121], its starting date should be 1220-1230[122].

In Gritille, a similarity was established between the ceramics parsed in Tasmasor and eight containers[123]. Sigrafitto glazed ceramics which started to be shown in fifth and sixth layers of Gritille indicate that it is cotemporary with the Medieval Age layer in Tasmasor.

There is a similarity between the two general containers from the Kinet Höyük on the Mediterranean coast and types parsed in Tasmasor. They are cooking pots that are well known for the Medieval Age and dated as the 13th century.

"Bayburt Plain Surface Investigation" was conducted in a region comprising Bayburt at east and around Çorum at north and continuing thorough the Kelkit valley at west and settlements in small valleys connecting to the Kelkit valley. A part of Medieval Age ceramics found in these studies was compared to ceramics parsed in Tasmasor. A typologic similarity was set with a total thirteen pieces obtained from seven settlements[124]. The Medieval Age ceramics found in these investigations are generally consistent with Medieval Age ceramics of Aşvan Castle, Taşkun Castle, Tille and Gritille and they are dated as late Medieval Age period, 11-15th centuries.[125] Therefore, these data are very important to yield the distribution material in the region.

In the Medieval Age settlements whose chronologies and architectural layering outlined above, dating was made on the basis of coin and ceramic relations.

In studies conducted in the Eastern Anatolia, no ceramic producing stove of Byzantine period was found that is decorated with sgraffito technique. In the Karababa basin where Samsat is located at its center, the sgraffito ceramics that were produced with a technique unknown before the 12th century, first appear in the 5th layer in the Gritille Höyük which is dated as after 1150's. They are the oldest ceramics found in a settlement in the central Anatolia.[126]

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[120]Redford 1998: 275
[121]Redford 1998: 57
[122]Redford 1998: 157
[123]Redford 1998: Fig. 3: 3 A-I; 3: 5 K; 3: 8 G- H;3: 9 C, E; : 10 C;3: 11 D;3: 12 C; : 15 A, F
[124]Sagona and Sagona 2004: Bayburt-Castle, Çorak Höyük, Çoraktepe1-2, Korukdağ Hill, İncili, Baltakaya, Hoburnu Hill, Karataş.
[125]Sagona and Sagona 2004: 221, dip note 93
[126]Redford 1998: 275- 276.

The İmikuşağı Medieval Age layers in the Karakaya dam lake basin where no sgraffito ceramics were found are contemporary[127] with or a little younger than the Aşvan Castle which is dated as 10-11th centuries (?)[128], and only one[129] sgraffito sample was obtained in the first layer.

In Tasmasor, only one glazed piece of sgraffito technique was obtained. The fact that pieces of sgraffito technique were rarely observed in Tasmasor may indicate that Aşvan Castle I. layers are contemporary with Gritille I- IV layers.[130]

Considering the geostrategic position of Tasmasor which is located in area where trade roads are coincided, limited number of sigrafitto ceramics may be indicative of a period where sigrafitto is not common.

Three glazed samples of slip technique were found in Tasmasor[131]. Transparent glaze is light brown, yellow (xxxxx) colored on the slip and dark brown (2.5 Y 3/3) in areas where glaze is directly in contact with the container. Surfaces of reddish yellow (5 YR 6/6) cemented container and dips are uncoated. (slip decoration ??).

Figure – Samples of Slip Technique.

Slip, which is observed in early periods, was applied as more swollen shapes than the late period.[132] Although slip is thick in late samples found in Korucutepe and Mediterranean coast and thinner in Tasmasor samples, it was applied by stroking with a brush or finger with a distinguishable coating thickness. In this respect, Tasmasor sample is different from than those in Aegean, Mediterranean and Korucutepe area.

[127]Sevin 1995: 113
[128]Mitchell 1980: 255
[129]16 cm diameter, pink cemented, green glazed, dark green sgraffito decorated bowl (Mitchell 1980: Fig. 43 no. 582)
[130]Incompatible dates between Gritille and Aşvan Castle layers and coins may be due to circulation period of coins.
[131]Rice 1965: 210, 212; Bakırer 1980: 208; Doğer 1998: 179; Fındık 2002: 319- 320; Böhlendorf- Arslan 2004: 112- 113
[132]Morgan 1942: 96

For the pieces of slip technique that are known to be produced until the end of 14th century in Aegean and Mediterranean coasts, the earliest date suggested for korint samples is the beginning of 11th century.[133]

Slip technique was commonly used in Byzantine ceramics and containers produced with this technique were found in several places. The earliest samples of containers of the long-term used slip technique are the import wares of 11th century known from the Korinth. Similar types of these import wares were locally produced in Korinth.[134]

Ceramics of slip technique were found in Ani which is believed to be one of the most important centers in Eastern Anatolia which was culturally and historically intensely interacted with neighboring areas.[135] Transparent glazed bowls with colors of brownish-green on uncoated part and light green on the coated part has red cement.[136] A date of 9th century is suggested for the Ani and Erivan samples.[137] Ceramics of slip technique in Dmanisi[138] (Georgia) and Zvartnotz[139] (Armenia) are known as decorated samples resembling kufic script character[140]

Samples in which slip technique is evaluated in the concept of Islamic ceramic are found in Semerkant and Nişabur. This material whose first samples in Semerkant are dated to 9-10th century[141] is similar to ceramics of green painted group particularly known in Sercan (Sirjan) with analogues dated for 9-10th centuries.[142]

The difference of Semerkant and Sercan sample from the Byzantine samples is that slip is colored. This Byzantine technique was transformed from the Semerkant samples, the

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[133]Morgan 1942: 101- 102
[134]Rice 1965: 213
[135]Şelkovnikov 1957: 17 no. 320, 28 no. 313; Rice 1965: 214; Turan 1997: Cat. no.: 24- 28
[136]Şelkovnikov 1957: 17 no. 320, 28 no. 313; Turan 1997: Cat. no.: 24- 28. In one sample, slip was applied together with sgraffitto technique (Cat. no.: 22).
[137]However, 9th century suggestion was found to be disputable by Rice, it is suggested as 14th century (Rice 1965: 214). Similar of these ceramics were also found in Oran Kala (Beilagan- Baylagan) settlement, 280 km southwest of Baku in Southern Azerbaijan, (Rice 1965: 214, dip not 2).
[138]85 km southwest of Tbilisi.
[139]It is close to Echmiadzin in the Armavir region of Armenia.
[140]Rice 1965: 214, 213 Fig. 18
[141]Rice 1965:
[142]Most of white coated, painted wares are yellow and green glazed. It was used to get the attention on manganese brown or purple main decoration. Purple color was used in a few pieces. The coating with chromium oxide is colored with yellowish green glaze. This generally fills the glaze and provides glaze to have bright yellow or dull green colors. This type is very similar to that found in Nişabur classified as dirty yellow blackish wares by Wilkinson. In these type containers, if the paint applied very thick, color does not change and therefore, researchers think that this technique is not deliberately applied to fade the color of glaze. Outer surface of these wares are uncoated and unglazed. Inner parts are coated and lead-added glazed. The most commonly shown decoration spirals on the rim. These spirals resemble hedera motifs. This decoration which has no analogues in Nişabur, are observed in Leşkeri Bazar. May be, the most likely analogue plate (dated to -10th centuries) was found by Wilkinson in Afrasiyab, Iran shown in Stoliarov (Morgan and Leatherby 1987: 64, Fig. 11.4- 5).

most probable road to the west is via Caucasus and Crimea.[143] On the basis of distribution and the places where they are found, researchers think that this decoration technique, whose first samples are dated to 9-10th centuries, has an eastern origin and it was imported to the Byzantine from the Caucasus region.

Pieces of slip technique found in Tasmasor are more consistent with Caucasus and eastern samples of this technique rather than Byzantine samples. On the basis of other ceramics and coin findings, a date before the middle of 11th century cannot be suggested for pieces made with this technique.

Circulation period of two bronze Byzantine coins A2 (M.S. 976 (?) – c. 1030/1035) ve C type (M.S. 1042 (?) – c. 1050) found in Tasmasor is related to political events in the region. It is though that coins stroked before 1071 in the Byzantine period were in circulation in Eastern Anatolia for a long period, which is also supported by finding of later-dated Islamic coins with the same layer of the Aşvan Castle.[144]

Three anonymous Byzantine coins on the 1st structure floor in the Tille Höyük are dated to 1042-1070 years.[145] However, another coin found together with these coins, that is dated to William I. Raymond period (1190-1195) is accepted terminus *ante* quem for this layer.[146] Therefore, this sample indicates that anonymous C (1042-1050) coins were in circulation hundred fifty years more until 1195.

Due to limited number of layered Medieval Age settlements in particularly northern part of Eastern Anatolian region and less known of materials, there are no sufficient data to support or discuss the results of excavation works conducted in the region. Since Tasmasor settlement has been intensely smoothed since historical times, ceramic materials have been mixed with lower layers. Among the parsed Medieval Age ceramics, various centers were encountered based on types. Since most of the Medieval Age studies in the region are comprised by surface investigations, a distinct dating could not be made and but some pieces are helpful for dating with comparison. Since layer dates of compared centers and dates of two coins obtained in Tasmasor are consistent, these pieces indicate that settlement continued from the end of 11th century to the second half of 12th century. In the late period, that settlement area was shifted 600 m to northwest. By the shifting of settlement, the area of the Iron and Medieval Ages was used a s a graveyard.

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[143]Rice 1965: 217
[144]Mitchell 1980: 55
[145]Moore 1993: 179- 180 Anonim C 1042- 1050- Level 1.2 (no. 7), Anonim D- 1050/ 56- Level 1.1. (no. 4), Anonim G 1065- 1070- Level 1.2 (no. 6)
[146]Moore 1993: 179 no. 3

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ASSESSMENT OF THE TASMASOR MODERN AGE NECROPOLIS AND ITS SKELETONS FROM AN ANTHROPOLOGICAL POINT OF VIEW

Tasmasor hill located 7 km to the northeast of Erzurum and 1,5 km to the east of Çayırtepe (Müdürge) village connected to the central township, is 2 km to the north of Erzurum belt high-way that connects Pasinler to Ilıca. It is possible to find the name of Tasmasor archaeological centre in travel books and maps dated back to the period before the 20th century. In the travel book written by Abbot after a research expedition to the region in 1837 (1842: 207) the name of the village is mentioned as *Tasmaczor*; and in the maps related to the region (Hewsen (2001: map 169) it is mentioned as *T'asmatsor (Tasmosur).* Likewise, this area is called the Tasmasor region also by the people living in this region today. Because of Çayırtepe (Müdürge) Village's being located in Tasmasor region that is used as agricultural and pasture land and not actively inhabited by people, and on the route of Baku-Tbilisi-Ceyhan crude oil pipe-line, an archaeological rescue excavation was conducted in 2003. It has been determined that the natural elevation located at the eastern end of Erzurum Plain, and the eastern edge of Müdürge swamp has been intensively used as graveyard area in the Modern Age. In the excavations conducted, it has been determined that the graves are concentrated at the highest region of Tasmasor hill (Figure 1). The human skeletal remains related to the graves destroyed during the construction of the Iranian natural gas pipe-line that passed by the southern part of the area excavated in 2003, have revealed that this graveyard spreads over a large area in a way that encompasses at least this area as well. The hill constituting the Tasmasor excavation area, is an elevation not covered by alluvium and essentially comprised of volcanic tufa, agglomerate (volcanic breccia) (Sözer 1972) and sedimentary rocks. In Tasmasor hill, the dead are buried in pits dug in areas not concentrated in sedimentary rocks but in areas more densely composed of the softer volcanic tufa (Figure 2). The grave pits are dug with directional uniformity in the east-west direction or with slight deviations from this direction (Figure 3). The pits are larger at the western part where the head of the dead person is laid and narrower trapezoid shaped where the feet are placed (Figure 4).

Of the 215 graves discovered, the largest section of 71,2 % (153 graves) are simple earth burials dug in tufa or earth and whose sides are not surrounded by any construction element (Figure 5). 24 graves (% 10,7), are simple, stone sarcophagus graves surrounded by a series of flat or amorphous natural unhewn stones of different sizes that are frequently encountered in the plain around Tasmasor hill and that have not been exposed to any processing. (Figures 6-7). In some graves (39 graves) such unhewn stones are placed at some points along the sides of graves or at locations that match the head, feet and hip regions of the dead (Figures 8-9). It has been observed that the upper levels of all the stones placed along the sides of graves are located higher than the uppermost ribs of the skeletons. The skeletons inside the graves are laid flat on the back in the west-east (atlas-sacrum) direction; hands are left crosswise at the level of the chest, abdomen or hips (Figures 7-9). The faces of the skeletons are mostly facing upwards while the legs are lying flat. Graves in which the dead are laid and buried in such a position are frequently encountered in Christian graveyards in Anatolia dated back to the Middle Ages as well as to the Byzantine era and the following periods (for instance, Yalman 1994; Özcan et al.2003; Erkanal and Özkan 1999; Yaraş 2002).

Of the graves discovered in Tasmasor, findings related to a lid system have been obtained in 134 graves (58,8%). In 88,1% of the 134 graves, the dead body is covered with wooden planks or boards (Figures 10-16). In graves not surrounded by any series of stones along the sides, two wooden poles are placed parallel to the long sides of the grave so as to form an elevation from the base of the grave to the upper level of the dead body (Figures 11-12). These planks placed parallel to the long sides of the grave are covered over with short tree remains placed perpendicular to the planks (Figures 12-14). These data indicate that the wooden planks and stones placed along the sides of graves are used with the aim of forming a platform for the short wooden planks that will cover the dead body. Not observing any wooden material under the skeletons indicates that coffins are not used. It has also been observed that none of the wooden construction elements discovered has been stabilised with nails. On the other hand, some graves (16 graves, 11,9 %), are covered with composite use of flat stone and wood construction elements (Figures 15-16). In graves with a greater number of baby and child skeletons (90 graves), it has not been possible to determine with which construction elements the graves are covered. Yet, since wooden construction elements constitute a significant portion of the findings related to the cover system of these graves, it is reasonable to say that these graves were also covered with wood, but nothing has remained from the trees destroyed with time. Regardless of whichever construction element is used, in graves belonging to the Tasmasor community people have strived to leave empty space between the dead body and the soil filled into the grave. In other words, the dead bodies' contact with the soil are severed and the graves have acquired the quality of a simple coffer or coffin.

There is no statistically significant relationship between the women and men laid in the graves and the cover systems of the graves' being wooden or composite (χ^2: 0,008;

SD 1; P, Fisher'in exact χ^2 test: 1). In a similar fashion, there is also no relationship among the graves being surrounded by stones, partial use of stones or the graves' being simple earth burials (χ^2: 1,996, SD 2; P:0,369). The similarity is valid also with respect to age groups. Both the babies and children and the adults and the elderly have been buried in graves constructed with similar construction elements (χ^2: 0,512, SD 4; P:0,972). Nevertheless, the fact that skeletons in the growing phase, especially those of babies, are discovered at a level closer to the surface of the earth shows that there is a difference among the age groups with respect to the depth of the graves.

Of the 215 graves discovered in Tasmasor, two skeletons have been unearthed from each of 9 graves (4,2%) and one skeleton has been unearthed from each of the remaining 206 graves (95,8%). In only one of the 9 graves in which multiple burials have been discovered (M-52), the skeletons of two newborn babies are buried together probably in the same grave. (Figure 17). In the other 7 graves (graves numbered M-68, 96, 122, 142, 163, 221 and 224) besides the in-situ discovered skeletons, the skeletal remains encountered were mostly those belonging to babies and children. In grave number M-189, the skeletal remains of another individual encountered during the burial of an adult individual have been piled to the north of the grave, beside the arm bones of the in situ skeleton. As it has been described in this instance, the second skeletons discovered in the graves arise probably from the reburial of the skeletal remains encountered during the digging of the grave pit. Although all the graves have been discovered in situ, the skeletal remains with damaged articulation numbered as M-228, are comprised of the secondary burial buried once again in the dug pit (Figure 18). Therefore, it can be stated that in Tasmasor a pit is dug for every dead body and that multiple burials are not done.

In the Tasmasor graveyard, no grave findings have been encountered apart from a skeleton with a bracelet on the left arm (M-205) (Figure 19). Therefore, there are no archaeological findings to be used in dating the graves and the skeletal remains buried in these graves. Nevertheless, since the name of this settlement is mentioned in the travel book written in the 19th century (Abbot 1842) and there is an area with obvious architectural remains 100-150 km to the north of the site where the archaeological excavations are conducted (Figure 20); it can be stated that this graveyard belongs to a village deserted at the beginning of the 20th century and probably to people living in Tasmasor.

The Tasmasor community is the only existing sampling of this size in Anatolia dated back to the Modern Age. Due to both the remains' being dated to a relatively recent date and their being buried in tufa, the Tasmasor skeletal remains have been discovered in a well-preserved condition. The skeletons have been unearthed as quickly as possible to avoid their being adversely affected by sun light and heat during the excavation, those that would stay in daylight have been covered with damp clothes, they have been collected without losing any time after the completion of the drawing and photographing of skeletal remains and thus the damage that might be caused during the excavation have been minimised.

In this study, a total of 224 human skeletons unearthed from 215 hamlets whose dead burial traditions have been briefly described above and dated back to the Modern Age are taken up from an anthropological point of view. Since the cleaning up of the skeletons, restoration procedures, taking of anthropometric measurements and the collection of necessary information on the health structure require a long period of time, the detailed publication of a skeleton series of this size in all its aspects also requires a long period of time. Therefore, this study can be considered as a preliminary study that takes up the broad outlines of the biological kinship (kinship relations) of the Tasmasor Modern Age community with ancient human populations dated back to the Middle Ages and the following periods, their population structure, health structure and growth patterns, developmental disorders, stature and life style and environmental adaptation processes such as oral and dental health and supports the findings with basic sources.

Morphological Structure in the Tasmasor Modern Age Community

A significant portion of the information on the biological characteristics of ancient human societies is elicited through the examination of the skeletal remains. Data on population genetics in ancient human societies is largely based on phenotype. While it was previously accepted that phenotypic characteristics have a hereditary basis to a significant extent, studies conducted on anthropometric and anthroposcopic characteristics have revealed that they are significantly affected by environmental factors as well (Richtsmeier and McGrath 1986; Hauser and De Stefano1989; Larsen 1997; Molnar 2002; Susanne 1975, 1977). Therefore, it can be stated that the phenotypic structure of communities is shaped by genetic and environmental factors together. Although biological kinship among communities is determined through the examination of characteristics that are not directly influenced by environmental factors such as DNA remains, serum proteins and blood groups from ancient human societies, it is not possible to always get reliable results with archaeological materials due to contamination dependent on time and place. (Relethford 1994, 2002; Powell and Neves 1999). Moreover, it is also accepted that in biological kinship studies, results of antique DNA analyses are similar to results obtained from anthropometric and epigenetic characteristics (Howels 1973; Powell and Neves 1999; Relthford 1994; Eroğlu 2005) and it is thought that this yields quicker results than it would be in other fields. It is for this reason that anthropometric characteristics have been used in the determination of the morphological characteristics of the Tasmasor human community and in the analysis of its biological relationships with ancient Anatolian communities.

In order to determine the morphological structures of the human skeletal remains unearthed from the Tasmasor settlement and dated back to the Modern Age, and to determine their morphological relations with ancient Anatolian human communities, 34 anthropometric measurements have been taken from the skulls using the technique defined by Bass (1987), Brothwell (1981) and Olivier (1969) (Table 1). Because the measurements that reflect skull shape in the community display significant differences with respect to sexes, they are provided in Table 1 by taking sexual distinction into consideration. As it can be seen in Table 1, there are statistically significant differences between the sexes in the measurements apart from the lengths and widths of the nose, orbital fossa, palate and foramen magnum and facial depth, upper face height, bimental width and mastoid length. These results indicate that sex-related dimensional differences in the skulls of Tasmasor people are more prominent in the brain box (*neurocranium*) than in the facial skeleton (*suplanchocranium*).

Table 1: Skull Measurements in the Tasmasor Skeletal Remains

	Man			Woman			F	P
Head Measurements	N	X	Sd	N	X	Sd		
Maximum head length	40	184,88	6,985	26	178,92	6,406	12,198	0,001*
Maximum head width	39	144,28	6,191	25	140,36	4,667	7,341	0,009*
Maximum forehead width	40	122,69	5,537	27	118,48	5,409	9,473	0,003*
Minimum forehead width	42	99,52	5,436	31	96,29	4,618	7,151	0,009*
Bizygomatic width	26	135,48	5,145	19	127,95	4,949	24,295	0,000*
Basion-bregma height	34	133,29	4,630	27	128,00	5,114	17,935	0,000*
Basion-nasion length	34	103,50	4,651	29	99,50	6,425	8,169	0,006*
Basialveolar length	28	96,21	6,204	25	93,22	4,744	3,824	0,056
Biasterion width	39	112,38	5,860	28	108,70	3,950	8,350	0,005*
Biporion width	37	120,61	5,558	24	115,71	4,513	13,046	0,001*
Nasal height	41	53,90	2,755	30	52,75	3,042	2,776	0,100
Nasal width	42	24,77	2,028	29	24,22	1,806	1,376	0,245
Orbital height	39	35,15	2,847	30	35,98	2,048	1,804	0,184
Orbital width	39	40,81	2,329	30	39,95	2,966	1,816	0,182
Biorbital width	37	100,01	3,601	29	98,05	3,450	5,006	0,029*
Upper face height	32	74,56	4,248	26	72,56	4,867	2,804	0,100
Total face height	24	124,31	6,605	22	117,98	7,762	8,935	0,005*
Bimalar width	36	95,96	5,864	27	93,57	4,597	3,052	0,086
Palatal length	36	46,83	3,479	31	45,52	2,632	2,976	0,089
Palatal width	23	41,43	3,287	21	41,00	2,049	0,271	0,605
Length of Foramen magnum	35	36,11	2,758	24	34,88	2,568	3,039	0,087
Width of Foramen magnum	30	30,32	2,445	21	29,45	2,133	1,711	0,197
Mandibular length	41	107,51	5,733	28	103,18	5,700	9,551	0,003*
Ramus height	43	64,48	4,570	32	59,20	4,405	25,194	0,000*
Gonial angle	43	121,99	5,599	32	124,31	4,198	3,883	0,053*
Ramus width	46	31,98	2,129	31	30,05	2,263	14,464	0,000*
Bigonial width	42	102,07	7,361	32	94,16	5,841	24,981	0,000*
Bicondylar width	34	122,19	6,726	25	115,58	6,488	14,338	0,000*
Bimental width	47	45,86	2,395	32	45,77	2,600	0,029	0,866
Symphiseal height	39	35,83	3,333	29	32,78	3,026	15,125	0,000*
Mastoid length	43	32,58	5,978	32	28,81	2,931	10,764	0,002*
Mastoid height	42	46,62	6,003	31	45,37	3,069	1,121	0,293
Maxilloalveolar length	34	55,71	4,343	25	53,22	4,965	4,180	0,046*
Maxilloalveolar width	20	64,65	4,730	23	62,41	4,350	2,609	0,114

* P<0,05

Head measurements provide information on skull dimensions while the indices that give the ratio of these measurements to each other yield information about the shape of the skull. Eleven indices have been calculated in order to be able to determine the skull shapes of the people of Tasmasor (Table 2). The averages of the index values of men and women differ only for the lower jaw (mandible). The values obtained indicate that in the people of

Tasmasor, the head shapes of women and men are more similar to each other than their dimensions.

Table 2: Skull Indices in the Tasmasor Skeletal Remains

	Men			Women			F	P
Indices	N	X	Sd	N	X	Sd		
Head	39	78,23	4,554	25	78,38	3,661	0,018	0,893
Forehead-Head	39	69,01	4,100	25	69,20	3,012	0,039	0,843
Forehead	40	80,84	3,287	27	81,52	2,597	0,824	0,367
Height-Width	33	92,08	4,916	25	91,74	3,224	0,089	0,766
Height- Length	34	72,11	2,702	26	71,69	2,414	0,403	0,528
Upperface	21	55,83	2,879	18	57,15	3,464	1,694	0,201
Nose	40	46,14	4,225	29	46,07	3,501	0,005	0,943
Orbital Fossa	39	86,44	8,957	30	90,66	10,029	3,403	0,070
Lower jaw (mandible)	37	94,29	5,844	28	91,18	3,290	7,127	0,010*
Head-Face	26	92,70	3,204	19	91,00	3,327	2,992	0,091
Palate	21	89,38	7,595	21	90,10	5,723	0,120	0,731

When the skull indices are taken into consideration, the people of Tasmasor are observed to have head shapes of medium width (*mesocranial*) and medium height (*metriocrane*, *orthocrane*). When the width of the skull is taken into consideration, the forehead has a wide structure (*eurometopia*). Nevertheless, the frontal bone of normal dimensions is in a decomposed form. The upper face and the nose are narrow (*leptene*, *leptorhine*), while the orbital fossa is high (*hypsiconch*). With a narrow and long lower jaw shape (*dolichognath*) and a wide palate structure (*brachystaphyline*), the people of Tasmasor have a facial shape that does not allow for the cheekbones to be observed when the cranium is viewed from above (*cryptozygy*). Based on the averages of the index values in the community the head is shaped like this, but the community still manifests a prominent diversity with respect to the characteristics listed above. When the distribution indicated by the head index selected to reflect this diversity is taken into consideration (Figure 1), the morphological diversity of the people of Tasmasor becomes even more significant. According to the head index calculated in 64 skeletons, although individuals with round head shapes of medium width are more emphasised in the community, it is observed that there is a wide morphological distribution ranging from individuals with very long heads to those with round heads.

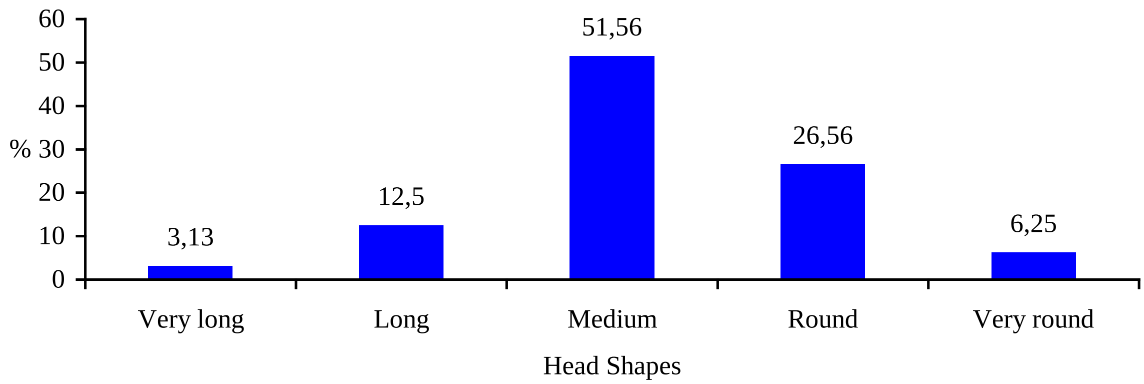

Figure 1: Distribution of Head Index in the People of Tasmasor

According to the gradual distinction analysis based on head measurements, of the 20 measurements taken from the skull and included in the statistical analysis, the following 13 measurements in total have been determined to better reflect the distinction among men: head length, height, basion-nasion length, bizygomatic width, upper face height, biorbital width, orbital width, nasal length and width, palatal length and width, maxilloalveolar length and width. On the other hand, the number of such measurements in women is 8. According to the accurate classification table that helps to determine whether communities are morphologically heterogeneous, only 60% of the men in the Tasmasor community (40 individuals in whom it has been possible to take a significant portion of the measurements) and 66,7% of women (27 individuals in whom it has been possible to take a significant portion of the measurements) are classified in their own groups (Table 3a and b). Assessed from this perspective, the men of the Tasmasor community constitute the most heterogeneous skeleton group after the İznik community in which only 59,3% of men are accurately classified within themselves and the women of the Tasmasor community constitute the most heterogeneous skeleton group after the Kovuklukaya community in which 64,3% of women are accurately classified within themselves. Likewise, the width of the distribution observed in the head index also supports this diversity. In the Tasmasor community, men who differ from the morphological characteristics of their own group have been classified within the following communities at the following percentages: 7,5% in İkiztepe community (Early Bronze Age), 25 % in İznik community and 7,5% in Hak Mehmet community; and the women have been classified within the Hagios Aberkios community by 11,1% , the İkiztepe community by 7,4%, and the rest have been classified within the Kovuklukaya, İznik, Hak Mehmet and Andaval communities at the ratio of 3,7%

for each community. While all the men in the Byzantine and Modern Age skeleton groups such as Yortanlı, Hagios Aberkios, Ani, Aziz Nikolaos, Hak Mehmet, Erzurum, Amasya and Şamlar are accepted as relatively homogeneous groups that can be classified within themselves, more than 90% of the Kovuklukaya and Erzurum communities have been classified in their own groups. These data indicate that among the Anatolian communities studied, the people of Tasmasor are one of the communities that display the highest morphological diversity.

Table 3a: Classification of Anatolian Communities According to Gradual Distinction Analysis (Men)

Name of Community	İkiztepe	Cevizcioğlu Çiftliği	Yortanlı	Kovuklukaya	Andaval	İznik	Hagios Aberkios	Ani	Aziz Nikolaos	Hak-mehmet	Erzurum	Amasya Şamlar	Tasmasor	N
İkiztepe	90,4	1,9	0	1,9	0	0	0	0	0	0	3,8	0	1,9	52
Cevizcioğlu	2,9	97,1	0	,0	0	0	0	0	0	0	0	0	0	34
Yortanlı	0	0	100,0	,0	0	0	0	0	0	0	0	0	0	12
Kovuklukaya	0	6,7	0	93,3	0	0	0	0	0	0	0	0	0	15
Andaval	0	0	0	,0	87,5	0	0	12,5	0	0	0	0	0	16
İznik	7,7	2,2	0	,0	1,1	59,3	0	4,4	0	4,4	3,3	0	17,6	91
Hagios Aberkios	0	0	0	,0	0	0	100,0	0	0	0	0	0	0	15
Ani	0	0	0	,0	0	0	0	100,0	0	0	0	0	0	4
Aziz Nikolaos	0	0	0	,0	0	0	0	0	100,0	0	0	0	0	11
Hakmehmet	0	0	0	,0	0	0	0	0	0	100,0	0	0	0	8
Erzurum	0	0	0	3,1	0	0	0	0	0	0	96,9	0	0	32
Amasya Şamlar	0	0	0	,0	0	0	0	0	0	0	0	100,0	0	6
Tasmasor	7,5	0	0	,0	0	25,0	0	0	0	7,5	0	0	60,0	40

81.3 % of the men belonging to the original groups have been accurately classified

Table 3b: Classification of Anatolian Communities According to Gradual Distinction Analysis (Women)

Name of Community	İkiztepe	Cevizcioğlu	Yortanlı	Kovuklukaya	Andaval	İznik	Hagios Aberkios	Ani	Aziz Nikolaos	Hak-mehmet	Tasmasor	N
İkiztepe	71,8	2,6	0	7,7	0	2,6	5,1	0	0	0	10,3	39
Cevizcioğlu	9,5	71,4	0	14,3	0	4,8	0	0	0	0	0	21
Yortanlı	0	0	100,0	0	0	0	0	0	0	0	0	8
Kovuklukaya	0	21,4	0	64,3	0	7,1	0	0	7,1	0	0	14
Andaval	0	0	0	0	100,0	0	0	0	0	0	0	10
İznik	0	11,1	0	0	0	88,9	0	0	0	0	0	9
H. Aberkios	0	0	0	0	0	0	100,0	0	0	0	0	6
Ani	0	0	0	0	0	0	0	100,0	0	0	0	5
Aziz Nikolaos	0	0	0	0	0	0	0	0	100,0	0	0	6
Hakmehmet	0	0	0	0	0	0	20,0	0	0	80,0	0	5
Tasmasor	7,4	0	0	3,7	3,7	3,7	11,1	0	0	3,7	66,7	27

78.0 % of the women belonging to the original groups have been accurately classified

We have strived to establish the bilateral kinship relations of the Tasmasor skeleton group with other ancient Anatolian human communities by using the measures that have been determined to best reflect the inter-community differences in Anatolia via the gradual distinction analysis. (Table 3a and b). The clustering analysis has been made by obtaining Mahalanobis' generalised kinship matrix (D^2) (Table 4a and b). As a result of the analyses conducted separately for men and women, it has been determined that ancient Anatolian human communities are divided into two clusters (Figure 2a and b). It has been determined that the men of Tasmasor are included in the same group as the relatively heterogeneous communities of İznik, Cevizcioğlu and İkiztepe, and not in the same group as the Central and Eastern Anatolian communities that form a cluster and are dated back to the Modern Age and the Middle Ages (Figure 2a). Although the Tasmasor community is located in a rather remote geographical region from archaeological settlements such as İznik (Northeast Anatolia), Cevizcioğlu (Western Anatolia) and İkiztepe (Central Black Sea) and is dated back to a different period from these communities, its morphological similarities with these communities must be related to the genetic heterogeneity they display.

The reason for the finding that the İznik community is the community that shows the highest similarity with the Tasmasor community with respect to skull dimensions can be that they both have Asiatic characteristics in addition to the genetic diversity they display. Studies conducted on the human skeletal remains from the İznik Late Byzantine period have revealed that this community is comprised of at least two different ethnic groups (the Christian people buried in and around the church built inside the theatre and Muslim Turks buried outside the cavea) (Erdal 1992, 1996). The detection of morphological traits frequently encountered in Asians in both the skull morphology and the morphological characteristics of the teeth of the İznik community (Erdal 1992, 1996) has been associated with the migration of people of Central Asian origin into Anatolia. It is well known that with the battle of Manzikert (Malazgirt) in 1071, human communities of Central Asian origin have added Asiatic characteristics to the genetic structure of Anatolia (Erdal and Eroğlu 2000; Benedetto et al. 2001). Therefore, when assessing the heterogeneity detected in the Tasmasor community, the communities' relationships with other societies should also be taken into account. With respect to its geographical location, Erzurum has always been regarded as the gateway into Anatolia by the Caucasus and the Steppes of Iran from the prehistoric era to the recent ages and the people of the region have been exposed to continuous invasions. Many societies like the Arabs, Seljuks, İlhanlılar, Armenians and Safavis have tried to control Erzurum which is regarded as the gateway into Anatolia. (Grousset 2005;

Honigman 1970)[1]. Likewise, it is suggested that the present population of Erzurum is heterogeneous and that although Turks have quickly established a cultural and lingual hegemony after entering Anatolia with the Battle of Manzikert, the region possesses a heterogeneous ethnicity shaped by Persian, Arab and Armenian elements. (Hopkins 2001 citing Dwedney 1971). The presence of human groups of various ethnic origins in Erzurum and its environs in the 19th century also means that the community is influenced by this diversity and that it even reflects it to a certain extent. Its location on the geographical corridor between the Caucasus, Central Asia and Anatolia renders the heterogeneity of the Tasmasor community and its similarity with the İznik community comprehensible to a certain extent.

The women of Tasmasor display a different biological kinship pattern than men (Figure 2b). In fact, the women of Tasmasor, unlike the men, have been separated from the other main group of Anatolian communities by being clustered in the same group with skeleton groups that are both geographically closer to each other (Ani, Erzurum, Hak Mehmet), and dated back to temporally similar periods. This distinction, in fact, seems more significant than the distinction determined for men. Thus, communities similar to each other from temporal and spatial perspectives are expected to display a more similar genetic relationship than communities dated to different periods from each other and located in geographically different regions. The women of Tasmasor's having a similar pattern to this structure suggests that female skeletons better reflect the inter-group relationship and that men might have come to the region through migrations. Yet, for these data to have certainty they have to be tested with larger skeleton samplings.

In an overall assessment, it can be stated that the people of Tasmasor constitute a community that displays morphological diversity, and that the ethnic structure of the region at the period the community is dated to and the efforts by many societies to control the region under control because of the location of the settlement on the natural geographical corridor between Caucasus, Central Asia and Anatolia have been influential in the occurrence of this diversity. The investigation of the population and health structure of the Tasmasor community that shows morphological diversity would make great contributions in determining the life style of the community.

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[1] Also see the section entitled "Tasmasor: Geographical location and historical framework." included in this book.

Table 4a: Mahalonobis' D^2 Matrix in Ancient Anatolian Societies (Men)

MAN	İkiztepe	Cevizcioğlu Çiftliği	Yortanlı	Kovuklu-kaya	Andaval	İznik	Hagios Aberkios	Ani	Aziz Nikolaos	Hakmehmet	Erzurum	Amasya Şamlar	Tasmasor
İkiztepe	0,000000												
Cevizcioğlu	6,030729	0,000000											
Yortanlı	3,684160	2,951446	0,000000										
Kovuklukaya	1,638156	1,805241	2,294417	0,000000									
Andaval	6,813392	6,798647	5,211645	9,302401	0,000000								
İznik	1,253419	1,425050	2,262421	1,926607	4,638652	0,000000							
H. Aberkios	2,158915	2,663998	3,324084	3,014311	3,254704	2,509985	0,000000						
Ani	6,596811	6,595053	4,611881	6,550999	4,207943	2,660801	5,464083	0,000000					
Aziz Nikolaos	4,370091	4,517059	3,762939	5,263786	2,995876	4,464330	1,679386	5,787490	0,000000				
Hakmehmet	2,308768	2,770283	4,937750	1,547694	1,037418	2,665206	3,655197	6,453885	5,868103	0,000000			
Erzurum	4,477500	4,484641	2,205369	3,204727	4,250494	2,024241	2,624191	2,057468	3,709585	3,906081	0,000000		
Şamlar	5,616501	5,387424	3,601417	6,083515	1,537180	2,865171	2,945735	2,490541	3,636777	4,832960	2,420714	0,000000	
Tasmasor	1,512813	1,968111	3,237942	1,946167	6,804102	4,454119	3,528931	3,375094	5,464768	1,762425	2,408648	4,901065	0,000000

Table 4b: Mahalonobis' D^2 Matrix in Ancient Anatolian Societies (Women)

WOMAN	İkiztepe	Cevizcioğlu	Yortanlı	Kovuklu-kaya	Andaval	İznik	Hagios Aberkios	Ani	Aziz Nikolaos	Hakmehmet	Erzurum	Tasmasor
İkiztepe	0,000000											
Cevizcioğlu	6,479438	0,000000										
Yortanlı	2,912239	1,239579	0,000000									
Kovuklkaya	9,169589	2,368047	1,503178	0,000000								
Andaval	1,500514	3,490724	8,211276	3,781594	0,000000							
İznik	3,909165	1,028752	8,343751	1,334158	2,225269	0,000000						
H. Aberkios	1,122633	1,598753	1,127489	2,224809	1,272468	2,059389	0,000000					
Ani	1,739761	1,810291	2,673651	2,101843	4,677156	8,029190	3,899638	0,000000				
A. Nikolaos	3,127117	2,723491	4,485169	3,353672	5,292111	2,722028	2,491145	2,944241	0,000000			
Hakmehmet	4,405220	2,186086	5,816540	2,936723	8,420165	4,923867	3,449819	4,943504	2,179108	0,000000		
Erzurum	4,214480	2,399972	5,887358	3,002628	8,969805	3,486641	5,193737	1,810234	2,403661	1,825121	0,000000	
Tasmasor	1,480534	1,316749	2,202205	1,945741	3,144848	1,221810	1,238110	1,483939	6,470196	2,273644	1,929713	0,000000

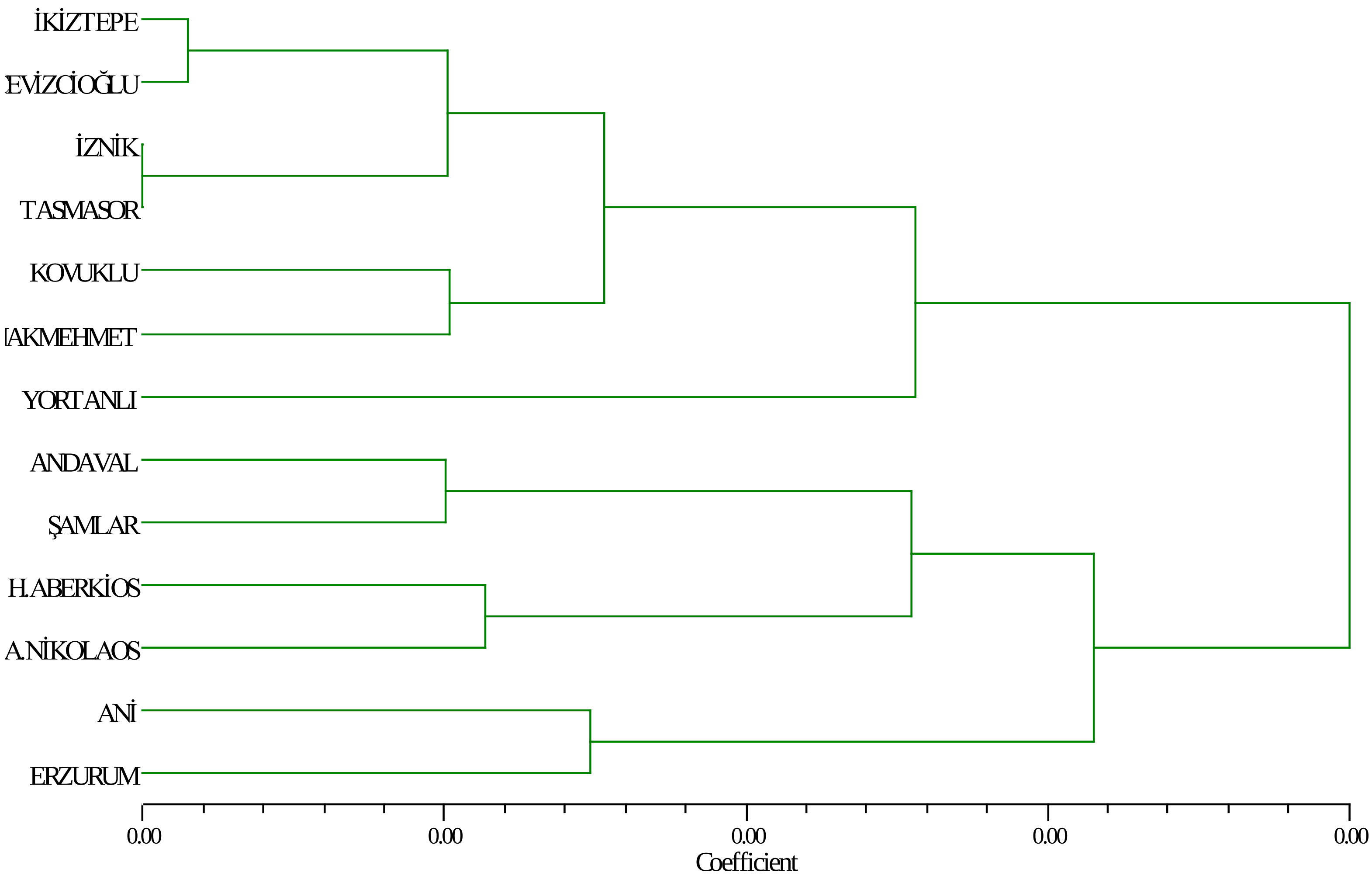

Figure 2a: Tasmasor Community's Kinship Relationship With Other Anatolian Communities (Men)

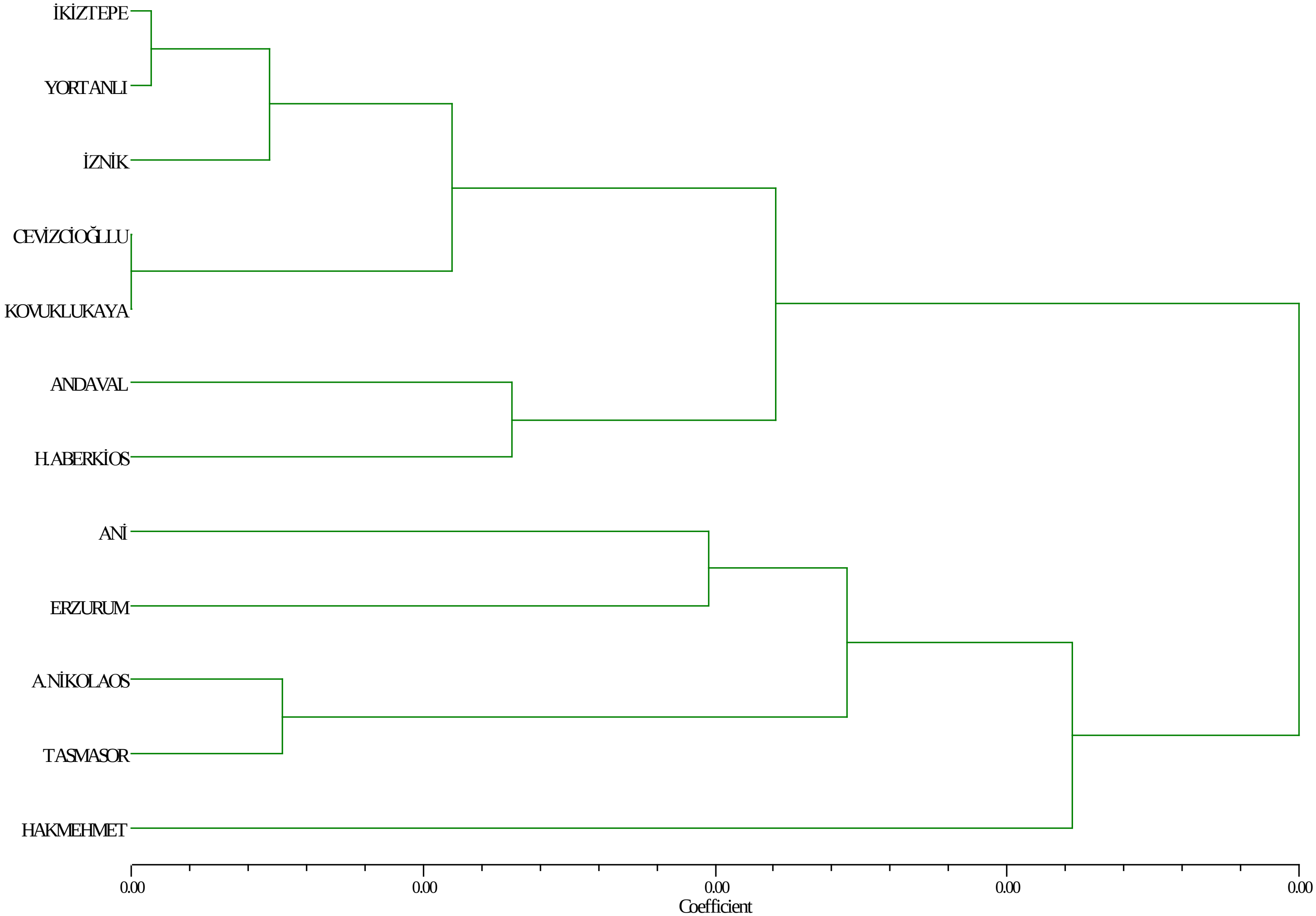

Figure 2b: Tasmasor Community's Kinship Relationship With Other Anatolian Communities (Women)

Population Structure in the Tasmasor Community

Palaeodemography is a branch of science that studies extinct communities with respect to their population structure, size, density and mobility. Palaeodemography recreates the population structure of a community that existed in past times and takes up the evolutionary changes that have occurred in this structure. Despite having important deficiencies, the data resources used in palaeodemographic researches provide important clues about the population structures of ancient human societies with the help of the various theories and statistical analyses developed. (Acsadi and Nemeskeri 1970; Hassan 1984; Ubelaker 1989; Erdal 2003). Through the life tables constructed with the information obtained from ethnological, historical, archaeological and anthropological studies, it is possible to determine the population size, mortality and fecundity rates, distribution of population according to age groups, the growth rate of the population and life expectancy of a society that existed in past times. We have taken up the gender and age distribution in the Tasmasor community and tried to define the demographic structure of the community.

Gender Distribution

As it is known, the criteria used in macroscopic gender identification from skeletal remains develops with the period of puberty (Acsadi and Nemekeri 1970; Brothwell 1981; Bass 1987; Lasker 1994). Therefore, it is quite difficult to identify the gender of foetuses, infants and children in skeletal remains. Despite the existence of some techniques developed with the aim of gender identification in infants and children (Schutkowski 1993; Scheuer et al. 2000), due to the low accuracy rate of the estimated gender, gender identification in infants and children has not been carried out in this study either and gender identification has been attempted in individuals over the age of 15. According to this, 98 of the 224 skeletons discovered in the Tasmasor graveyard are in this category. Since the skeletons have been generally well-preserved, gender identification has not been possible only in 4, 08% (4 individuals) of the 98 skeletons. Of the remaining 94 skeletons, 54, 84 % are male and 45,16 % are female. Although the number of male skeletons is greater on the whole, the gender ratio of 1,19 is close to the normal distribution of 1. Gender ratios in the Modern Age communities of Aşvankale (Arman 1991) and Aziz Nikolaos (Erdal OD, 1997) are 1.3 and 1.1 respectively, 0.8 in the Middle Age communities of Dilkaya (Güleç 1989), Boğazköy (Wittwer-Backofen 1987) and Tepecik (Sevim 1993), and 6.96 in the İznik Late Byzantine community (Erdal 1996). Leaving aside the İznik community that is largely comprised of soldiers and thus has a higher male representation in the population, it can be stated that with respect to gender distribution in Ancient Anatolian communities there are more men in some communities while there are more women in others. It can also be stated that among all these communities

Tasmasor is placed among the "normal" communities in which men are represented by a higher number of individuals.

Age Distribution

Determination of the age of death in the Tasmasor community has been conducted with the application of the following criteria to the appropriate age groups: calcification process of teeth, growth of bones, fusion phases of the epiphyses, closing processes of cranial sutures, rib ends, symphysis pubis, and auricular surfaces (Ascadi and Nemeskeri 1970; Krogman and İşcan 1986; Lovejoy et al. 1985; McKern and Stewart 1985; Ubelaker 1989; Loth and İşcan 1989; Meindl and Lovejoy 1985, 1989; WEA 1980; Scheuer et al. 2000). The average value of the age criteria applied for every individual has been used as the death age of the individual.

It has been possible to estimate the age of death of 95,56 % (215 individuals) of the 224 skeletons unearthed in the Tasmasor settlement. Of the skeletons in which it has been possible to determine the age of death , 117 (54,42%) have lost their lives under the age of 15. In Ancient Anatolian communities dated back to the Byzantine and the following periods, it is observed that mortality rates in individuals under the age of 15 ranges between 26,18 % and 63,92 % (Figure 3), and that this rate is generally low in Western Anatolian communities and higher in Eastern Anatolian communities. With a mortality rate of 54,4 % Tasmasor has the highest child mortality rate after the Middle Age community of Karagündüz (Özer et al. 1999). The child mortality frequency in the Tasmasor community is close to the mortality rate of 52,9 % in the public burials outside the cavea discovered in the İznik Open Air theatre. These values indicate that among the ancient Anatolian human communities Tasmasor is placed among communities characterised by high child mortality rates.

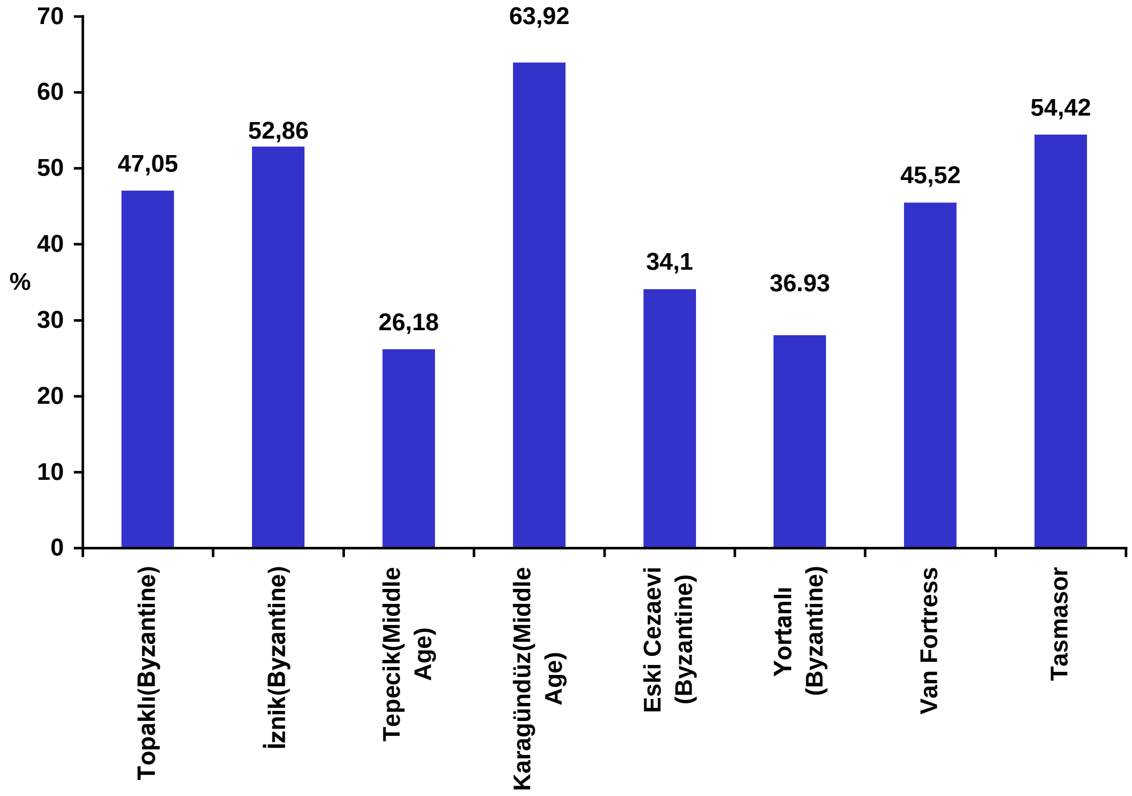

Figure 3: Child Mortality Rates in Ancient Anatolian Human Societies

The Tasmasor community is striking not only with its high rate of child mortality but also with respect to the age range in which childhood deaths occur. Of the 117 individuals that have died before reaching adulthood, 6 have lost their lives in the foetal stage, in other words they have been the victims of premature birth. While the ratio of those dying in the foetal stage is 2,6 % for the whole community, the ratio among children is 5,13 %. In Tasmasor nearly half of the children (48,72 %) have lost their lives before reaching the age of 1. Nearly half of the individuals placed in this group have died before reaching the age of 6 months. Although the occurrence of deaths until the age of 1 is high in the Tasmasor community, from this age onwards the mortality rate decreases rapidly and drops down to 6 % at around the age of 4. Nevertheless, it is observed that approximately 72 % of the children in the Tasmasor ruins site die before reaching the end of their third year. Mortality rates decrease in individuals past the stage of infancy, and the death risk continues to partially decrease until the end of the childhood stage with rates ranging between 1% and 3 %.

Although the Tasmasor skeletal group is similar to Van-Karagündüz (Özer et al. 1999) and İznik (Erdal 1996) communities regarding the high infant and child mortality rates, it also has some distinguishing differences from other groups dated back to the Middle Age and Modern Age with respect to the distribution of deaths according to age groups. For instance, it is emphasised that of the 211 infants and children in the Tepecik Middle Age skeletal group, 28 % have lost their lives before reaching the age of 1 (Sevim 1993). While 79 % of the individuals under the age of one die in the first six months of life, it has been determined that a significant proportion of these (18 individuals) have died at birth or shortly after birth. It has been determined that in the Karagündüz (Middle Age) community, of the individuals under the age of 18 years (n=232), 25,43 % have died under 1 year of age and 71,13 % have died within the first 5 years of life (Özer et al. 1999). In Topaklı (Byzantine period) (n=187) individuals under the age of 5 constitute 20,3 % of the community while those under the age of 10 constitute 34,7 % (Güleç 1988). It is emphasised that the number of children dying within the first year of life reaches half the number of those in the 0-6 age group (Güleç 1988). When foetuses and infants are considered together, the infant mortality rate in the Fortress Van skeletons is 26,90 %. On the other hand, infant deaths among children has the high percentage of 56,06 % (Gözlük et al. 2004). In the Panaztepe Islamic period community 8,33 % of the children have lost their lives under the age of 1 and 29,17 % under the age of 2. When the general community is taken into consideration, the death rate in infants less than 1 years old is 2,4 % (Güleç 1989). It is stated that the ratio of those dying in the 0-5 age group in the community is 27 % in the Van-Dilkaya Midle Age community (Güleç 1987, 1989). When these values observed in Anatolian communities are taken into account, with a mortality rate of 48,72 % for those under 1 years of age, Tasmasor turns out to be the community with the highest infant mortality rate known in Anatolia.

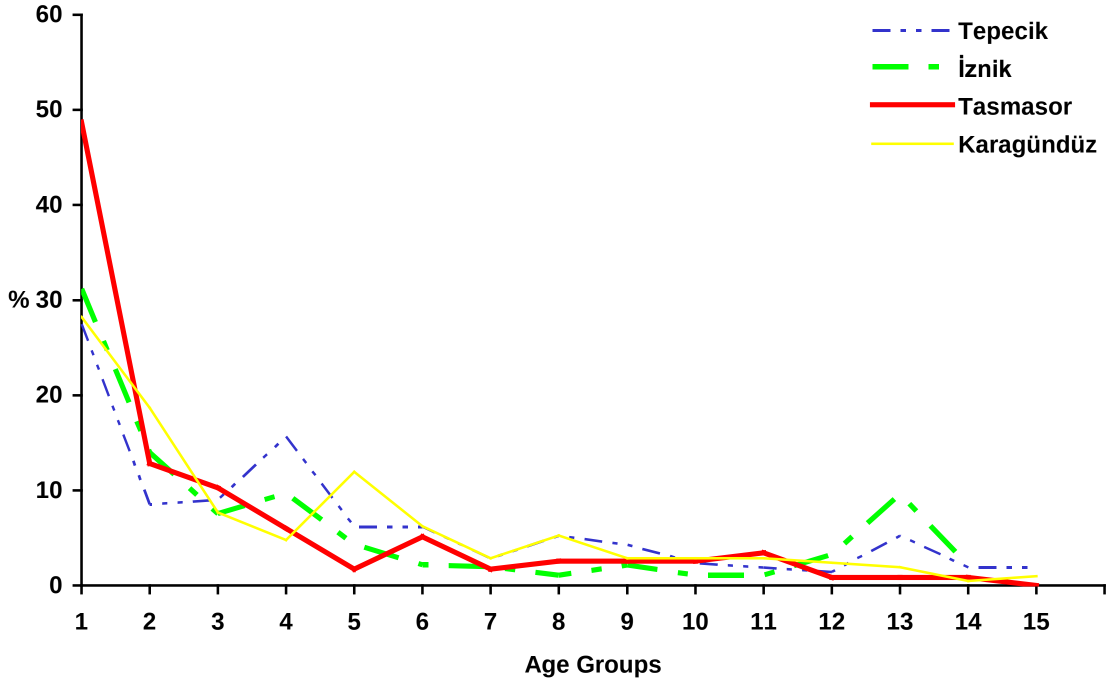

Figure 4: Distribution of Child Deaths According to Age in Ancient Anatolian Human Societies

Mortality rates of individuals under 15 years of age are compared in Figure 4 and this figure clearly demonstrates the difference of child mortality frequency in Tasmasor from other communities. It is observed that while the death frequency occurring in the first three years of life and especially under 1 years of age is higher than in other communities, in individuals past this age the mortality rates follow a course similar to or lower than the one in the other communities. Data pertaining to child deaths in ancient Anatolian human societies dated back to the Middle Ages or the following periods, show that mortality risk is high within the first year of life. This situation is also valid for the underdeveloped or developing countries of today with a largely low socio-economic structure. While the average infant mortality rate per thousand live births is 15 in developed countries, this figure is reported to be higher than 120 per thousand live births in developing countries (Sufian 1990). According to the results of the Population and Health Research in 1993, while infant mortality rate in Turkey is 52,6 per thousand, the mortality rate for those under 5 years of age has been determined as 60,9 per thousand (Hancıoğlu 1993). While the ratio of those dying under 5 years of age is 48 per thousand in Western Anatolia, the figures for Central and Eastern Anatolia are 66,2 per thousand and 70,45 per thousand, respectively (Hancıoğlu 1993). In investigations conducted by taking the regions into account (Tezcan 1985), it has been determined that there are prominent differences between rural and urban settlements. The infant mortality rates of 119 per thousand in urban regions (1982-1977) are around 146 per thousand in rural regions. Infant mortality rates detected in 1967 in provinces with a similar life style based on agriculture have been found to be prominently higher than in cities like Istanbul (Tezcan 1985). Although a reduction in infant mortality rate has been observed from the past to the present with the general improvement in economy and the changes in livelihood economics (the infant mortality rate of 273 per thousand in 1935 has dropped to 95 per thousand in 1982) it is striking to observe that the scale of infant deaths is still very large especially in those living in rural areas and in low socio-economic groups. When both the child mortality rates and the distribution of deaths according to age groups are assessed with the data of today, it is possible to say that similar to the present situation infant deaths used to be an important problem for Eastern Anatolian communities also in the past. Since the Tasmasor community is the one with the highest infant mortality risk in Anatolia, it deserves a special place in the assessment of child deaths and the factors leading to this.

The high mortality rate within the first year of life in ancient Anatolian societies declines from this age onwards and tends to increase once again in later years (Figure 4). While this increase is concentrated in the 3-4 years age group in the Tepecik and İznik communities (Sevim 1993; Erdal 1996), it emerges around the ages of 4-5 in the Van-Karagündüz Middle Age community (Özer et al. 1999). This second rise observed in other communities manifests itself as a slight increase around the age of 6 years in the Tasmasor community. The increase in mortality rates in many ancient human communities that occurs around the ages of 2-5 with high infant mortality rates is explained by the following processes: the reduction in the immune support from the mother after weaning, inadequate, irregular and unbalanced nutrition, bad hygienic conditions, adverse environmental conditions, the process of adaptation to supplemental foods after weaning, spoiling of food quality and ingestion of agents causing disease through spoiled foods and increase in infectious diseases (Angel 1971, 1976, Angel and Bissel 1986; Özer et al. 1999; Uysal 1993, 1995; Güleç 1987, 1988, 1989a, b; Sevim 1993; Erdal 1996, 1998; Özbek 1990). Unlike in other communities, the observation of such an increase in Tasmasor indicates that weaning cannot be the sole factor in infant and child deaths or that factors more influential than weaning must have been present from the early years of life. It is not possible to determine the probable causes of infant and child deaths from death frequency. In this age group the frequency of diseases reflected in the bones can provide some clues for the analysis of death causes. Therefore, child deaths are taken up once again by examining diseases that are reflected in the bones.

Demographic Structure in Adults

The decrease in mortality rates in Tasmasor starting at the end of the first year of life continues also in adolescence. In Tasmasor the average age of death for individuals over the age of 15 is 38,46. Men (39,32 years) live approximately 1 year longer than women (38,45 years) (Table 5). These figures become meaningful when assessed together with the averages of the age of death in ancient Anatolian communities.

Table 5: Average Ages of Death in the Tasmasor Community

	N	X	Sd
Man	51	39,32	9,689
Woman	41	38,45	10,865
Adult	96	38,46	10,651

While ancient Anatolian communities such as the communities of Tepecik (Sevim 1993), Karagündüz (Özer et al. 1999) and Dilkaya (Güleç 1989a) constitute groups with an average age of death of over 40 years and with a relatively later age of death, communities such as İznik, Topaklı, Boğazköy, Eski Cezaevi and Değirmentepe constitute groups with an early age of death before the age of 35. Tasmasor, on the other hand, has a life span of medium length like the Yortanlı and Panaztepe communities with an average of 38,5 years. (Table 6).

Table 6: Death Age Averages in Ancient Anatolian Communities

Community	Period	N	X	Researcher
İznik	Late Byzantine	413	30.6	Erdal, 1996
Topaklı	Middle Age	87	32.8	Güleç, 1988
Boğazköy	Byzantine	127	33.0	Wittwer-Backofen 1987
Eski Cezaevi	Late Byzantine	27	34.3	Erdal 2003
Değirmentepe	Middle Age	27	34.4	Özbek, 1986
Yortanlı	Late Byzantine		37.3-38.4	Nalbantoğlu ve ark. 2000
Tasmasor	Modern Age	96	38,5	Bu çalışma
Panaztepe	İslamic	47	38.6	Güleç, 1989b
Tepecik	Middle Age	443	41.4	Sevim, 1993
Karagündüz	Middle Age	73	45.0	Özer ve ark. 1999
Dilkaya	Middle Age	21	43.5-45.6	Güleç, 1989a

The one year difference between the sexes in the death age averages manifests itself also in the life expectancies of women (23,48 years) and men (24,36 years) (Table 7). However, life tables and the life curves obtained from them show that the two sexes have different mortalities according to age groups. Men and women who have similar mortality curves till the age of 25, start displaying different patterns from each other from this age onwards (Figure 5). While men have a lower mortality rate and a uniformly decreasing death curve starting from around the age of 30, women have high mortality between the ages of 25-40. While men can live up to the age of 55 at the most, only women in the community can live beyond this age. These values lead to a differentiation of mortality and life expectancies between men and women in the community. While life expectancy for men is approximately 1 year longer than that for women up to the 25-30 age group, from this age group onwards the life expectancy of women exceeds that of men (Table 7). These findings indicate that high infant mortalities in the community bring along higher fecundity rates as well, that women of child-bearing age have higher death risk and that women past their child bearing years both increase their ratios in the community and can live longer than men.

Table 7: Life Tables in the Tasmasor Community

	Man				Woman				General			
X	Dx	dx	lx	e(x)	Dx	dx	lx	e(x)	Dx	dx	lx	e(x)
5	-	-	-	-	-	-	-	-	93	43,26	100,00	19,41
10	-	-	-	-	-	-	-	-	17	7,91	56,74	27,30
15	-	-	-	-	-	-	-	-	7	3,26	48,84	26,31
20	3	5,88	100,00	24,36	2	4,88	100,00	23,48	10	4,65	45,58	23,01
25	1	1,96	94,12	20,73	1	2,44	95,12	19,55	2	0,93	40,93	20,34
30	4	7,84	92,16	16,12	9	21,95	92,68	15,00	13	6,05	40,00	15,76
35	6	11,76	84,31	12,38	1	2,44	70,73	13,88	7	3,26	33,95	13,12
40	12	23,53	72,55	8,99	12	29,27	68,29	9,29	24	11,16	30,70	9,24
45	9	17,65	49,02	7,10	7	17,07	39,02	9,37	16	7,44	19,53	8,10
50	9	17,65	31,37	4,69	0	0,00	21,95	9,72	9	4,19	12,09	6,54
55	7	13,73	13,73	2,50	7	17,07	21,95	4,72	15	6,98	7,91	3,68
60	0	0,00	0,00	0,00	0	0,00	4,88	7,50	0	0,00	0,93	7,50
65	-	-	-	-	2	4,88	4,88	2,50	2	0,93	0,93	2,50
70	-	-	-	-	0	0,00	0,00	0,00	0	0,00	0,00	0,00

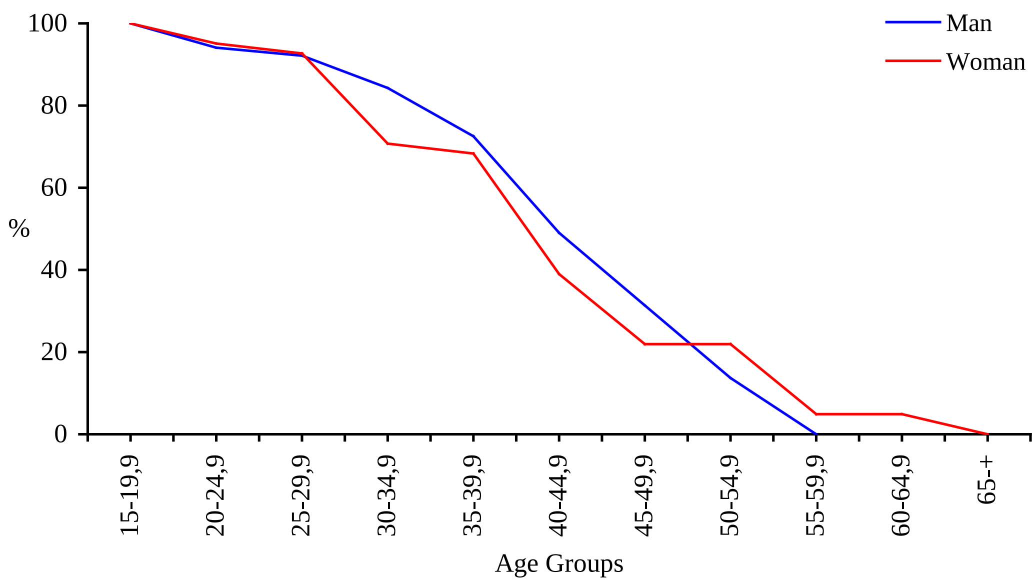

Figure 5: Life Curves of Men and Women in Tasmasor

When the Tasmasor community is compared to the communities of the Middle Age and the following periods that have a relatively higher number of individuals with respect to their life curves (Figure 6), it can be stated again that high infant and child mortalities are a distinguishing feature of Tasmasor. Unlike other communities, although a marked reduction in mortality rates is observed after this period, the proportion of adults in the Tasmasor community cannot come close to the representation ratios of adults in the population in the other communities. The probable reasons for such a demographic structure can be analysed only by a detailed investigation of the health structure of infants, children and adults in the Tasmasor community.

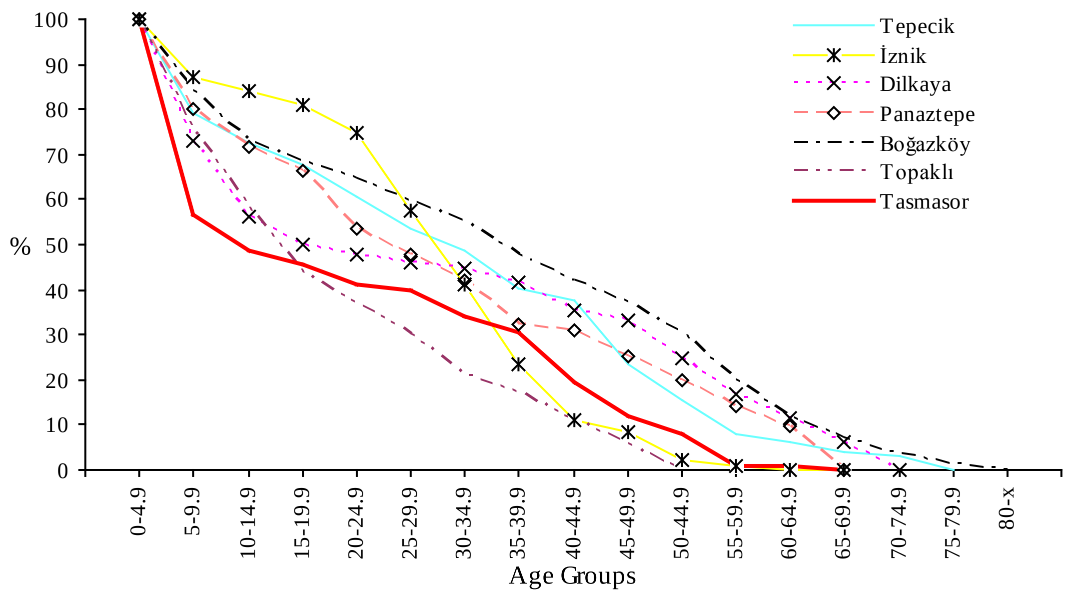

Figure 6: Life Curves in Ancient Anatolian Societies

Health Structure in the Tasmasor Community

There are two basic ways to glean information on the health structures of ancient human communities. Archaeological remains, literary and artistic works comprise the first way. Numerous diseases like dwarfism, kyphosis, infections and infectious diseases have been the topics of contemporary documents, iconographic works, sculptural findings and literary and artistic works related to both the manifestations of these diseases in humans and to how they are treated (Roberts and Manchester 1995; Larsen 1997; Mays 1998; Ortner 2003; Erdal 2003). Although such resources harbour important clues to the presence of diseases in ancient human communities, the largely limited nature of the information and the speculative nature of the interpretations make the reliability of the evidence obtained controversial. Artists and authors provide some information by describing or depicting mostly striking and visible diseases, but diseases generally have much deeper impacts than what can be observed. Human remains comprised of bones, teeth and dried soft tissues constitute the other and more reliable way of obtaining information on the health structures of ancient human communities since they provide direct information on the health structures of individuals and societies. Therefore, human remains such as mummies, bones and teeth constitute the basic material used in the diagnosis of diseases in a large portion of palaeopathological researches. Palaepathology is the branch of science that studies the health structure of ancient human communities, the evolution and spreading of diseases and their impact on human communities and how people adapt to changing environmental conditions (Erdal 2003). The method of study in palaeopathology is generally based on the macroscopic observation and definition of the abnormal changes detected in the skeletons. Yet, diseases that cause the death of the individual in a short period of time cannot leave any traces in tissues like the skeleton and teeth. Therefore, the traces observed in the skeletons belong to diseases that follow a “chronic” course, affect the person for a long time and impair his/her tissues, organs or metabolism rather than to “acute” diseases that cause the death of the individual in a short period of time (Larsen 1997; Ortner 2003; Erdal 2003). The Tasmasor community is taken up from macroscopic and radiological perspectives with respect to the marker lesions of skull and body traumas, specific and non-specific infections, vitamin deficiencies, endocrinological disorders and anaemia that are frequently encountered in skeletons and the distributions of diseases according to age and gender are given in detail in Tables 8 and 9.

Table 8: The Distribution of Diseases According to Gender in the Tasmasor Community

	Man		Woman		General		χ^2	P
	n/N	%	n/N	%	n/N	%		
Traumas								
Head	17/49	34,7	12/43	27,9	31/175	17,7	0,489	P: 0,509
Body	19/50	38,0	12/41	29,3	35/175	20,0	0,765	P: 0,505
Infections								
Non-Specific	10/47	21,3	9/41	22,0	77/186	41,4	0,006	P: 1,000
Specific	2/48	4,2	3/40	7,5	11/172	6,4	0,452	P: 0,656
Metabolic Diseases								
Vitamin C deficiency	0/47	0,0	0/38	0,0	1/166	0,6	-	-
Vitamin D deficiency	1/48	2,1	4/41	9,8	20/174	11,5	2,455	P: 0,176
Endocrine disorder	0/49	0,0	1/40	2,5	3/170	1,8	1,239	P: 0,448
Osteoporosis[1]	9/46	19,6	18/40	45,0	31/123	25,2	9,477	0,024
Cribra orbitalia[1]	7/48	14,6	6/40	15,0	55/175	31,4	6,984	0,072
Porotic hyperostosis[1]	17/49	34,7	10/41	24,4	59/184	32,1	1,327	0,723

n: Number of individuals with the disease N: number of individuals examined for the disease
1: sd: 4; P: Fischer's exact χ^2 test

All injuries that partially or completely impair the integrity of a bone are considered under the concept of trauma (Lovell 1997; Ortner 2003). Traumatic changes on the bone that are grouped as partial or complete fracture of the skeletal bone, the dislocation or luxation (subluxation) of a joint, or conscious changes occurring in the basic structure or morphology of the bone (Ortner and Putschar 1985; Roberts and Manchester 1995; Lovell 1997) constitute one of the most basic data resources used in the determination of the relations of a community with the environment it inhabits (Lovell 1997).

In the Tasmasor community, in a total of 175 individuals that could be studied with respect to traumas, head injuries have been detected at a ratio of 17,7 % and body injuries at a rate of 20 % (Table 8). Men are observed to have more head traumas than women (34,7 % vs. 27,9 %). Although there is a 6,8 % difference between the sexes in favour of men, this difference is not statistically significant (Table 8). Although head injuries start to be observed from the stage of infancy, they are observed to have a rather low frequency in individuals that have not reached the stage of adulthood (Table 9). It can be said that the frequency of head injuries significantly increases with the onset of adulthood. Head injuries are observed in approximately two thirds of young and middle aged individuals indicating that individuals in these age groups are exposed to more trauma than others. Head injuries are relatively low in elderly individuals. There is a statistically significant difference between head injuries and age groups (Table 9).

A significant part of the head injuries in the Tasmasor community are as oval depressions smaller than 2 cm. Most of the injuries affect the tabula externa and diploe but do not extend as far as the tabula interna (Figure 21-23). All the injuries have healed. Of the 31 individuals in the community in whom injuries have been observed, there is only one mark of injury in 71 % (22 individuals), 2 marks of injury in eight individuals , and 3 marks of injury in one individual. Apart from one man (M-200), it can be stated that the injury marks do not arise from incisory and penetrating weapons. In the individual numbered M-200 an injury starting from the right eyebrow arch and affecting the nasal bones and even the lower edge of the left eye that has been inflicted by an incisory weapon has been detected (Figure 24). Of the 41 injury marks observed in the skulls, 53 % are on the right, 39 % are on the left and 8 % are in the middle line.

The frequency of injuries to the body bones in the whole community is 20 % (Table 8). It is striking that just as in head injuries, there is a difference in favour of men also for body injuries (Table 8). Men have more injuries than women (38 % vs. 8,7 %) The distribution of body injuries according to age groups shows a prominent difference from head injuries although their occurrence frequency both in the community and in the sexes indicates a pattern similar to that of head injuries. Injuries have not been observed in children and adolescents despite the greenstick bone fracture type of lesions observed in 2 infants in the community. The rate of 19 % in young adulthood increases up to 73 % in elderly individuals. Likewise, the distribution of body injuries according to age groups is statistically significant as well (Table 9).

Table 9: The Distribution of Diseases According to Age Categories in the Tasmasor Community

	Infant		Child		Adolescent		Young Adult		Adult		Elderly		χ^2	P
	n/N	%	n/N	%	n/N	%	n/N	%	n/N	%	n/N	%		
Traumas														
Head	1/41	2,4	1/36	2,8	0/4	0,0	7/21	33,3	15/45	33,3	7/27	25,9	25,445	0,000
Body	2/44	4,55	0/34	0,00	0/4	0,0	4/21	19,0	10/36	21,7	19/26	73,1	61,973	0,000
Infections														
Non-Specific	42/58	72,4	14/37	37,8	1/3	33,3	4/17	23,5	8/44	18,2	8/27	29,6	37,716	0,000
Specific	1/45	2,2	3/34	8,8	1/3	33,3	1/19	5,3	3/45	6,7	2/26	7,7	4,304	0,636
Metabolic Diseases														
Vitamin C deficiency	0/44	0,0	1/32	3,1	0/3	0,0	0/18	0,0	0/45	0,0	0/24	0,0	4,313	0,648
Vitamin D deficiency	9/46	19,6	6/34	17,6	0/3	0,0	1/18	5,6	1/46	2,2	3/26	11,5	10,069	0,185
Endocrine disorder	0/41	0,0	0/34	0,0	1/3	25,0	1/20	5,0	0/46	0,0	0/25	0,0	30,756	0,000
Osteoporosis	-	-	-	-	-	-	1/19	5,3	13/44	29,5	15/25	60,0	49,391	0,000
Cribra orbitalia	24/51	47,1	17/33	51,5	3/3	100,0	5/18	27,8	5/44	11,4	1/26	3,8	45,946	0,000
Porotic hyperostosis	22/53	41,5	11/34	32,4	2/4	50,0	5/21	23,8	16/45	35,5	4/26	15,4	14,274	0,711

n: Number of individuals with the disease N: number of individuals examined for the disease

Rib fractures make up an important proportion of the injuries observed in the body bones (10 individuals). Of the individuals with rib fractures, while there is only one fracture in each of the 7 individuals, there are two fractures in each of 2 individuals and there are 4 rib fractures in one individual (Illustrations 25-28). After rib fractures, the second highest rate of body fractures has been observed in the fore arm bones (7 individuals). Four of the fractures encountered in the fore arm bones are fractures also known as the *Colles* fracture observed in the lower ends of the radius and ulna bones and associated with falls (Roberts and Manchester

1995; Larsen 1997; Ortner 2003) (Illustrations 29-30). In the other 3 individuals these bones are broken from the middle of the corpus (Illustrations 31-32) (*parry fracture*). Fractures in the hand and foot bones constitute the other type of trauma encountered in the body bones. Hand bones are broken in 5 individuals and toe or metatarsal bones are broken 5 individuals (Illustration 33). Limited to one case for each, injuries in the clavicle (Illustration 34) and patella have also been detected. Pathological fractures due to osteoporosis have been observed in the femoral neck of one elderly woman and at the lower end of the sacrum in another woman (Illustration 35). Although compression fractures due to osteoporosis have been detected in the vertebrae of elderly individuals, such injuries have not been included in the determination of trauma frequency – in other words, they have not been included in the study. In the community there are tibia injuries in 6 individuals and fibula injuries in 3 individuals. While the tibia and fibula bones are broken in one of the injuries encountered in the lower leg bones, the other traumas that have occurred have been mostly in the form of additional bone formations or ligament lacerations due to crashes. As has been the case for skull injuries, healing marks have been detected in all the fractures of the body bones.

As it is known, injuries occurring in the skull due to battles or fights are mostly of large dimensions and at least some of them are expected to be lethal (Lovell 1997; Jurmain 2001; Ortner 2003). Since most people use their right hands (the frequency is accepted to be around 90 % in all communities), traces of injury due to battles and fights mostly occur on the left side of the skull (Walker 1989; Larsen 1997; Lowell 1997). Although the real cause of healed injuries cannot be fully determined, injuries due to battles and systemic fights concentrate in the skeletons of young and middle aged individuals. Since the head injuries in the Tasmasor community are mostly of small dimensions and in the form of depressions, a significant proportion of the injuries are located on the right side and none of the injuries have resulted in the death of individuals, we are inclined to think that the head injuries in this community have not occurred as a consequence of intra or inter group battles or fights.

The mode of body traumas and their distribution on the skeleton also provide important clues to the determination of the factors that lead to these injuries (Larsen 1997; Lovell 1997). *Colles* fractures occurring in the fore arm bones, fractures occurring in the lower part of the lower leg skeleton and fractures observed in the rib and clavicle bones are accepted to arise from actions such as falls and crashes (Lovell 1997; Neves 1999; Jurmain 2001; Ortner 2003). The traumas observed in the Tasmasor community have occurred as compression fractures, fractures due to sprains and twisting and shear fractures due to the intersection of two different physical stresses (Ortner and Putschar 1985; Lovell 1997; Ortner 2003) Since such types of injuries are associated with accidents like falls and sprains, it is suggested that the topographical characteristics of the environment the community is living in and the probable life style of the community should also be taken into consideration (Larsen

1997). Although Tasmasor is a flat plain covered with alluvium in the surrounding areas, there are andesite and basalt covers to the east and south and it is closely located to the slopes of the Neogen volcanic hills (Sözer 1970). The area surrounding the graveyard is rugged terrain and there are steep slopes in the region, so it is likely that falls must have been influential in the traumas. The *Colles* fractures (Roberts and Manchester 1995; Larsen 1997; Ortner 2003) observed in four skeletons and directly associated with falls provide a strong evidence for this view. The climatic, topographical and soil characteristics of the region where the Tasmasor settlement is located indicate that this region is not suitable for agriculture. Tasmasor and the surrounding areas' not being suitable for agriculture suggests that the people of the region must have relied on stock raising as a life style in the past just as it is the case today. When the topographical characteristics of the region are also taken into account, accidents affecting the locomotor system resulting from the means of livelihood like animal grazing seem to be the fundamental cause of the injures that have occurred in the Tasmasor community. However, means of livelihood and the topographical characteristics of the region cannot be solely held responsible for the traumas observed in the community. As it is known, lysis of the bones (*osteoporosis*), causes an important increase in the fractures due to falls in the elderly with the restriction of physical activity and the weakening of the reflexes (Larsen 1997; Steinbock 1976). The frequency of such injuries also defined as pathological fractures is high in elderly individuals, especially in elderly women (Larsen 1997; Ortner 2003). Although the women of Tasmasor have a lower trauma frequency than men (Table 8), the increase in injuries observed with advancing age and the reaching of the frequency to a rate as high as 73,1 % in the elderly individuals (Table 9), shows that falls due to restriction of physical activity in the later years are also influential in traumas. In fact, the presence of pathological fractures observed in two individuals also lends support to the view that accident related situations constitute one of the fundamental causes of injuries.

Although the presence of traumas in ancient Anatolian communities is mentioned in many publications, the traumas' distribution in the community and their relationship with life style have not been adequately addressed (see Özbek 1993). Of the two communities in which traumas have been taken up systematically, in the Kovuklukaya community injuries observed in 42 % of the skulls and 61 % of the body bones have been evaluated with respect to their dimensions and distributions in the skeleton and it has been concluded that most of them are associated with accidents involving falls and crashes (Erdal 2004). The higher rate and severity of the injuries encountered in the men of Kovuklukaya has been associated with the men's being involved in daily tasks with high trauma risk like forestry and lumber work. In the İkiztepe Early Bronze age community the 241 injury marks encountered in 18,8 % of all individuals, in 28,9 % of adults and in 42,4 % of men have been assessed with respect to shape, dimensions and distributions on the skull, and based on the unhealed injuries caused by incisory and penetrating weapon injuries observed only in male skulls it has been concluded that the İkiztepe community has been intensively confronted with battles (Erdal 2005).

Both the shape and the frequency of the injury marks observed in the Tasmasor community lends further support to the view that the head injuries in the community do not arise from systematic fights. However, it is not possible to say that the people of Tasmasor have not been involved in fights at all. In fact, the healed fracture encountered in the nasal bone of one skeleton and the oval depression type of injury reaching as far as the tabula interna encountered in one child and the incision mark on the facial part of one skeleton that starts from the nose and passes down the lower edge of the orbital fossa indicate that there have also been individual fights in the community and that incisory and penetrating weapons have also been used in the fights occurring from time to time. The presence in the middle part of the fore arm bones of three male individuals (M-154, M-178 and M-221) of traumas defined as defence fractures *(parry fracture)* that are thought to result from the protection of the skull and body with the arm during a fight (Larsen 1997; Ortner 2003; Aufderheide and Rodriguez-Martin 1998) shows the existence of fights in the community. Since the fight-related injuries are extremely limited (6 individuals), they are more likely to have an individual nature rather than being systematic fights or battles occurring in the community. Findings like the higher prevalence of head injuries in men, seeing defence fractures that are observed in the middle of the fore arm bones only in men and the general observation of injury marks in men indicate that men have been more active in fights or that it is men who have been mostly involved in fights. In an overall assessment; accidents based on the means of livelihood and the topographical characteristics of the region, restriction of physical activity and weakening of reflexes caused by old age and individual fights may be held responsible for the injuries in the Tasmasor community.

During the history of mankind communities have been faced with many infectious diseases caused by bacteria, viruses and parasites (Larsen 1997). It is accepted that in the past infections caused by virus and bacteria entering the body have been more influential in the deaths of humans than battles and famine (Roberts and Manchester 1995). Yet, not all infections lead to diseases and of the many infections that result in death only those with a chronic course can leave traces on the bones. (Ortner and Putschar 1985; Roberts and Manchester 1995; Larsen 1997). Although relatively few infectious diseases leave traces on the skeleton, the studying of diseases that leave traces on the bones is quite important in the determination of ancient human societies' environmental adaptation processes and their health structures. As elsewhere, the infections in the Tasmasor community have also been classified according to their causes in two main groups as the specific and non-specific ones.

As it is known, the infections' lesions on the skeleton develop mostly in the bone membrane (periosteum) and as the severity of infections increases the infection can spread towards the marrow (Larsen 1997). Infections developing in the periosteal tissue, can be localised in one bone or in one region of a bone or they can involve more than one bone if the diseases has become widespread or systematic. Different from periostitis, in osteomyelitis the infection involves both the periosteal and endosteal tissue and the pus drains out through a hole. The infection is associated with organisms like *Staphylococcus, Streoptococcus, Escherichia coli, Salmonella typhi,* and *Nesisseria gonorrhoeae*, and lesions like periostitis and osteomyelitis caused by these micro organisms on the bones provide quite important information for the determination of the health structure of the society (Larsen 1997).

With the rate of 41,4 % non-specific infection diseases constitute the most frequently encountered disease in the Tasmasor community. The frequency of the disease is quite similar in men (21,3 %) and women (22,0%) (Table8). Nevertheless, non-specific infection diseases display marked differences according to age groups (Table 9). The frequency of the disease which is 72,4 % in infancy, drops down to 37,8 % in children and with a further reduction in the later years it drops to 18,2 % in the middle age category. The frequency of the disease rises again to 29,6 % in the elderly. The relationship between non specific infection diseases and age categories is statistically significant (Table 9).

In addition to the distribution of frequency according to age groups, the distribution of the frequency of infectious diseases on the skeleton also displays differences with respect to age categories. In 56 individuals comprised of infants and children, infections in the form of periostitis have been observed in 64 regions. % 62,5 % of these lesions have affected the tibia bones (Illustrations 36-37). On the other hand, 25 % of the periosteal infections are in the form of subdural infections that generally manifest with new bone formations in the inner part of the skull and in the inner surface of the frontal, parietal and occipital bones (Illustrations 38-39). In 4 individuals the infection involves the femur bones (Illustration 40), and in 2 individuals it involves almost all the long bones. Infections on the bones are generally in the form of subperiosteal new bone formations or pore formations on the periosteal surface. Although the infection in infants and children is spread in limited areas of the body like the tibias and the inner surfaces of skulls, in adulthood the areas involved on the skeleton are more varied. As is the case in children, the most frequently infected bones in adults are the tibias. In women, in addition to the infections observed in the tibias of 8 individuals, one infection is observed in the ulna, humerus and fibula, one in each. While sinusitis is encountered in one individual in each sex, infections have been observed in tibias in 6 individuals and one infection has been observed in each of the toe and metatarsal bones and femur and fibulas. Of the 12 individuals, while in 8 individuals the infection in the tibias has lost its activity (Illustration 41), the infections in the other individuals have been observed to be trauma-related and two of them have been observed to develop into osteomyelitis (Illustrations 42-44). In fact, there are also a limited number of other diseases that cause traumas and infections in the body bones at the stage of adulthood.

In the Tasmasor community there are also infectious diseases due to specific causes. However the rate of specific infections is 6,4 % which is quite low compared to non-specific ones. While the rate of infections is higher in women (7,2 %) than in men (4,5%), the difference between the gender groups is not statistically significant. (Table 8). Infections due to specific causes display some differences also with respect to age groups. Infections increase from infancy to adolescence and from young adulthood to old age. Nevertheless, it has been observed that infections thought to have resulted from specific causes have similar lesions in both the childhood and adulthood stages. The lesions detected in 9 out of 11 individuals with specific infections are characterised by subperiosteal new bone formations that manifest themselves attached to the periosteum in the inner surfaces of the rib bones (Illustration 45). However, in the skeleton numbered M-58, damage in the anterior part of the thoracic and lumber vertebrae and cavities that can be also observed macroscopically in the corpus vertabra have developed in addition to the infection in the ribs (Illustrations 46a, b). In the skeleton numbered M-113, on the other hand, there is damage in the tabula interna and diploe in the inner surface of the left parietal bone in addition to the infection and thickening observed in the ribs. In the individual numbered M- 160 the infection has affected the sacroiliac joint, a trabecular structure has appeared on the auricular surface and cavities have developed (Illustration 47). Such lesions encountered at the rate of 5,8 % in the whole community suggest that tuberculosis is present. As it is known tuberculosis is an infectious disease caused by micro organisms of the *Mycobacterium* genus. In tuberculosis the infection spreads via blood from soft tissues like the lungs to regions where spongious tissue is highly concentrated, primarily the vertebrae; and joints, metaphyses of long bones, pelvis, skull and the ribs constitute the regions that are most frequently affected from this infection (Aufderheide and Rodriguez-Martin 1998; Ortner 2003). The traces of infection observed in the inner surface of infant and child skulls in the Tasmasor community have been associated with the disease also known as tuberculosis meningitis by many researchers (Lewis 2004; Santos and Roberts 2001; Hershkovitz et al. 2002; Kiper et al. 1997). Although numerous diseases like bone tumours, subdural haemorrhages and vitamin deficiencies as well as non-specific infections like congenital syphilis, upper respiratory tract infections, otitis media, typhoid fever and gastroenteritis have been held responsible for these lesions, infections including tuberculosis and subdural haemorrhages are among the most important reasons (Lewis 2004). Although highly progressed examples of the above mentioned lesions have not been encountered in the Tasmasor community, when the infection traces observed in the inner surface of the ribs and additional bone formations are assessed together with the severe formations observed in the inner surface of the children's skulls the presence of tuberculosis in the community seems to be highly likely. Lesions due to tuberculosis can emerge in the surfaces of one or more ribs facing the abdominal cavity and in the bone-cartilage border of the ribs. Infection spreads to the ribs mostly via blood circulation and as is the case in the Tasmasor community the ribs in the middle region from the 4^{th} to the 8^{th} rib are more frequently affected than the upper and lower ribs (Aufderheide and Rodriguz-Martin, 1998; Ortner 2003). In modern samples, although the involvement of ribs has been detected in a limited number of samples like 9 %, rib lesions are more frequently encountered in children (Ortner 2003). Though tuberculosis affects the ribs, there are many diseases that could lead to such deformities in the ribs and it is very hard to diagnose these diseases from dry bones (Ortner 2003, Aufderheide and Rodriguez-Martin 1998). Skull involvement is quite widespread in children in contrast to adults. Traces of infection have been detected in the frontal, parietal and occipital bones especially in children under 10 years of age (Illustration 48). The infection spreads via blood also to this region and it can cause vascular lesions and lytic lesions not larger than 2 cm in the inner surface of the skull (Ortner 2003, Aufderheide and Rodriguez-Martin 1998). The prevalence of secondarily developing skull lesions in individuals in the growing phase in the Tasmasor community indicates that tuberculosis can be among the probable causes. However, for the definitive diagnosis of the disease in the community the samples have to be examined with DNA analysis.

Apart from the samples bearing the traces of probable tuberculosis disease in the Tasmasor community, the other infection disease encountered is cerebral palsy also known as poliomyelitis. Cerebral palsy is caused by a RNA virus considered among the *enteroviruses*. Since the virus maintains its activity for days at room temperature, the mode of contagion is accepted to be via the oral route. The virus which settles in the upper respiratory tract is reported to grow in the anterior horn cells of the spinal cord in poliomyelitis (Prince 1996). In poliomyelitis, loss of power and paralysis in the cranial and skeletal muscle groups develop when the brain is involved. While no direct skeletal trace is observed in poliomyelitis, bone atrophy occurs due to changes in soft tissue and especially due to paralysis of the muscles (Prince 1996; Aufderheide and Rodriguez-Martin 1998). The individual numbered M-83 that has been unearthed with the left leg drawn to abdomen (Illustration 49), is around the age of 10-11. This child skeleton has been determined to have a prominent side difference with respect to lower extremity development starting from the pelvis skeleton (Illustrations 50-52). In the skeleton the right ilium, ischium, pubis, femur, tibia, fibula, tarsal and metatarsal bones have normal development. The left femur has remained short (Illustration 51), and muscle attachment regions and the parts at the lower and upper ends of the bone have not developed. The corpus of the left femur has become cylindrical and the forward curvature of the femur corpus has increased. The torsion angle in this bone has risen to 45 degrees. In the left tibia and fibula all the edges and muscle attachment sites are nearly effaced (Illustration 51). These bones have become cylindrical just like the femur (Table 10). In this individual the left leg bones are radiographically observed to be more osteoporotic than the right leg bones (Illustration 53).

Table 10: Length, Circumference and Diameter Measures in Some Bones of the Tasmasor Individual numbered M-83

	Right	Left	Difference (mm)	Difference (%)
Humerus				
Maximum Length	250,0	246,5	3,5	1,40
Maximum Diameter	17,8	17,5	0,3	1,69
Minimum Diameter	13,3	13,9	-0,6	4,51
Minimum Circumference	51,0	53,5	-2,0	3,92
Radius				
Maximum Length	182,0	176,0	6,0	3,30
Mid Corpus Antero-Posterior Diameter	9,5	10,1	-0,6	6,32
Mid Corpus Transverse Diameter	11,6	12,0	-0,4	3,45
Minimum Circumference	35,5	39,0	-3,5	9.86
Ulna				
Mid Corpus Antero-Posterior Diameter	9,5	10,2	-0,7	7,37
Mid Corpus Transverse Diameter	12,9	16,4	-3,5	27,13
Minimum Circumference	31,0	34,0	-3,0	9,68
Ilium				
Alar (Wing) Width	106,0	100,5	5,5	5,19
Alar (Wing) Height	103,5	103,0	0,5	0,48
Femur				
Maximum Length	331,0	293,0	38,0	11,48
Mid Corpus Antero-Posterior Diameter	22,2	14,3	7,9	35,58
Mid Corpus Transverse Diameter	17,4	13,9	3,5	20,12
Antero-Posterior Diameter Beneath the Trochanter	20,4	14,1	6,3	30,88
Transverse Diameter Beneath the Trochanter	21,4	15,0	6,4	29,91
Minimum Circumference	62,0	44,0	18,0	29,03
Tibia				
Maximum Length	267,0	238,5	28,5	10,67
Antero-Posterior Diameter at the Level of Foramen Nutricium	22,9	13,4	9,5	41,49
Transverse Diameter at the Level of Foramen Nutricium	16,3	14,3	2,0	12,27
Minimum Çevre	56,0	45,0	11,0	19,64
Fibula				
Maximum Length	-	232,5	-	-
Minimum Circumference	29,0	25,0	4,0	13,79

Anthropometric data indicate a marked growth disorder in the left side bones starting from the bones comprising the coxae. The femur and tibia on the left side are shorter than the ones on the right by respectively 38 and 28,5 mm. These data show that the size difference compared to the right side is approximately 11 %. When diameter measurements are taken into account, the left leg bones are 12-36 % thinner than the normal bones on the right side. These data reveal that there is an important growth and development disorder in both the lengths and widths of the bones starting from the left coxae to the metatarsal bones.

Poliomyelitis has mild clinical symptoms in most people. In only a small number of the infected patients do the viruses attack the central nervous system. As a result of this muscle paralysis develops with the involvement of the lower motor neurons of the spinal cord. Although death usually stems from the impairment of the respiratory muscles, various degrees of permanent neurological impairment and consequent paralysis in the muscles develop. Although clinical symptoms cannot be detected in archaeological skeletal remains, osteoporosis is observed in both the cortical and spongious tissues of the affected bones as a result of the muscular paralysis. In children, on the other hand, morphological and developmental impairment of the bones occur in the affected extremity (Aufderheide and Rodriguez Martin 1998). In the skeleton numbered M-83, it is highly likely that the bone growth disorder and the soft tissue, especially muscular atrophy-related deformity observed in the left leg starting in the ilium and extending as far as the metatarsal bones is a neurological disorder, poliomyelitis in particular.

One of the rarely encountered metabolic diseases in the Tasmasor community is vitamin C deficiency (scurvy). In the skeleton numbered M-162 of a 9-9,5 year old child tissue deformities in the form of *haematom*a (calcification of blood that comes out after injury) have been encountered in the tibia bones (Illustration 54). *Haematoma* has developed in the lower and upper jaw alveolar arch in the same individual (Illustration 55 a and b). As it is known, ascorbic acid also known as vitamin C is abundant mostly in citrus fruits and green vegetables. Mother's milk contains adequate vitamin C. Lack of vitamin C intake leads to bleeding in the gingival and periosteal tissue (Tershakoec and Stallings 1996). People cannot be expected to eat adequate amounts of citrus fruits, fruits and green vegetables in Eastern Anatolia a region where agriculture, and vegetable and fruit cultivation, in particular has a limited place in people's lives, especially during the long winter months. Therefore, it can be stated that eating foods without adequate ascorbic acid content is the cause of the disease.

The most striking metabolic disease in the Tasmasor community is rickets (rachitism) that results from lack of vitamin D. This disease is named as rickets in childhood and osteomalasia in adulthood (Steinbock 1976; Ortner 2003; Aufderheide and Rodriguez-Martin 1998; Ortner and Mays 1998). Together with the parathyroid hormones vitamin D helps in the maintenance of calcium and phosphorus levels necessary for the mineralization of bones. Vitamin D is quite important in the stimulation of the absorption of calcium and phosphorus (Ortner 2003; Aufderheide and Rodriguez-Martin 1998). Cholecalcipherol (D3) is the form of vitamin D that is specific for mammals and it is formed through the radiation with ultraviolet rays of its inactive precursors in the skin (Tershakoec and Stallings 1996). In areas of calcification ossification is dependent on vitamin D. Both the failure to get enough sun light and the lack of vitamin D in the foods consumed leads to growth impairment in the bones. This condition manifests itself primarily in the epiphyseal cartilage matrix where mineralization cannot take place. Morphological deformities through compression occur in the bones that have remained soft due to the failure of the osteid to harden since it cannot calcify (Tershakoec and Stallings 1996; Ortner and Mays 1998; Ortner 2003). While in living individuals there are haematological findings such as low serum phosphate, serum calcium and serum 1,25-(OH)-D levels which are indicators of vitamin D deficiency, on the skeletons it can be detected through formations like metaphyseal swelling in the wrists and knees, concave cupping in the metaphyses, prominence in the costochondral junction (rachitic rosary), larger than normal fontanels, growth retardation, bending of the bones, porotic hyperostosis, cribra orbitalia and enamel impairments in the teeth (Tershakoec and Stallings 1996; Ortner and Mays 1998; Köksal and Gökmen 2000; Ortner 2003; Styne et al. 1996). Although metaphyseal swelling and concave cupping, rachitic rosary at the rib ends, porotic hyperostosis and cribra orbitalia and enamel hypoplasias have been determined in the Tasmasor community, in this study only the severe bending observed in long bones has been accepted as an indicator of rachitism.

In the Tasmasor community rachitism has been observed in 11,5 % of all the individuals (Table 8). The rate of this disease is 19,6 % in infants, 17,6 % in children and 5,6 % and 2,2 % in young adults and adults respectively. Among elderly individuals the frequency of rachitism (*osteomalasia*) is 11,5 %. Since the disease is observed in individuals in almost all age groups, the differences among age groups are not statistically significant (Table 9). Although the ratio in women (9,8 %) is more than 4 times the ratio in men (Table 8), the differences emerging between the sexes are not statistically significant. Rachitism observed in 20 skeletons in the Tasmasor community first appears in 5-6 month old infants, but while the ratio in individuals under 1 years of age (n:31) is 12,9 %, it rises to 35,7 % in individuals between the ages of 1 and 2 (n:14). The disease has been observed in only one individual (11,1%) out of 9 individuals in the 2-3 age group. The ratio rises to 45,5 % in the 3-6 age group (n:11). These data indicate that, as is the case in other communities (Steinbock 1976; Vurgun et al. 1996; Özkan et al. 1999; Ortner 2003), rachitism appears in the first year of life also in the Tasmasor community and leaving aside the low ratio around the ages of 2-3, its frequency gradually increases till the age of 6.

Osteomalasia which is the adult form of rachitism has been observed in 5 individuals. While two of them are in the category of young and middle adulthood, three individuals are in the elderly category. Rachitism observed both in children and adults does not exhibit very advanced forms (Illustrations 56-57). Nevertheless, rachitism generally exhibits a much more severe progression in individuals in the 1-3 age group compared to those both younger and older than this age group. While both tibia and femur bones are affected in sick individuals in this age group, the involvement of femur in adults and tibia in infants is more widespread. While the curvature of the bones occurs with the forward bending of the corpus or 1/3 lower part in the tibias, it occurs with the forward bending of the 1/3 upper part in the femurs. The highly advanced forms of the disease manifesting with morphological deformities in arm bones, curvatures and dwarfism (Steinbock 1976; Ortner 2003) are not observed in the Tasmasor community proving that rachitism shows mild development in this community. In the skeleton numbered M-39 in which the disease is most prominent, only the corpuses of the tibia and femur bones are bent forward and severe enamel hypoplasia has developed in the masticatory surfaces of the second deciduous molar and first permanent molar teeth marked (Illustration 58a-d).

In studies conducted on rickets today, the most influential cause in the occurrence of the disease is the failure to benefit adequately from sun light. (Aufderheide and Rodriguez Martin 1998; Ortner 2003; Ortner and Mays 1998; Larsen 1997). The reason for this explanation is that approximately 90 % of the vitamin D necessary for humans is obtained from the sun (Roberts and Manchester 1995; Larsen 1997). Even though Anatolia has a warm and sunny climatic structure, the climate in Eastern Anatolia including Erzurum is harsh and extremely cold. Today the Erzurum Plain is located on the coldest part of Eastern Anatolia (Sözer 1970). In this region the winter season which lasts for more than half a year usually continues till mid April. The very short summer season is quite hot indicating that the Erzurum Plain has the climatic characteristics of a “severely continental” climate (Tarkan 1974). In the region, the temperature between the months of September-March ranges between – 5 and -35 degrees with colder temperatures in the winter months (Sözer 1970). In the summer months, on the other hand, the temperature rarely exceeds 30 degrees centigrade and can sometimes fall as low as 1 degree. In more than 150 days of every year the weather is freezing cold. Therefore, it is not possible to say that people can adequately benefit from the sun, especially in the winter months. These data indicate that the climate, and especially the cold and cloudy days, is influential in the high frequency of rickets in the Tasmasor community. In fact, the emergence of disease symptoms in both Erzurum and other areas mostly in the spring has been associated with the lower frequency of exposure to the sun in the winter months (Özkan et al. 1999). Although there is no detailed study on rickets in skeletal remains from Anatolia, the frequency of rickets in İkiztepe (in the Black Sea region) Bronze Age children has been found to be 3,9 %. While no rickets is encountered in some communities like Boğazköy, the rate in iznik is 1 % (Özbek 1991). Rickets has been detected in 3 individuals in Tepecik (Sevim 1993) and in 1 individual in Karagündüz (Özer et al. 1999) These data indicate that rickets is an important problem in the İkiztepe (Schultz 1989), Karagündüz and Tepecik communities in the Black Sea and Eastern Anatolia regions where the number of sunny days is scarce and provide the archaeological evidence for the importance of the lack of sun light in leading to rickets. rays.

In addition to the cold climate, it is noticed that the cultural adaptations developed by the people in the region also adversely affect the individuals' benefiting from the sun light. The windows of the houses are small (Illustration 59) because of the large number of cold days in and around Erzurum within the year (Sözer 1970). In traditional Erzurum houses, the rooftops are constructed with overlapping of rafters in an octagonal fashion and the windows are mostly on the roof of the house (Illustration 60). The windows' being constructed on the roof, the extremely small size of the window glasses that let the sun light in, and the existence in some houses built in accordance with traditional architecture of a small window that serves both the function of lighting and a chimney by allowing the smoke to billow through it, all indicate that not enough sun light reaches into households. The infants and children are raised inside the house, behind the windows and that constitutes an important problem that prevents them from being exposed to adequate sun light. (Özkan et al. 1999).

In a study conducted on children aged 0-3 years from Erzurum, rickets has been detected to be present in 6,09 % of 8631 children (Özkan et al. 1999). Rickets which emerges as a largely solved problem in the developed countries, used to be encountered at the frequency of 0,03 % in the U.S.A in the 1960s. Among the underdeveloped countries, this ratio is around 15 % in Iran and around 9 % in Iraq. In Turkey the frequency of the disease has been found to range between 4,1 % and 19 % in children of different age groups (Özkan et al. 1999). The data in Turkey indicate that the frequency of the disease is quite increased in lower socioeconomic groups and are similar to the figures from underdeveloped countries (Özkan et al. 1999). Köksal and Gökmen (2000), on the other hand, state that the frequency of rickets in Turkey is between 5 % and 59 % and they hold traditions, customs and the education level responsible as the factors causing rickets. Failure to adequately benefit from sun light due to cultural reasons such as the swaddling of infants or covering up of their faces is regarded as one of the most important reasons for the emergence of rickets (Köksal and Gökmen 2000). Factors such as dressing children heavily and not taking them out very often because of the cloudy and cold weather during most of the year are also among the cultural reasons that hinder the probability of benefiting from sun light.

Although it has been shown that people of Tasmasor have not benefited adequately from the sun light because of ecological characteristics and cultural practices, it is stated that the lack of adequate exposure to the sun in individuals in the growing phase cannot be accepted as the sole reason for the high frequency of vitamin D deficiency (Köksal and Gökmen 2000). In fact, studies conducted on living children have demonstrated that the frequency of the disease is high not only in cold regions like Erzurum but also in regions with relatively higher exposure to the sun like the Black Sea, Western and Southern Anatolia regions (Özkan et al. 1999; Vurgun et al. 1996).

In infants vitamin D is acquired through the maternal stores formed in the fetal phase, from the mother's milk and through synthesis via sunbathing (Hatun et al. 2005; Özkan et al. 1999; Vurgun et al. 1996; Köksal and Gökmen 2000). Therefore, in the initial years of life mother's milk can be regarded to constitute an adequate nutrient source for vitamin D. However, the infants of mothers with low 1,25-OH cholecalciferol levels have also been detected to have low levels of this hormone. It is stated that mother's milk cannot meet the infant's vitamin D requirement since mothers cannot benefit adequately from the sun because of their wearing warm clothes and covering large parts of their body (Hatun et al. 2005; Özkan et al. 1999; Vurgun et al. 1996). Moreover, in traditional societies mother's milk is supplemented with cow's milk or formulas prepared with cow's milk (Köksal and Gökmen 2000). Cow's milk has been found to be inadequate with respect to vitamin D and its metabolites. The low calcium/phosphorus ratio of cow's milk also makes the intestinal absorption of calcium more difficult (Hatun et al. 2005; Özkan et al. 1999; Vurgun et al. 1996). Steinbock (1976), regards the inadequate absorption of calcium and phosphorus by the intestines as the most important cause of rickets. Moreover, vegetable foods contain little vitamin D. Excluding fish and fish oils, there is not enough vitamin D in animal foods either (Köksal and Gökmen 2000). Therefore, in addition to ecological and cultural factors such as not benefiting adequately from the sun, over-dressing of infants and over-dressing of breastfeeding mothers, eating foods with inadequate or no vitamin D content is also influential in the development of rickets (Hatun et al. 2005; Özkan et al. 1999; Vurgun et al. 1996). Though we do not have archaeological data on the life styles of the people buried in the Tasmasor graveyard, based on the frequency of the disease, it can be suggested that these people probably lived in dark households with small windows like the traditional houses of Erzurum, the children were not let out in the first years of life due to the extremely harsh climate and cold weather, and those taken out were over-dressed, that the breastfeeding mothers wore clothes that covered all over their body like the traditional women of Erzurum today, that the infants were saddled in the first months of life, that the mother's milk was in adequate in 1,25 (OH) cholecalciferol, and the infants' diet was supplemented with cow's milk and/or formulas prepared with cow's milk in addition to mother's milk and that cow's milk was the fundamental source of nutrient also in childhood. As a result of the above mentioned data, it can be stated that the high frequency of rachitism in the Tasmasor community is because of the following three fundamental reasons: the failure to adequately benefit from sun light because of ecological and cultural factors, the failure of calcium and phosphorus absorption from the intestines and the low content of vitamin D in foods.

It is accepted that factors such as inadequate nutrition, intestinal diseases and the failure to adequately benefit from sun light are also influential in osteomalasia observed in adults (Steinbock 1976; Aufderheide and Rodriguez Martin 1998; Ortner 2003). The manifestation of osteomalasia in the community only with the bending of femur bones, and the inadequate involvement of pelvic, rib and sternum bones (Steinbock 1976), indicate that osteomalasia follows a mild course just like rickets. The higher frequency of osteomalasia in the women of Tasmasor suggests that the long duration of breastfeeding which adversely affects the calcium stores and consecutive pregnancies (Steinbock 1976) are influential in the emergence of the disease. However, in this case one would expect higher rates of osteomalasia in young pregnant women, but in the Tasmasor community osteomalasia is more frequently encountered in elderly individuals and this suggests that, just as in children, the restrictions in going out of the house, failure to benefit from daylight and consuming foods lacking in vitamin D are more influential in the occurrence of the disease.

There are also endocrinological disorders in the community. The presence of endocrinological problems has been detected in a total of 3 individuals (1,8 %), one of them a woman and two individuals with unidentified gender. In the individual numbered M-27 none of the epiphyses are fused despite being at around the age of 18 according to teeth eruption. This individual’s stature is also shorter than normal. Yet, since the bones of the individual are fragmented, it is not possible to comment on this individual. In the individual numbered M-104 whose skeleton is quite well-preserved syncondrosis syphenooccipitalis is fused. The completion of calcification in all the permanent teeth indicates that this skeleton belongs to an adult woman older than 25 years. However, a significant proportion of the long bones of this skeleton are not fused (Illustration 61), indicating that the bone age of the individual is around 14-16 years. This individual whose stature is around 140 cm according to the Fully method demonstrates the existence of a dwarf woman in the community (Illustrations 62 a and b). As it is known, as a result of the inadequacy of hormone secretions from the pituitary gland in childhood, body parts, extremity bones and the torso remain proportionally short in relation to stature (Aufderheide and Rodriguez-Martin 1998; Ortner 2003). The length and circumference measurements of the long bones of this skeleton and their proportion to each other (the mass index), indicate that this individual is shorter than the normal men and women in the Tasmasor community, but also that its bones have similar proportions (Table 11). The lack of growth hormones in the early years of life causes a serious disruption of growth and results in proportional dwarfism. In this case, the bones remain short both in length and width measurements just as in gigantism with respect to both results with proportional (Aufderheide and Rodriguez-Martin 1998; Ortner 2003). Therefore, not only the dimensions of the bones remain short, the epiphyseal plates are not fused in adulthood either and secondary growth centres are delayed. The individual has a delicate skeletal structure in terms of dimensions, the bone cortices are thin and the spongious tissues have an osteoporotic appearance (Aufderheide and Rodriguez-Martin 1998; Ortner 2003).

This disease also known as dwarfism can occur with the development of a tumoral formation in the cella turcica or due to lack of hormones affecting the thyroid gland

(Aufderheide and Rodriguez Martin 1998; Ortner 2003). The second condition known as local *cretinism* (physical and mental retardation associated with congenital inadequate functioning of the thyroid gland) and encountered in elevated regions of the world is related to the relative scarcity of iodine in water and soil. The most widespread form of local cretinism has been observed in people living in the Alpine mountains in Switzerland. While the most important clinical sign of the disease is the presence of goitre, it is impossible to detect it in skeletal remains. The diagnosis of local cretinism is based on the development of prognatism due to the continuous growth of the mandibular condyles and the cranium’s taking a round shape (*brachycephalic*) in addition to the shortness of bones (Ortner 2003). When the incompatibility between the short stature in the Tasmasor community and the calcification of dental tissues and epiphyseal fusing and the observation of prognatism in two samples are considered with the geographical elevation of the region, the probability of the disease being local cretinism seems highly likely. However, in the skull x-ray taken from the individual numbered M-104 (Illustration 63) it is noted that the cella turcica of the individual is enlarged. As it is known, there is a synergy between the pituitary and thyroid glands (Ortner 2003). The lack of growth hormones in the early years causes a serious disruption of growth and results n dwarfism with childhood proportions. It can be stated that the dwarfism in this case has also resulted from the inadequate secretion of growth hormones due to an intracellar tumour.

Table 11: Dwarf and Giant Skeletons in the Tasmasor Community and Long Bone Dimensions of the Community

	M-104 Dwarf	M-218 Giant	Community Average (Man)	Community Average (Woman)
Humerus	Left	Right	Left	Left
Maximum Length	254,5	385,5	317,97	292,92
Maximum Diameter	17,0	33,0	23,36	20,78
Minumum Diameter	12,0	26,0	18,89	16,19
Minumum Circumference	46,0	94,0	66,66	57,86
Mass Index	18,1	24,4	20,96	19,75
Radius				
Maximum Length	165,0	299,5	241,56	220,27
Mid Corpus Antero-Posterior Diameter	9,0	17,0	13,11	10,93
Mid Corpus Transverse Diameter	12,0	23,0	16,26	14,16
Minimum Circumference	35,0	55,0	44,39	39,44
Mass Index	21,2	18,4	18,38	17,90
Ulna				
Maximum Length	190,5	349,0	262,47	240,50
Mid Corpus Antero-Posterior Diameter	9,0	19,5	13,73	11,21
Mid Corpus Transverse Diameter	12,0	26,5	17,62	14,83
Minimum Circumference	27,5	54,5	38,79	33,01
Mass Index	14,4	15,6	14,78	13,73
Femur				
Maximum Length	322,0	506,5	444,03	406,73
Mid Corpus Antero-Posterior Diameter	20	37,5	30,51	25,79
Mid Corpus Transverse Diameter	20	40,0	29,17	25,62
Antero-Posterior Diameter Beneath the	19,5	31,5	27,41	22,87

Trochanter				
Transverse Diameter Beneath the Trochanter	26,5	44,5	34,17	30,90
Minimum Circumference	62,0	120,0	92,37	79,84
Mass Index	19,3	23,7	20,80	19,64
Tibia				
Maximum Length	268,0	442,0	371,08	340,62
Antero-Posterior Diameter at the Level of Foramen Nutricium	25,5	43,5	35,84	29,56
Transverse Diameter at the Level of Foramen Nutricium	17,5	35,0	24,53	20,89
Minimum Circumference	58,5	100,5	80,14	67,13
	21,83	22,74	21,60	19,71
Fibula				
Maximum Length	247,0	436,5	361,16	329,05
Minimum Circumference	26,0	43,5	36,84	31,77
Mass Index	10,5	10,0	10,20	9,66

Another example of an endocrinological disorder encountered in Tasmasor is the disease of gigantism. Because of the continuous development of bones in the individual numbered M-218, it has not been possible to use the age determination criteria used in other individuals such as syphisis pubis, the auricular surface, rib ends and head sutures. However, according to the dental attrition values in the Tasmasor community, the individual has been determined to be in the young adulthood stage. Since the skull, pelvic bone and body bones show excessive growth and the morphological structure changes continuously till death, neither is it possible to determine gender from the skeletal morphology. All the bones of this individual have grown excessively with respect to both length and width measures, the epiphyses are completely fused and excessive joint diseases have developed in the joint regions (Illustrations 64-66). The cartilage tissue in all the semi-mobile and mobile joint regions has been transformed into bone, the vertebrae are fused with each other (Illustration 66), and joints like the elbow and the knee have reached up to three times the size of normal joints with new bone formations (Illustration 67). The skull, especially the frontal and occipital bones are over developed (Illustrations 68 a and b). Severe prognatism has occurred with the over development of the menton region , ramus and condyles.

Diseases leading to growth in length and width in the skeleton are associated with hormonal gigantism and acromegaly (Aufderheide and Rodriguez Martin 1998; Ortner 2003; Mulhern 2005). The rare disease of gigantism emerges as a result of the continuation of the over-production of the somatotropic hormone in the growing-up stage and the following period. When growth in both the bone ends and the bone membrane is overstimulated skeletons reach greater sizes (Aufderheide and Rodriguez Martin 1998; Ortner 2003; Mulhern 2005). Although the bones in the individual numbered M-218 have shown excessive growth, this growth has been proportional in length and width and therefore the mass values have turned out to be similar to the community average (Table 11). If the cause of this condition is a tumour developing in the cranium, the cella turcica enlarges considerably and thinning and damage develops in the anterior and posterior clinoid processes (Ortner and Putschar 1985; Ortner 2003). The severity of the disease of gigantism is related to the age of occurrence. When the disease occurs in the childhood stage, abnormal growth reaches greater dimensions, but if the disease occurs at the end of the growing-up period, it has less effect on the individual.

In acromegaly, on the other hand, the disease occurs in adulthood. After the completion of the growing-up process, the growth that restarts following the secretion of growth hormones affects the lower jaw condyles, the cartilage ends of ribs, pelvis, syncondrosis of the sternum and the intervertebral discs and the joint cartilage. While bone accumulation is observed in the end parts of bones, only the ligaments and tendons are calcified. In the cranium the overgrowth of the eyebrow arches, and of the muscle attachment sites in the facial and occipital regions are observed with the enlargement of the cella turcica. As the brain box becomes excessively thick, the most prominent change is observed in the lower jaw. As the cartilage in the lower jaw is comprised of growth cartilage this bone shows excessive growth. Due to the over-prolongation of especially the ramus of the lower jaw, severe occlusion deformity and lower jaw prognatism develops. The ribs are prolonged and the chest is enlarged. The bone processes become larger. The finger tips enlarge and become arrow-shaped (Ortner 2003, Aufderheide-Rodriguez-Martin 1998). All the above defined formations are present in the skeleton numbered M-218. As it is known, the growth hormones secreted after the growing-up period allow for the overlapping of the characteristics of gigantism and acromegaly (Aufderheide and Rodriguez Martin 1998; Ortner 2003; Mulhern 2005). And this indicates that the skeleton discovered in Tasmasor is a rare example that has gigantism together with acromegaly. The cause of the disease is the tumoral formation developing in the intrasellar area (Illustration 69). As is the case in the individual numbered M 104, the tumour developing in the sella turcica of this individual has also resulted in the destruction of this region, and the over secretion of the growth hormones in the growing-up period and the following periods and the concomitant development of acromegaly and gigantism.

Bone lysis also known as osteoporosis has been observed in 25,2 % of the individuals in the community. Osteoporosis in the community has generally been identified with lesions such as the reduction of both spongious and hard bone tissue in the vertebrae (Illustrations 70 a and b), lightness of bones, compression fractures in the vertebrae (Illustration 71), narrowing in the vertebrae (Illustration 72) and biparietal thinning in the skull (Illustration 73). Osteoporosis is defined as the general reduction in bone mass per unit while the ratio of the bone mineral structure to bone matrix is normal (Steinbock 1976; Ortner 2003; Aufderheide and Rodriguez-Martin 1998). Many aetiological factors such as sudden disruption in the physical activity of individuals, endocrinological disorders and age-related bone loss lead to osteoporosis. Under normal conditions, it emerges as a disease that affects the elderly, and elderly women in particular, rather than young individuals. When the individuals that have reached the stage of adulthood in the Tasmasor community are taken into consideration, it can be stated that osteoporosis shows a marked increase from young adulthood to old age. While the frequency of the disease is 5,3 % in young adults, it rises to 60 % in elderly individuals. The disease is more widespread in women, and in elderly women in particular although it is also observed in elderly men. While it is also encountered in young and middle-aged adult individuals, in these individuals it co-occurs with diseases like osteoporosis, acromegaly, dwarfism, poliomyelitis, tuberculosis. In the Tasmasor community seems to be a condition associated with aging although it is also seen- albeit seldom- in individuals with decreased locomotion ability or in individuals who have completely lost this ability.

The only function of the red blood cells is to carry oxygen from the lungs to all the living cells of the body, and the condition characterised by a reduction in the amount (*haemoglobin*) or content (*haematocrit*) or in both the amount and content of red blood cells is defined as anaemia (Ortner 2003; Aufderheide and Rodriguez-Martin 1998; Roberts and Manchester 1995; Mays 1998; Garn 1992). Anaemi with a chronic course leaves traces with the enlargement of the bone marrow and the reduction of bone mass compared to its volume. However, since such formations can be mixed up with diseases like protein-calorie malnutrition, *osteogenesis imperfecta* and osteoporosis (Garn 1992); lesions developing in the skull and known as porotic hyperostosis (*symmetrical hyperostosis*) and cribra orbitalia (*hyperostosis spongiosa orbitale*) are accepted as the distinguishing markers of anaemia (Angel 1966; Stuart-Macadam 1992). Of the individuals studied in Tasmasor, cribra orbitalia has been detected in 24,6 % (Illustration 74-75), and porotic hyperostosis has been detected in 31,4 % (Illustration 76-77). However, there are significant differences in the distribution of the disease between children and adults. While the rate of cribra orbitalia in infancy is 47,1% , it is encountered in more than half of the individuals in the stage of childhood and in all the individuals in the stage of adolescence (Table 9). The frequency that decreases after this age category drops down to 27 % in young adults and down to 3,8 % in the elderly. A similar pattern with lower frequencies exists also for porotic hyperostosiste. The data obtained indicate that both cribra orbitalia and porotic hyperostosis are skeletal lesions of individuals in the stages of infancy, childhood and young adulthood. When different communities of the world are taken into consideration, while cribra orbitalia and porotic hyperostosis are detected to be lesions seen in all age groups, it is stated that active and unhealed lesions are more widespread in children under 5 years of age in all communities (Larsen 1995). Regarding this characteristic, the Tasmasor community shows a pattern similar to both ancient Anatolian communities (Sevim 1998; Erdal 2000) and other communities in different parts of the world.

The frequency of porotic hyperostosis in ancient Anatolian communities has been detected to range between 1,2 % and 85,7 % (Sevim 1998; Erdal 2000). However, this ratio range is suspected to arise from the differences in data collection techniques, in other words, it reflects which lesions have been evaluated to signify the disease rather than the communities' having the disease at different frequencies. Although the values of the Tasmasor community are within this range, they have not been taken into account during the assessment because of the low reliability of the data.

As a result of the fact that blood is primarily produced in the bones, disorders of a chronic course that occur due to an increase in the destruction of haemoglobin synthesis or of blood cells are expected to leave traces in the bone. There are two types of anaemia. The first group is comprised of anaemias due to hereditary causes such as sickle cell anaemia and Mediterranean anaemia (Ortner and Putschar 1985; Roberts and Manchester 1995; Mays 1998; Stuart-Macadam 1992). In anaemias due to hereditary causes, the disease not only leads to the above mentioned lesions in the skull, but the enlargement of facial bones, swelling in the metaphyses of long bones and reduction in the spongious and hard tissues of the bones are also observed (Ortner and Putschar 1985). Together with the excessive development of porotic hyperostosis and cribra orbitalia in the Tasmasor community (Illustrations 78a and b), infant skeletons in which the enlargement of facial bones (Illustration 78c), the delicacy of long bones, osteoporosis and swelling of the metaphyses (Illustration 78d) have been observed indicate that hereditary diseases have had an influence in the development of anaemia in Tasmasor. However, as also pointed out by Stuart-Macadam (1992), since skeletal changes due to genetic anaemias are extremely limited even in regions with widespread hereditary anaemia, and since the lesions of porotic hyperostosis and cribta orbitalia are quite widespread in the American continent where genetic anaemias did not exist in the past, acquired anaemia can be held largely responsible for the lesions observed in the skull. In addition, lesions related to genetic anaemia severely affect the body bones (Ortner 2003; Stuart-Macadam 1992; Roberts and Manchester 1995). In the Tasmasor community, since most of the individuals have milder forms of the disease and since the lesions are mostly restricted to the orbital roof and cranial roof, factors other than the hereditary structure should be examined while searching for the aetiology of anaemia. Nutrition disorders developing after birth, some infection diseases and some metabolic diseases can also lead to acquired anaemia in individuals (Garn 1992; Stuart-Macadam 1992; Ortner 2003). Although many reasons can lead to anaemia associated with environmental factors, iron deficiency anaemia is accepted to be most widespread form or anaemia.

Iron is among the vital minerals for many functions of the human body. Iron constitutes the fundamental element of especially haemoglobins. The infants' bone marrows function at the highest level to provide the necessary oxygen at birth. The milk sucked contains a very little amount of iron. However, breastfed infants have normal iron content acquired from the mother. When iron supplementation cannot be provided through foods, haemoglobin that will meet the increasing demand cannot be provided by the blood producing marrows. The low haemoglobin level in the blood triggers the over production of red blood cells (Garn 1992; Aufderheide and Rodriguez-Martin 1998). This, in turn, results in the becoming porous and thickening of some parts of the skull, the orbital roof and the parietal and occipital bones, in particular.

Although iron intake is through foods, the iron in food sources is divided into two groups as utilisable iron (*heme*) and harder to use or non-utilisable iron (*non-heme*). Therefore, the absorption of the iron in foods is largely dependent on the quality of the iron taken. *Heme* iron is found in the muscles and organs of animals and in the structure of haemoglobin and myoglobin (Köksal and Gökmen 2000; Garn 1992). 40 % of the iron contained in meat is *heme* iron and in order for this iron to be absorbed it does not need to be processed in the stomach. On the other hand, substances contained in cereals like wheat, barley, oat and corn and in vegetable sources like rice and hulled fruits restrict the absorption of *non-heme* iron contained in these foods (Ortner 2003). Moreover, some vegetable proteins also prevent the absorption of iron. It is known that iron deficiency anaemia is the most important disease of infancy and childhood in underdeveloped societies today as it was in the people of Tasmasor. Approximately 2 billion people are estimated to suffer from this disease in the societies of our day (Köksal and Gökmen 2000). The problem is known to be more serious especially in children in the 0-5 age group, in adolescent girls and in women of child bearing age. In Turkey it has been determined that half of the children in the pre-school period and one third of the children of school age have iron deficiency anaemia (Köksal and Gökmen 2000; Özkan et al. 1999).

Although it has been pointed out in some researches that the rates of porotic hyperostosis and cribra orbitalianın are high in communities that largely consume foods lacking in utilisable iron or that the frequency of lesions increases parallel to the increase in the consumption of such foods, the frequency of these lesions has been determined to be high also in communities that do not consume cereals in large amounts or in hunter-gatherer communities (Cook 1984; Rose et al. 1984; Perzigian et al. 1984; Cohen and Armelagos 1984). As it has been previously indicated, Erzurum, and thus Tasmasor, is located in the elevated and cold region of Anatolia. Cereal production in this region is limited because of the very short duration of the summer season. In fact, in the village settlements around the Tasmasor excavation site it has been observed that agriculture is practised in limited lands, clover is the usually preferred crop in these lands and the other lands are used as pasture. Since the basin level of the Erzurum Plain that covers an area of approximately 520 km^2 ‘is very low, the Karasu river has caused the formation of swamps and reed beds in some parts of the plain. The existence of the Great Müdürge Swamp approximately 2 km to the north of Tasmasor (Sözer 1970) also shows that the region is not suitable for agriculture. Raising livestock constitutes the most important means of livelihood in Eastern Anatolia and agriculture is pursued as a production method that supports raising livestock. In fact, the ethnoarchaeological study conducted in the modern Yiğittaşı (Sos Höyük) village very near to Tasmasor has also shown that the basic means of livelihood of the people depends on raising livestock. According to Hopkins (2003), the lands in the region are clearly separated into two groups. Pastures and meadows for animals are in the first group and agricultural lands where crops are cultivated are in the second. The separation is done irregularly depending on the topography of the land. Wheat and potatoes which are the two main crops in the region are grown for people while clover, pastures and barley are grown for the animals (Hopkins 2003). The lands are more suitable for grazing animals rather than growing crops (Hopkins 2003). For the village communities of Erzurum of our time, raising livestock constitutes the most important means of livelihood and the most important economic activity. Each household has a herd of animals. Cattle, sheep and goats are the main animals raised. (Hopkins 2003). In the villages in the vicinity like the Çayırtepe village of today which also includes the Tasmasor settlement within its boundaries and which has a soil structure that is less suitable for agriculture than that of the Yiğittaşı village, the life style of the people is based on raising livestock. Based on this, it can be said that raising livestock is a suitable life style for Tasmasor as well. And in communities with a life style based on raising livestock, nutrition with cereal products cannot be held responsible for the high rates of porotic hyperostosis and cribra orbitalia.

Anaemia that starts in the first 4-6 months of life makes a peak at 9-24 months since it is during this period that the consumption of milk not supplemented with iron increases and this is among the most important causes of the disease. Although iron content in mother’s milk is low, because of the effective absorption of iron in breastfed infants, iron deficiency anaemia is less frequently observed in breastfed infants than in infants fed with a feeding bottle (Scott 1996). In fact, Scott (1996) points out that nutrition related iron deficiency anaemia is most frequently observed in infants fed with a feeding bottle and in children consuming large amounts of cow’s milk. Because of the preponderance of cattle among the animals raised in Eastern Anatolia in general, and in the villages around Tasmasor, the consumption of cow’s milk is likely to be quite high. Milk and dairy products are poor sources of iron and the feeding of infants largely with cow’s milk and the failure to give supplemental foods rich in iron are thought to result in iron deficiency anaemia (Scott 1996; Köksal and Gökmen 2000). If the nutrition hypothesis is correct, it can be said that the high consumption of milk and dairy products in the Tasmasor community can be held responsible for the frequency of iron deficiency anaemia. However, observing low rates of anaemia in communities eating foods lacking in iron content or observing high rates of anaemia eating foods rich in iron content renders the nutrition hypothesis inadequate in providing an explanation for iron deficiency anaemia (El-Najjar et al. 1979). In fact, the humans meet 90 % of their iron requirement through the reutilisation of the iron released after the breakdown of red blood cells and the rest through the use of stored iron and through the absorption from the intestines. These data indicate that the iron in the body is appropriately preserved and that there is very little loss under normal conditions (Stuart-Macadam 1992). Despite the Tasmasor community's being involved most probably in raising livestock because of the ecological characteristics of the region, it does not seem possible to hold nutrition solely responsible for the frequency of the lesions that are markers of anaemia.

In recent times, it has been proposed that factors like impaired iron absorption, bleeding in the gastrointestinal system, premature birth, being in a period of rapid growth, infectious diseases, inadequate baby care, adverse hygienic conditions, poor living conditions, heavy metal poisoning, intestinal parasites like hook worm, diarrhoea and chronic blood loss or the concomitance of some of these factors leads to iron deficiency anaemia (Larsen 1995; Köksal and Gökmen 2000; Stuart-Macadam 1992; Ubelaker 1992). It has been suggested that the reduction of the intestinal absorption of iron in case of chronic infection and inflammation is a part of the body's defence system and that iron deficiency anaemia develops as a natural reaction of the body of the body (Stuart-Macadam 1992). In this situation, the low amount of iron in the blood forms a natural means of protection to prevent the growth of bacteria. The extremely high rate of chronic diseases, primarily of infections in the Tasmasor community can be interpreted as the body's developing iron deficiency anaemia as a natural reaction against these diseases. Tuberculosis and non-specific infections; malaria that can occur as a result of the region's being swamp area; parasitic infections that could arise from close contact with animals; population density and adverse hygienic conditions can be listed among the factors decreasing iron absorption. In addition to these, nutrition disorders due to the consumption of large amounts of milk and dairy products, though not being the real cause, can probably be listed among the factors that increase the frequency of this disease in infants and children. .

In order to be able to better perceive how both the diseases studied here that leave traces on the bones and others that do not leave any traces shape the bio-cultural adaptation process of the community, it would be beneficial to also take up the growth patterns, growth disorders and the stature attained in adulthood in the Tasmasor community.

Growth, Growth Disorders and Stature in the Tasmasor Community

In contrast to the view held a century ago that the human body is stable, today it is accepted that the size and shape of humans vary as a result of adaptations to different environmental conditions. In numerous studies conducted on living people it has been demonstrated that bodily features like stature and growth patterns of individuals that have not reached the stage of adulthood can change depending on socioeconomic structure, environmental factors and especially the state of nutrition. Drawing upon this fact, researchers started using bodily features in the determination of the modes of environmental adaptation and socioeconomic structures of ancient human societies. In the determination of the environmental adaptation processes of the people in the Tasmasor community, bodily constitutions like children’s growth patterns and stature attained in adulthood as well as enamel hypoplasias- one of the most important markers of disruptions in growth- have been utilised.

Physical development levels constitute one of the most important indicators that provide information on the degrees of development and socioeconomic structures of societies (Tanner 1990). In the Tasmasor community that has a high representation rate for infant and child deaths and in which lesions related to anaemia and infectious diseases are quite frequently encountered, growth patterns have also been investigated to support studies of socioeconomic and health structures. In order to determine the community’s growth pattern, the maximum lengths of the tibia (shin bone) from the leg bones and the humerus (upper arm bone) from the arm bones have been measured without taking the epiphyses into consideration and the average values according to age groups are given in Table 12. The growth curves obtained are presented in diagrams to be compared to those of ancient Anatolian societies (Figure 7-8).

Table 12: The Change According to Age Groups of the Maximum Lengths of the Humerus and Tibia Bones in the Tasmasor community

	Humerus			Tibia		
Age groups	n	X	S	n	x	s
0-0,4	15	6,73	0,537		6,21	0,295
0,5-1,4	13	8,68	0,866	9	6,56	0,502
1,5-2,4	4	12,36	1,505	8	9,07	1,005
2,5-3,4	4	12,93	0,975	4	11,76	1,209
3,5-4,4	2	13,43	1,237	7	13,00	1,486
4,5-5,4	2	15,45	0,919	2	14,50	1,202
5,5-6,4	2	15,56	0,247	3	16,58	1,342
6,5-7,4			-	2	17,95	,495
7,5-8,4	1	18,95	-	-	-	-
8,5-9,4	3	21,05	0,985	1	22,75	-
9,5-10,4	2	22,80	0,071	3	24,13	1,589
10,5-11,4	1	23,25	-	2	23,40	4,667

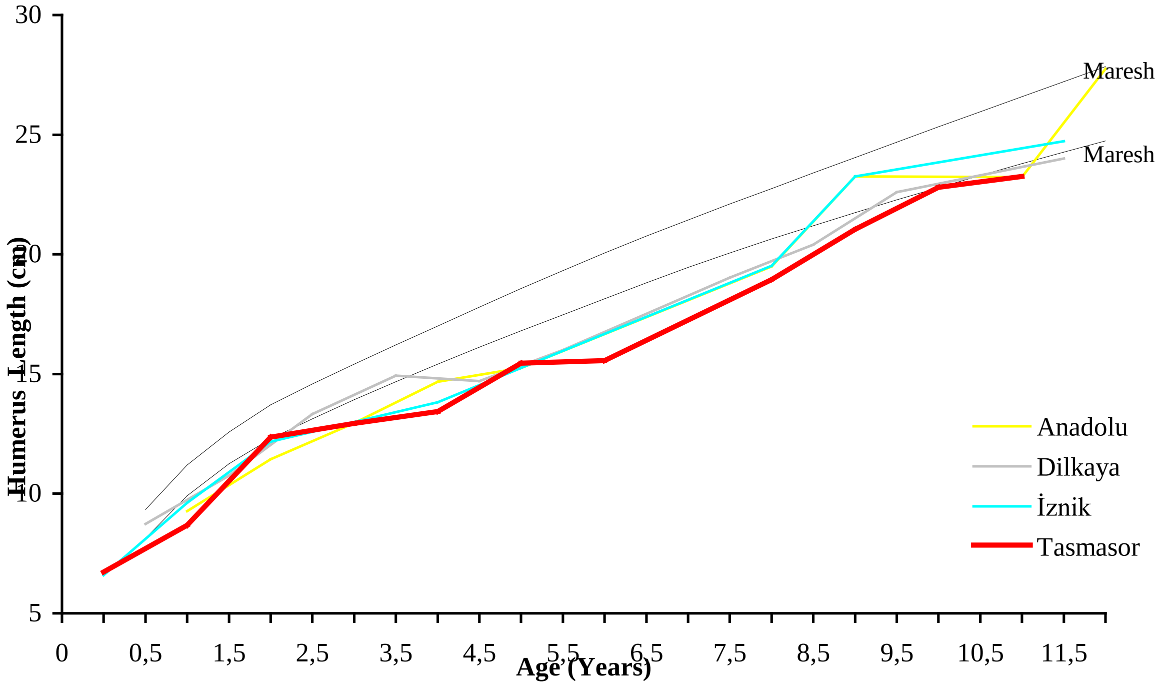

Figure 7: Humerus Growth in Tasmasor and Other Ancient Anatolian Societies

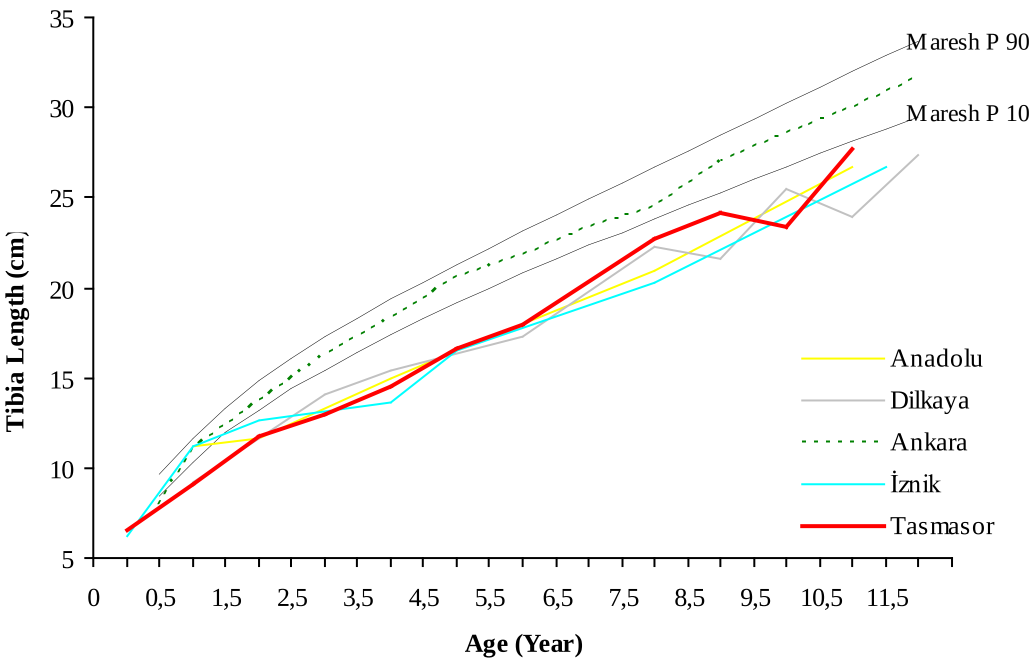

Figure 8: Tibia Growth in Tasmasor and Other Ancient Anatolian Societies

The growth curves obtained from the long bones in the Tasmasor community display a uniform and relatively rapid increase until around the age of two (Figure 7-8). From this age onwards the growth curve takes a concave shape; in other words the growth rate decreases. This slowing down of the growth rate continues till the ages of 10-11. The growth curves of the Tasmasor children are even behind the 10th percentile of the growth curves obtained for children from the U.S.A. by Maresh (1955) and for the humerus bone they can never reach this curve except at the ages of 2 and 10. The growth curve for the Tasmasor children also lags far behind the growth curve detected in the radiological study conducted on the tibia bones of children living in Ankara today (Uysal 1999). The Tasmasor community displays a growth pattern more similar to that of ancient Anatolian communities rather than to that of the children living in Ankara (Uysal 1999) and the U.S.A (Maresh 1955) today. Despite this similarity, there are also some important differences among the communities with respect to growth patterns. Although the growth curves constructed for ancient Anatolian communities show a growth pattern similar to that of the children from the U.S.A until ages of 2-3, in the Tasmasor community growth retardation emerges at birth. Growth retardation that continues to increase until the ages of 7-8, improves to a certain extent in ancient Anatolian communities in the coming years and comes close to and even exceeds Maresh's 10th percentile, but this pattern cannot be observed in the upper arm bone of Tasmasor individuals. The Tasmasor community that lags behind the growth curves of Anatolian communities for the upper arm bone for almost every age group also lags behind for the lower leg bone until the 4,5-5 age group and from this age onwards it displays a pattern similar to that of the Anatolian communities to some extent. In light of all these data, it can stated that growth retardation is a general problem for ancient Anatolian communities, and that the Tasmasor community is among those communities that experience the growth retardation problem more intensely in the initial years of life.

Findings from researches conducted on living societies indicate that there is an important relationship between suppression of growth in childhood and bodily dimensions and stature in adulthood (Roberts and Manchester 1995). In other words, children that fail to thrive are expected to have short stature also in adulthood (Roberts and Manchester 1995). Researches conducted on living societies provide information that supports this view. With this point of view, adult stature in the Tasmasor community is calculated with the Pearson and Trotter-Gleser formulas and the findings are given in Table 13.

Table 13: Stature in the Tasmasor Community

Age groups	N	X	sd	W	X	sd	W	F	P
Man	50	164,08	4,76	151,30-173,20	169,82	5,263	157,05-180,24	137,47	0,000
Woman	40	153,06	3,97	145,83-162,30	157,44	5,153	146,19-168-99	125,22	0,000
General	90	159,18	7,05	145,83-173,20	164,32	8,071	146,19-180,24	151,29	0,000

Table 14: Stature in Some Ancient Anatolian Communities

Communities	Trotter-Gleser				Pearson			
	Man		Woman		Man		Woman	
	n	X	n	X	n	X	n	X
Çatal Höyük	28	169.8	40	157.3	-	-	-	-
Karataş	72	166.3	58	153.5	-	-	-	-
Gordion Roma*	27	166.1	18	156.6	27	169.9	18	153.4
Dilkaya	41	168.3	34	156.7	41	163.9	34	153.0
Topaklı	38	169.9	33	162.9	33	165.6	32	154.0
İznik	62	171.2	15	161.5	61	164.9	15	155.9
Panaztepe	17	170.8	21	160.4	17	164.6	21	156.3
Tasmasor	50	169,8	40	157,4	50	164,08	40	153,06

* Figures calculated from the femur bone have been used

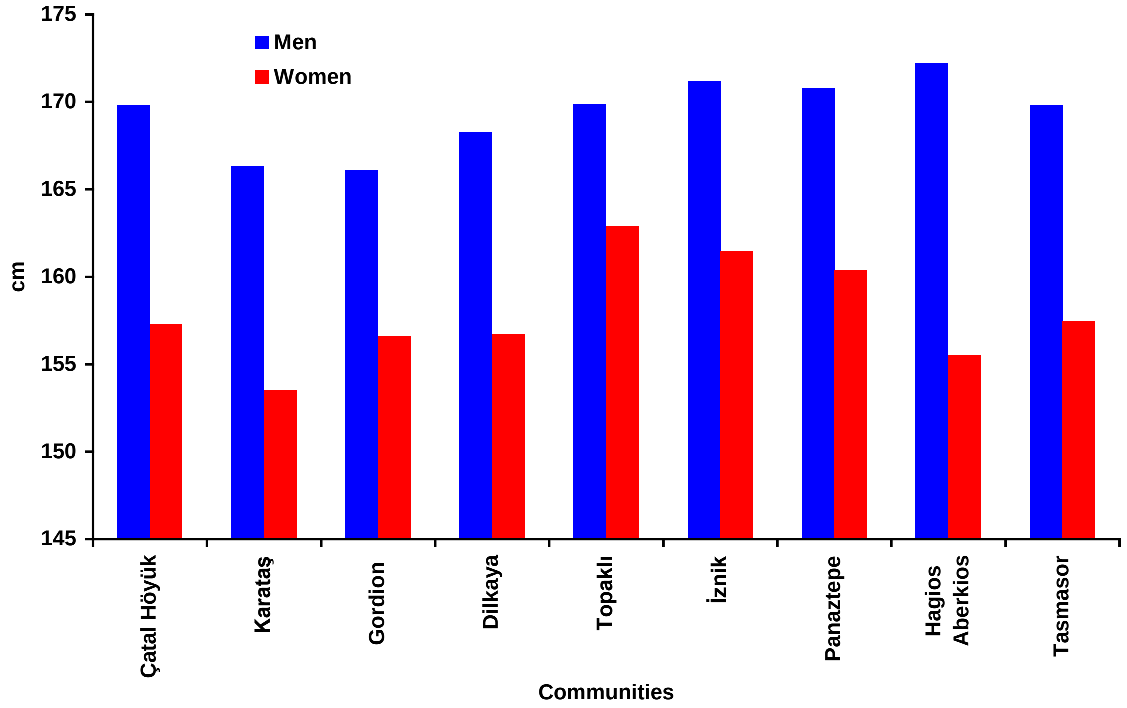

Figure 9. Stature Distribution in Some Anatolian Communities According to the Trotter-Gleser Formula

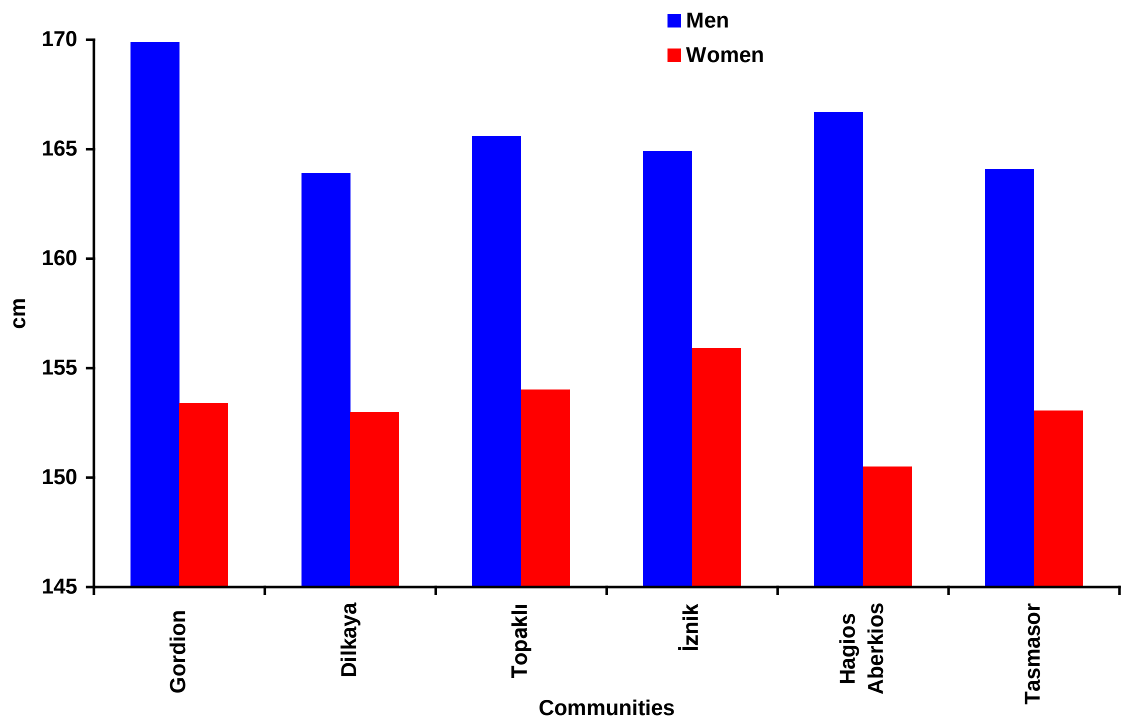

Figure 10. Stature Distribution in Some Anatolian Communities According to the Pearson Formula

In the Tasmasor community stature averages according to the Pearson (Olivier 1969) and Trotter-Glesser (Brothwell 1981) formulas are around 164 - 170 cm for men, and around 153-157 cm for women (Table 13). By comparing the average statures obtained from the Tasmasor community with ancient Anatolian communities that have relatively larger number of samples, we have tried to establish their respective positions (Table 14). It is noticed that, in both formulas, the Tasmasor community has shorter stature than the Middle Age and later age communities (Figure 9-10). Although the stature of both men and women in the Tasmasor community is classified among those ancient Anatolian communities with relatively short stature, it is worth noticing that it is similar to the Dilkaya community which also has growth retardation as a significant problem.

One of the indicators of growth disorders observed at childhood is enamel hypoplasia. Enamel hypoplasia is defined as the disorder that occurs in enamel quality and thickness due to the disruption of ameloblastic activity in the process of *amelogenesis* (Goodman and Rose 1990; Rose et al. 1985; Lukacs 1989; Martin et al.1991). The most frequently emphasised factors are as follows: inadequate, irregular and unbalanced nutrition, duration of breastfeeding, inadequate and improper care by the mother, premature birth, neurological diseases, fluorosis, vitamin D deficiency, protein-energy malnutrition, various gastrointestinal diseases, genetic disorders, bacterial infections, viral infections like scarlet fever, measles, flue, small pox, scurvy, disorders of metabolism or individual traumas. (El-Najjar 1978; Goodman et al. 1984; Rose et al. 1985; Hillson 1990; Goodman and Rose 1990; Neiburger 1990). Although there are numerous and various factors that lead to hypoplasia, they can be divided into three main groups: hereditary anomalies, localised traumas and systemic metabolic stresses (Martin et al. 1991; Moggi-Cecchi et al. 1994; El-Najjar et al. 1978). However, regional traumas and hereditary diseases are extremely low in ancient human societies (Martin et. al 1991) and it is accepted that physiological stresses rather than other factors are influential in enamel disorders observed in the teeth.

Permanent teeth in the Tasmasor community have been examined with respect to enamel hypoplasias (Figure 79-81) and we have tried to determine the frequency in adults of physiological stresses occurring during growth. In the Tasmasor community, enamel hypoplasias have developed in 48 % of all teeth (Table 15). Nevertheless, this ratio rises to 79 to 87 % in the anterior teeth (incisor and canine teeth). This ratios indicate that almost all individuals that reach the stage of adulthood in the community are exposed to physiological stresses during growth. Men (55,01 %) have been exposed to more physiological stress than women (37,93%). The difference between the sexes for the teeth in general is valid for all teeth groups (Table 15). In all the teeth groups apart from the lateral incisors and canine teeth the differences between the sexes are statistically significant. These data indicate that physiological stresses that cause enamel hypoplasias affect more men than women (Table 15; Figure 11).

Table 15: Frequency of Enamel Hypoplasias in the Tasmasor Community

Teeth	Man			Woman			General			χ^2	P
	N	Hip	%	N	Hip	%	N	Hip	%		
I1	76	68	89,47	58	41	70,69	142	115	80,99	7,648	0,007*
I2	81	63	77,78	72	51	70,83	151	119	78,81	0,968	0,357
C	118	102	86,44	95	74	77,89	216	187	86,57	2,678	0,106
P1	111	65	58,56	88	36	40,91	214	113	52,80	6,118	0,015*
P2	109	47	43,12	90	21	23,33	215	71	33,02	8,579	0,004*
M1	81	22	27,16	80	9	11,25	173	32	18,50	6,553	0,016*
M2	99	28	28,28	104	9	8,65	209	41	19,62	13,111	0,000*
M3	94	28	29,79	80	12	15,00	182	43	23,62	5,338	0,029*
General	*769*	*423*	*55,01*	*667*	*253*	*37,93*	*1502*	*721*	*48,00*	*41,801*	*0,000**

N: Total number of teeth examined; Hip: Number of teeth observed to have hypoplasia
P: Fisher's exact χ^2 test

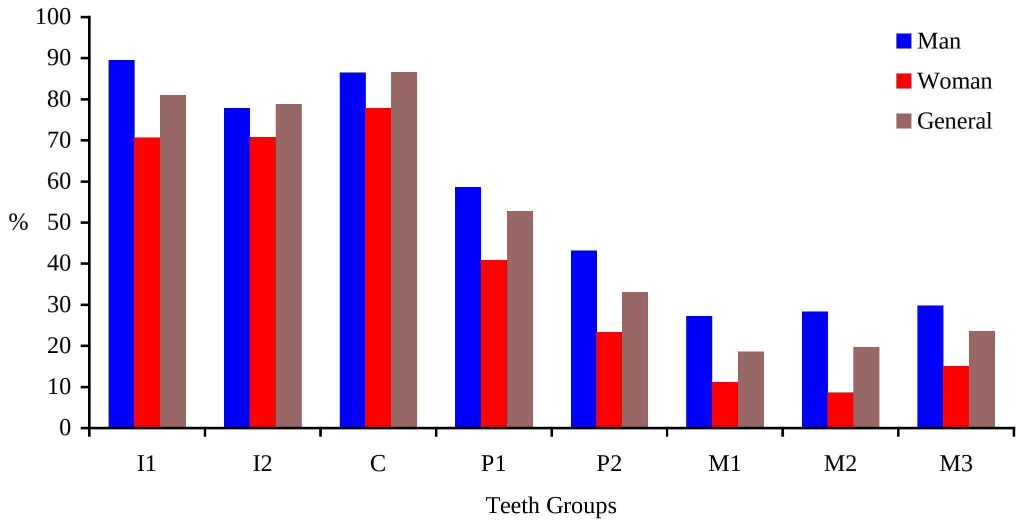

Figure 11: Distribution According to Gender of Enamel Hypoplasias in the Tasmasor Community

It is emphasised that anthropometric researches on skeletal groups have an important potential in providing information on ancient human societies' environmental adaptation processes. While it is acknowledged that the hereditary structure is influential in human growth, development and stature (Olivier 1969), it is also accepted that the diversity in human sizes is significantly associated with adaptation to environmental factors and especially the state of nutrition. (Taner 1990; Martin et al. 1991; Larsen 1995). This situation allows for the utilisation of similar growth standards in the assessment of the nutrition levels of different communities (Martin et al.1991).

Data obtained from different fields- such as the children's remaining short relative to their peers, the relatively short stature of adults and the high frequency of enamel hypoplasias- support each other and indicate that growth retardation and disruption of growth are important problems in the Tasmasor community. It is generally accepted that many factors including primarily genetic structure, disorders of growth hormones and physiological stresses are influential in growth disorders (Larsen 1995; Hummert and Van Gevren 1983; Erdal and Duyar 2000). The observation of hypoplasias mostly in the anterior teeth, the teeth's being periodically affected by growth disorders and the failure to observe severe enamel impairment in many teeth suggest that the hereditary structure is not influential in growth disorders in the Tasmasor community. Tasmasor's being among the Anatolian communities with the highest biological diversity also indicates that the genetic structure can have a limited role in accounting for growth retardation. In researches conducted both on communities in the transition phase to agriculture and on those that have a life style based on agriculture, it has been demonstrated that growth retardation stems from environmental factors rather than the genetic structure (Erdal and Duyar 2000; Larsen 1995; Saunders 1992; Angel 1984; Larsen 1995). Studies conducted on people living in Turkey today have also revealed that growth retardation is a problem of communities with low socioeconomic structure (Duyar 1990; Duyar and Özener 2004). It has been determined that being small for age is a widespread condition not only in Turkey but also in third world countries with adverse environmental conditions. (Bogin 1999). In growth studies conducted on ancient Anatolian communities (Duyar and Erdal 1997; Erdal and Duyar 1998; Güleç et al. 1992), it has been determined that growth retardation from the initial years of life poses a widespread and important problem. Erdal and Duyar (1998) have shown that the growth retardation in children cannot be compensated (*catch-up growth*) because of successive physiological stresses and thus the growth retardation continues in later years. It is acknowledged that many factors such as food quality, nutrition disorders, health status and physical activity contribute to growth retardation in ancient human societies (Martin et al. 1991). It has been concluded that unbalanced and irregular nutrition caused by a life style based on agriculture and physiological stresses like adverse environmental conditions in Anatolia play an important role in growth retardation (Erdal and Duyar 1998; Duyar and Erdal 1997; Güleç et al. 1992).

However much it can be stated that growth retardation is a chronic problem of the Tasmasor community just like the other ancient Anatolian communities and that it shares this characteristic with other communities, the growth retardation that becomes more pronounced between the ages of 2 and 5 in ancient Anatolian human societies in a fashion similar to other communities in the world (Armelagos et al. 1972; Jonhston 1962; Mays 1998; Erdal and Duyar 1998; Bogin 1999; Larsen 1997) starts from birth in the Tasmasor community. This characteristic of the Tasmasor community distinguishes it from both other ancient Anatolian communities and other communities outside of Anatolia.

Which processes can be considered as the cause(s) of growth retardation in the Tasmasor community in which raising livestock was a more important life activity unlike the other ancient Anatolian communities studied? As also supported by ethnographic data, since Erzurum and its environs is not suitable for agriculture both with respect to climate and topographical characteristics (especially the region around Tasmasor), it is not possible to hold a life style based on agriculture and eating habits based on cereal products responsible for growth retardation. Although it is stated that growth is immediately affected by nutrition disorders, when there is access to adequate food a sudden increase in growth occurs and growth improves once again. In such cases, growth disorders can be more influential in certain phases of life in communities in Anatolia and elsewhere. (Martin et al. 1991; Bogin 1999; Larsen 1997; Güleç et al. 1992; Erdal and Duyar 1998). It can be stated that in the Tasmasor community growth emerges as a chronic problem, children cannot catch up with the 10th percentile of the children in the U.S.A. and thus an improvement or sudden increase in growth cannot be realised. In a similar fashion, the stature reached at adulthood in the Tasmasor community is classified in the short stature group in communities dated back to recent periods. Therefore, it seems reasonable to assume that problems that lead to growth disorders in the Tasmasor community are associated with conditions with a chronic course and not with factors like nutrition that can change periodically.

One of the frequently encountered diseases in individuals of the Tasmasor community who have lost their lives in the growth process is rickets (rachitism). This disease which is caused by vitamin D deficiency and which manifests itself with slight bending of the knees starting from the 5th month after birth occurs with symptoms that are not detected in the bones in the early phases of life (Hatun et al. 2005; Özkan et al. 1999; Vurgun et al. 1996; Ortner 2003) and also causes growth retardation (Steinbock 1976; Ortner 2005; Köksal and Gökmen 2000; Larsen 1997). Another health problem frequently encountered in the community is anaemia. Anaemia both leads to lesions on the cranium like porotic hyperostosis and cribra orbitalia and causes growth retardation just like vitamin D does (Steinbock 1976; Ortner 2003). It is known that non-specific infectious diseases that are detected particularly on the medial surfaces of tibia bones are also more prevalent in low socioeconomic groups (Steinbock 1976; Ortner 2003). Likewise, socioeconomic structure, vitamin D deficiency and chronic diseases like anaemia occupy an important place among the reasons that lead to lesions like enamel hypoplasias which are significant indicators of growth disorders. While the presence in the community of bacterial infections like tuberculosis and even parasitic infections like malaria leads to anaemia on the one hand, they are also accepted to cause growth retardation (Kiper et al. 1997; Steinbock 1976; Köksal and Gökmen 2000; Ortner 2003). It has also been demonstrated by some studies that periods of increase in disease frequency and mortality overlap with growth disorders (Cameron and Demerath 2002; Hummert and Van Gevren 1983; Erdal and Duyar 2000). For instance, while in the growth study conducted by Hummert and Van Gerven (1983) on child skeletons in Nubia, the researchers have stated that in age groups with high rates of cribra orbitalia and mortality, growth rate is extremely diminished and even approaches zero, in the study Erdal and Duyar (2000) have conducted, they have found that in the İznik community the age groups with growth retardation, the age group with high mortality and the periods during which enamel hypoplasia formation makes a peak overlap with each other.

Therefore, it can be stated that as a result of a process during which one or more of the above listed diseases are influential together in Tasmasor children remain shorter than their peers, stature remains short and an increase in the frequency of enamel hypoplasias is observed. The high infant mortality observed in the initial years of life and the more severe course compared to other communities of growth retardation in these age groups can be associated with the high frequency of infections encountered in infancy and diseases like rachitism. When the findings that enamel hypoplasias are higher in low socioeconomic groups than in high socioeconomic groups (Maunders et al. 1992; El-Najjar et al. 1978), higher in badly nourished communities that in well nourished communities (May et al. 1993; Goodman et al. 1987, Maunders et al. 1992), higher in rural societies than in urban societies (Maunders et al. 1992; Blakey et al. 1990) are considered together with the high frequency of enamel hypoplasias in the Tasmasor community, they indicate that the community has a low socioeconomic structure and this lends further support to the data obtained from growth pattern and stature. The higher ratio of enamel hypoplasias in men than in women can be accounted for by men’s being more sensitive to environmental stresses than women (Wolfe and Gray 1982; Duyar 1990; Erdal 2000).

Nutritional habits constitute one of the most important contributions to the moulding of life style and health status. Taking up dental diseases would be beneficial in the identification of the nutritional habits and food preparation techniques in the Tasmasor community.

Dental Diseases in the Tasmasor Community and Their Association with Life Style

Although written resources, and studies pertaining to archaezoology and archaeobotany are utilised in the identification of the nutritional status of ancient human societies, in the Tasmasor settlement we do not have any archaeological findings that would help to determine the life style and nutritional habits of this community. Since the mouth and teeth comprise the first step of the digestive system, investigation of the direct or indirect traces of foods in these tissues is important in the determination of the nutrition structure and food preparation techniques (Turner II 1979). In this study, we have examined lesions like dental caries, erosions and chip fractures in the teeth by also taking gender distributions into consideration and have tried to get some clues like the nutritional habits and food preparation techniques of the Tasmasor community that will be used in the identification of life style. Therefore, tooth losses prior to death, periodontal diseases, abscess, and dental calculi which are considered among the most important indicators of oral health have not been included in the study.

Caries id defined as the demineralisation process of the teeth by organic acids formed during the decomposition of food remains by the bacterial flora that settles in some parts of the teeth in the form of a gelatinous layer and that is known as the dental plaque (Lukacs 1989; Larsen et al. 1991; Martin et al. 1991; Hillson 1990). Dental tissue loss starts with the dropping of the pH value below 5,5 as a result of the bacterial fermentation of food sugars. The low pH level in the dental plaque is adequate for the demineralisation of enamel, dentin and cement. A complex interaction of many components ranging from the infectious lesion indirectly caused by micro organisms and the composition and hardness of dental tissues to the viscosity of saliva and from the types of food to developmental disorders is involved. (Martin et al. 1984; Walker and Hewlett 1990; Larsen et al. 1991). Although many factors are involved in the aetiology of caries, there is a direct relationship between the increase in carbohydrate food consumption and caries frequency (Erdal 1996). Caries frequency is higher in agricultural communities eating cereal products rich in carbohydrates and in industrial societies heavily consuming fermented food than in hunter-gatherers (Brothwell and Sandison 1967; Turner II 1979; Formicola 1987; Özbek 1979, 1995, 1997; Kelley et al. 1991; Larsen et al. 1991; Sledzik and Moore-Jansen 1991). This process that leads to the formation of caries allows for the utilisation of dental caries in the determination of eating habits in skeletal groups.

It has been determined that one or more caries has developed in 8,24 % of the 2329 teeth examined in the Tasmasor community (Table 16). Like in many other human communities, the caries in the Tasmasor community show an increase from the front to the back teeth (Illustration 82a and b), and the first large molars have the highest ratio of tooth decay at 17,49 % (Table 16; Figure 12). Although the general tendencies of teeth groups are similar for women and men, there are differences in the caries frequency of both sexes with respect to both teeth groups and the teeth in general.

Table 16: Frequency of Dental Caries in the Tasmasor Community

Teeth	Man			Woman			General			χ^2	*P*
	Caries	Tooth	%	Caries	Tooth	%	Caries	Tooth	%		
I1	3	122	2,46	1	115	0,87	4	252	1,59	0,901	P:0,622
I2	1	136	0,74	3	126	2,38	4	279	1,43	1,178	P:0,354
C	2	154	1,30	5	144	3,47	7	316	2,22	1,533	P:0,269
P1	7	146	4,79	9	146	6,16	16	310	5,16	0,264	P:0,498
P2	14	151	9,27	10	152	6,58	24	324	7,41	0,753	P:0,404
M1	24	144	16,67	27	151	17,88	53	303	17,49	0,076	P:0,878
M2	19	141	13,46	28	150	16,67	48	309	15,53	1,446	P:0,266
M3	9	113	7,96	28	114	24,56	40	236	16,95	11,458	P:0,001*
General	*79*	*1107*	*7,14*	*111*	*1098*	*10,11*	*196*	*2329*	*8,42*	*6,187*	*P:0,015**

P: Fisher’s exact χ^2 test *P>0,05

The type and frequency of dental diseases in a community provide important information for the determination of the health status, nutritional habits and life style of the community studied. However, these data have a meaning when they are compared to those of other communities. When dental caries in some communities selected from both Anatolia and other parts of the world are taken into consideration within this framework (Table 17), it can be stated that the Tasmasor community has a higher frequency of dental caries than hunter-gatherer and early agricultural communities. As it is known the frequency of dental caries is extremely low in hunter-gatherers, settled communities eating wild foods and in early agricultural societies (Özbek 1995, 1997). The low frequency of dental caries in these communities is primarily because of the relatively low consumption of carbohydrates and the consumption of carbohydrates in the form of large grains (Moore and Corbett 1971; Erdal 1996).

Table 17. Dental Caries Frequency in Some Ancient Human Communities

	Site of Finding	Period	%*	Researcher
1.	Europe	Mid Palaeolithic	0,0	Brothwell 1963
2.	Europe	Upper Palaeolithic	1,0	Brothwell 1963
3.	19 communities	Prehistoric	1,3	Turner II 1979
4.	Europe	Late Pleistocene	2,8	Smith et al. 1984
5.	Europe	Neolithic	4,2	Meiklejohn et al. 1984
6.	Çayönü	Neolithic	4,3	Özbek 1995
7.	Aşıklı	Neolithic	2,9	Özbek 1995
8.	13 communities	Neolithic	4,8	Turner II 1979
9.	32 communities	Agricultural	10,4	Turner II 1979
10	Hayaz Höyük	Bronze	3,9	Özbek 1984
11	Karataş	Bronze	5,6	Angel and Bissel 1986
12	Kalınkaya	Bronze	8,3	Angel and Bissel 1986
13	Norşuntepe	Iron	11,3	Korkmaz 1993
14	Klazomenai	Ion	5,2	Güleç 1986
15	Antandros	7-2. century B.C.	9,8 (18,54)	Erdal 2000
16	Arslantepe	Late Roman	9,5	Uzel et al. 1988
17	Sardis	Late Roman-Early Byzantine	8,7	Eroğlu 1998
18	Dilkaya	Middle Age	10,0	Güleç 1987
19	Eski Cezaevi	Late Byzantine	9,6	Erdal 2003
20	İznik	Late Byzantine	10,9 (14,94)	Erdal 1996, Erdal and Duyar 1999, Duyar and Erdal 2003
21	Kovuklukaya	Byzantine	19,0	Erdal 2004
22	Panaztepe	Islamic	7,3	Güleç 1989
23	Erzurum	Modern Age	14,9 (23,97)	Duyar and Erdal 2003
24	Tasmasor	Modern Age	8,4 (17,32)	This study

* The figures in the parentheses for the frequency of dental caries are the data obtained by the proportional correction method developed by Erdal and Duyar (1999).

With an uncorrected dental caries frequency of 8,4 % [2], the Tasmasor community is included among communities that have life styles based on agriculture and eating habits

[2] In the Tasmasor community the corrected dental caries frequency by taking the before and after death teeth loss into account is 16,46 % for men and 20,53 % for women. These figures indicate that the difference ratio between the two sexes is 4,07 % and that it is more than the difference between the non-corrected dental caries frequencies. The corrected dental caries frequency determined for the Tasmasor community is 17,32 %. Yet, since there are no corrected dental caries frequencies for communities other than the İznik (Erdal and Duyar 1999; Duyar and Erdal 2003), Antandros (Erdal 2000; Duyar and Erdal 2003) and Erzurum (Duyar and Erdal

based on cereals However, the frequency of dental caries in the Tasmasor community is a bit lower than both the data on 32 agricultural societies from different parts of the world and the Anatolian communities with eating habits based on cereals such as İznik (Erdal 1996), Dilkaya (Güleç 1987), Norşuntepe (Korkmaz 1993), Arslantepe (Uzel et al. 1988) and Erzurum (Duyar and Erdal 2003) (Table 17). It is much lower than the dental caries frequency in Kovuklukaya which has a relatively high representation of the elderly population like the Tasmasor community and which has a nutrition model based on cereals. In light of these values it can be stated that cereal products are not of great importance in the nutrition of the Tasmasor community or that the community does not eat finely ground, well processed cereal products.

Women have a higher frequency of dental caries than men (10,11% vs. 7,14 %) (Table 16). The difference emerging between the sexes is at a statistically significant level ($P<0{,}05$). The caries ratio is higher for the central incisor and second small molars in men and for all the other teeth in women. The most prominent difference between the sexes is for the third large molars. Likewise, the dental caries frequency of only this tooth shows a statistically significant difference between the sexes. Some researches investigating dental caries before and after agricultural adaptation (Larsen 1983; Larsen et al. 1991; Lukacs 1996), indicate that with the intensification of agriculture the increase in dental caries frequency is greater for women than for men and in consequence in agricultural communities more women than men suffer from dental caries (Larsen et al. 1991; Lukacs 1996). The difference in the culturally based activities related especially to food intake and food preparation between the sexes rather than the earlier eruption of teeth and physiological differences like pregnancy seems to be more influential in the gender difference observed in dental caries frequency (Larsen et al. 1991). Likewise, the higher dental caries frequency in women than in men in the İznik community has been attributed to women's being more frequently exposed to factors conducive to dental caries due to reasons like cooking, child-care and home-based life style (Erdal 1996). The higher dental caries frequency in the women of Tasmasor can also be considered, as in other communities, to be a consequence of their being more exposed to factors conducive to dental caries due to their home based life styles and a cumulative result of the physiological differences between the two sexes.

2003) communities, despite being more reliable, it has not been possible to use corrected dental caries frequencies in the comparison of communities. Among these communities, Tasmasor has similarities with Antandros which has a dental caries rate of 17,32 % and in which marine products are probably of importance in nutrition, and displays significant differences from the İznik community which includes individuals of young ages and from the Erzurum Modern Era community that has a high rate of dental caries.

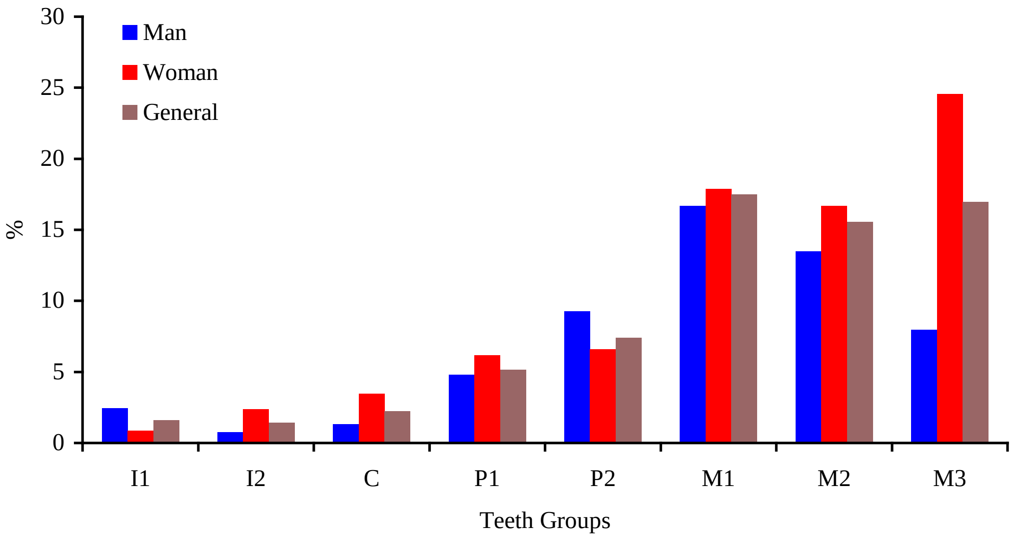

Figure 12: Distribution According to Gender of Dental Caries Frequency in the Tasmasor Community

During mastication (chewing) both the rubbing of teeth against each other and their mechanic contact with foods and the foreign particles in the foods cause tissue loss to a significant extent. This process which causes the greatest tissue loss after dental caries, can occur both slowly as a normal erosion *(attrition)* due to contact of teeth with other teeth and in a severe manner *(abrasion)* depending on the hardness of the food consumed, the concentration of the foreign substances in the foods and the use of teeth for cultural purposes (Molnar 1972; Scott and Turner II 1988; Kieser et al. 2001). Dental erosion that starts with the teeth making contact with each other is a natural result of the masticatory cycle. However, links between the acceleration of erosion and the eating habits, food preparation techniques and life styles of the communities have been determined (Brothwell and Sandison 1967; Smith 1972; Hartnady and Rose 1991; Walker et al. 1991; Kieser et al. 2001). Dental erosion follows a course that is inversely proportional to technological development; and while it is rapid in communities that feed themselves with hard, fibrous, not fully processed foods harbouring foreign substances inside, it is slower in communities that eat soft foods decontaminated of foreign substances (Molnar 1972; Brothwell 1981; Scott and Turner II 1988). Although the mechanism of dental erosion is not fully understood, dental erosions provide important information about the eating habits, food preparation techniques and the utilisation of teeth in activities not related to nutrition in ancient human societies, and they constitute one of the most frequently used areas of information in studies on the reconstruction of ancient human societies' lifestyles. In this study, we too are examining the erosion process occurring in the teeth of the Tasmasor community and are trying to analyse the relationship between the severity of erosion and life style.

Table 18: Distribution According to Teeth Groups of the Degrees of Dental Erosion in the Tasmasor Community

	Number of Teeth	1	2	3	4	5	6	7
I	456	0,22	3,73	29,17	43,64	20,18	0,66	2,41
C	279	0,72	25,81	24,73	32,26	14,34	0,72	1,43
P	530	1,05	33,02	19,24	27,36	16,79	2,07	0,38
M	709	2,26	33,00	22,00	20,87	20,73	0,42	0,71
General	*1974*	*1,27*	*25,23*	*23,28*	*29,48*	*18,62*	*0,96*	*1,11*

When the erosion scores of Boulville et al.. (1983) who have applied Brothwell's (1981) classification for molar teeth to all the teeth groups are taken into consideration, it can be stated that the most frequently encountered teeth erosion in the Tasmasor community is the erosion in the category classified as number 4 (Table 18; Figure 13). However, 20 % of the teeth have lost a large portion of the dental tissue on the crowns and are even eroded all the way down to the roots (Illustration 83 a and b). These figures show us that dental erosion follows a severe course in Tasmasor. In the community there are differences also among teeth groups with respect to erosion. While mild and moderate levels of erosion are more frequent in other teeth, severe erosion is more often in the incisor teeth (Table 18). Another teeth group in which severe erosion is frequently observed is comprised of the great molars.

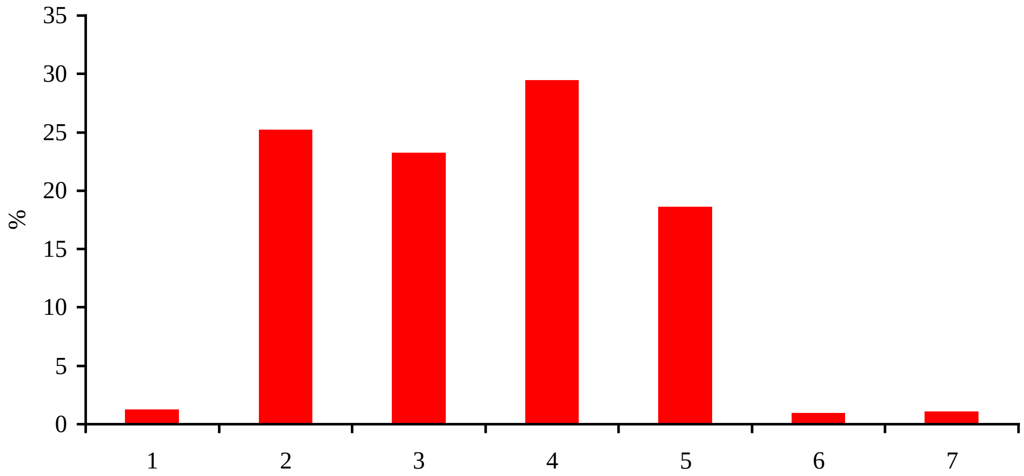

Figure 13: Distribution of Degrees of Erosion in the Tasmasor Community

We observe erosion to be a condition that occurs more in men than in women. Although no significant difference regarding the degrees of erosion between the sexes is observed, mild to moderate levels of erosion are more frequently encountered in women while erosions at considerable levels are more frequent in men (Figure 14). Although erosion in all teeth groups displays a slight difference between the sexes, this difference turns out to be more marked in the front teeth than in the cheek teeth.

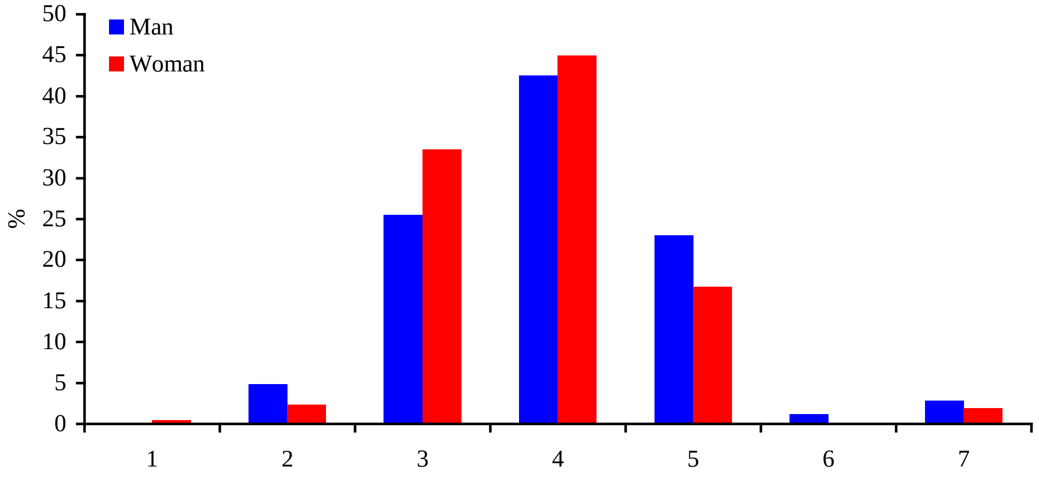

Figure 14: Distribution According to Gender of the Erosion in the Front Teeth in the Tasmasor Community

The erosion level at which the teeth lose their crown part and the dentin is fully exposed is as high as 20 % in the Tasmasor community and this shows that the level of erosion in the community is quite severe (Table 18). In approximately 2 % of the teeth, the crown portion is largely eroded and there is tissue loss extending down to the roots. As it s known, severe degree of dental erosion is generally encountered in prehistoric hunter-gatherer communities. The average value of dental erosion in the ancient Anatolian community of İznik is 2,83 which indicates a mild degree of erosion. The mild degree of erosion encountered in the İznik community has been attributed to the soft, finely ground and well-processed foods consumed in this community that has a nutrition model based on agriculture. (Erdal 1996). In Antandros (Erdal 200) which is one of communities investigated for dental erosion, while erosion level number 4 turns out to be the most frequently encountered condition just as in Tasmasor, the ratio of moderately or severely eroded teeth is higher in Tasmasor. In the communities of Arslantepe (Uzel et al. 1988), Panaztepe (Güleç 1989), Klazomenai (Güleç 1986), Norşuntepe (Korkmaz 1993), Sardis (Eroğlu 1998), Altıntepe (Yiğit et al. 2005) and Eski Van Şehir (Gözlük et al. 2004) included among the Anatolian skeleton groups the degree of erosion is mild and erosion values of numbers 2,3 and 4 generally prevail (Figure 15). However, just as in the other hunter-gatherer communities, severe dental erosion has been observed in the Çayönü and Aşıklı Höyük communities that have a hunter-gatherer life style (Özbek 1995). It seems that use of land and marine animals for food, and consumption of carbohydrates from undomesticated cereals in the form of large grains and in unfermented form are influential in the relatively low rate of dental caries in hunter-gatherer communities. Nevertheless, in communities with the same life style and food preparation techniques, tissue loss due to dental erosion is severe and the acceleration of erosion is observed to be high because of hard, fibrous and large grain foods with high foreign particle content, use of teeth like an instrument, and the force and intensity of mastication (Walimbe and Lukacs 1992; y'Edynak 1978; Özbek 1995; Formicola 1987; Greene et al. 1967; Smith et al. 1984; Walker and Hewlett 1990; Van Reenen 1992).

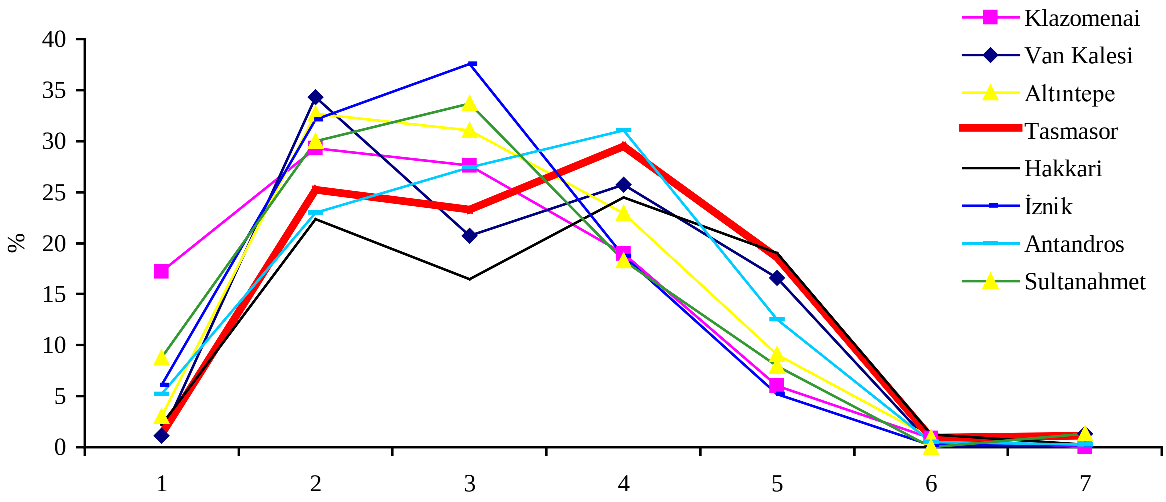

Figure 15: Distribution of Degrees of Dental Erosion in Some Anatolian Communities

This high rate of severe dental erosion in the Tasmasor community is largely because of the larger number of elderly individuals in the community. As it is known, there is a positive relationship in the communities between the severity of dental erosion and age (Walker et al. 1991). Nevertheless, the severity of dental erosion in the community cannot be solely explained by age. Although factors such as pre-processing of foods and their decontamination of the foreign substances, softening of foods by boiling and cooking processes and use of pots/containers prevents excessive dental erosion (Scott and Turner II 1988; Hillson 1990); numerous other processes such as the foods' being fibrous, their containing foreign particles and taking foreign materials in the mouth increase the acceleration of dental erosion. The Tasmasor community's being involved in raising livestock rather than in agriculture as a means of livelihood, the foods' probably having a fibrous nature and containing foreign substances inside and the use of teeth in activities other than nutrition can be held responsible for dental erosion.

Although the erosion observed in the teeth is associated largely with the consistency of food materials and the foreign particles entering the food materials, the teeth are known to be frequently used in activities other than nutrition. The unusual erosion marks in the teeth due to their being used for purposes other than nutrition are generally observed in areas like the incisor edges of the front teeth, the surfaces of the front teeth facing the tongue and the inter surfaces of the posterior teeth. Horizontally directed sulci (grooves) located mostly on the mesial and distal surfaces or the neck part of the posterior teeth (premolars and molars) comprise one of the unusual forms of dental erosion (Ubelaker et al. 1969; Wallace 1974; Frayer and Russell 1987; Brown and Molnar 1990; Frayer 1991; Hillson 1996). In the Tasmasor community, groove shaped unusual erosions between the smaller and larger molar teeth in the neck part of the tooth have been observed in 4 individuals (Illustration 84). Although it has been suggested, in light of the data obtained from the skeleton group discovered in Australia and some ethnographic researches, that this form of erosion results from the workings of the nerves in the grooves between the teeth (Brown and Molnar 1990), the most strongly emphasised reason for the grooves observed in spaces between the teeth is the repeated insertion of tooth pricks made from bones or wood in the spaces between the teeth (Ubelaker et al. 1969; Wallace 1974; Frayer and Russell 1987; Brown and Molnar 1990; Frayer 1991; Hillson 1996). The small number of grooves between adjacent teeth encountered also in the Tasmasor community is more likely to result from tooth prick use rather than rope production or the workings of the nerves.

The teeth’s being used in processes other than nutrition is more frequently encountered in the front teeth rather than in cheek teeth. In modern communities such erosions in the front teeth have been encountered in tailors, shoe repairmen, carpet weavers, butchers, glassware workers, musicians and office workers (Alt and Pilcher 1998). It is known that the teeth have been used in activities other than nutrition and there are unusual marks of erosion in ancient human communities, too; most of them lead to anterior-posterior or horizontally directed grooves in the front teeth. Such unusual erosions observed only in the Karataş (Angel 1968), Öküzini (Özbek 2000) and Kovuklukaya (Erdal 2004) communities in Anatolia are not present in the Tasmasor community. The findings that indicate the use of teeth in activities other than nutrition manifest themselves with the modes of erosion in the front teeth. The unusual mode of erosion encountered in the upper central teeth’s surface facing the tongue and in the surfaces of the incisor and canine teeth in the lower jaw (mandible) facing the lip (Figure 85 a and b) have been observed in 24 individuals in the Tasmasor community. While it is accepted that this kind of erosion that occurs only in the surface of the upper teeth facing the tongue stems from squeezing some object between the tongue and the front teeth in the upper jaw (Irish and Turner, 1987; Irish and Turner II 1997), in the Tasmasor community, not only the upper teeth but also their counterparts in the lower jaw are eroded, and from this respect it is distinguished from LSAMAT (lingual surface atrition of maxillary teeth). Although the small and large molar teeth are mildly eroded in the Tasmasor community individuals with this type of abnormal erosion (Illustration 86a, b and 87), the erosion on the surfaces of the front teeth facing the tongue is severe. These data indicate that in the Tasmasor community incisor teeth are used also in activities other than nutrition. LSAMAT is a condition observed in some communities in South America (Brasil, Panama, Puerto Rico) and Africa (Senegal) and it seems to be mostly associated with the eating of foods like moniac and sugar cane (Irish and Turner, 1987; Irish and Turner II 1997). The finding in Tasmasor of unusual erosions in the upper jaw teeth’s surfaces facing the tongue and in the lower jaw teeth’s surfaces facing the lip suggests that the front teeth are used like a pincers and that the teeth sometimes contact each other. Although it is difficult to determine in what functions the front teeth are used in such erosions, when it is recognised that the community makes a livelihood through stock raising it seems reasonable to think that they might have been used in the processing and softening of materials like skin, nerve and intestine.

One of the areas that provide information related to the quality of foods in the communities, substances contained in the foods and even foreign materials taken into the mouth is small tissue fractures (chipping) that occur in dental tissues and are associated with the nutrition and non-nutrition related activities of teeth (Milner and Larsen 1991; Bonfiglioly et al. 2004). Such fractures that could also be described as dental chip fractures (Illustration 88 a,b and 89), are among the frequently encountered conditions in the Tasmasor community. Of the 1786 teeth studied in the Tasmasor community, chip fractures of various sizes have been detected in approximately 34 % of men and 23 % of women (Table 19). Chip fractures are observed at a higher frequency in men than in women (Table 19). The ratio of small fractures observed in the molar teeth is around 15-22 % which indicates that the food substances taken into the mouth are hard and with large particles and even that they contain foreign materials inside. While the small sized dental fractures observed in the molar teeth in many communities are associated mostly with nutrition activities (Turner and Cadien 1969; Bonfiglioly et al. 2004), the chip fractures in the front teeth have been associated with the presence of foreign particles in food and the non-nutrition related activities of the teeth. Fractures with higher rates observed in the front teeth in some communities have been associated with fights, falls and traumas resulting from the use of teeth as a third hand (Gould, 1968). The high frequency of small dental fractures in the Tasmasor community can be attributed to that the foods consumed in the community are fibrous, hard to break off, hard in consistency and erosive. Likewise, the finding that the frequency of dental erosions is higher in the Tasmasor community than in many Middle Age communities and in communities after this period (Figure 15) supports this view. However, the presence of dental fractures at a higher rate in the front teeth in the Tasmasor community, suggests that the individuals comprising the community hold some materials with their front teeth as if using pincers since under normal conditions these teeth carry out the activities of cutting and breaking rather than chewing When it is considered that fights- though not very common- do occur in the Tasmasor community but injuries due to falls are of real importance and that they emerge in the childhood stage, it can be stated that falls and fights can be held responsible for some of the fractures in the front teeth.

Table 19: Chip fractures observed in teeth groups in the Tasmasor community

	Man			Woman		
	N	Small	Medium and Large	N	Small	Medium and Large
I	110	46,81	2,98	204	38,24	2,94
C	143	23,78	5,59	120	15,00	0,00
P	271	22,14	3,32	244	19,26	2,46
M	349	18,34	3,44	345	15,07	1,74
General	*873*	*30,70*	*4,12*	*913*	*21,36*	*1,97*

When fractures are approached from the genders point of view, it is noticed that there are a greater number of both small sized (smaller than 0,5 mm) and medium (0,5-1,5 mm) and large (larger than 1,5 mm) sized fractures in men than in women. Likewise, when all the teeth are taken into consideration, it is noticed that there is a significant difference between men and women in the frequency and severity of fractions (χ^2:30,934; sd:2; P:0,000). However, since such fractures differ more in quality than in quantity, it can be stated that these two groups have similar eating habits and life styles. In fact, the occurrence of the severity of erosion, the frequency of dental caries and the unusual modes of erosion in the surfaces of the front teeth facing the tongue support this view.

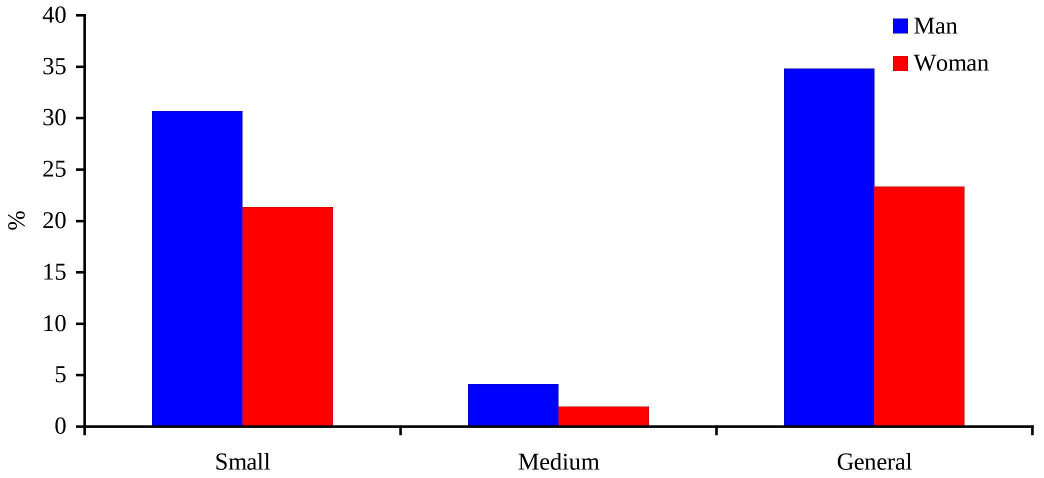

Figure 16: Distribution According to Age of Chip Fractures in the Tasmasor Community

The severe course of dental erosion in the Tasmasor community, the development of erosion surfaces on the surfaces of the upper jaw's front teeth facing the tongue and the frequency of fallen out dental caries suggets that the chipping in the teeth might have stemmed from masticatory (nutrition with hard and erosive substances, food preparation techniques) and extra masticatory functions (such as taking hard substances into the mouth and processing of skins) and falls, crashes and individual fights.

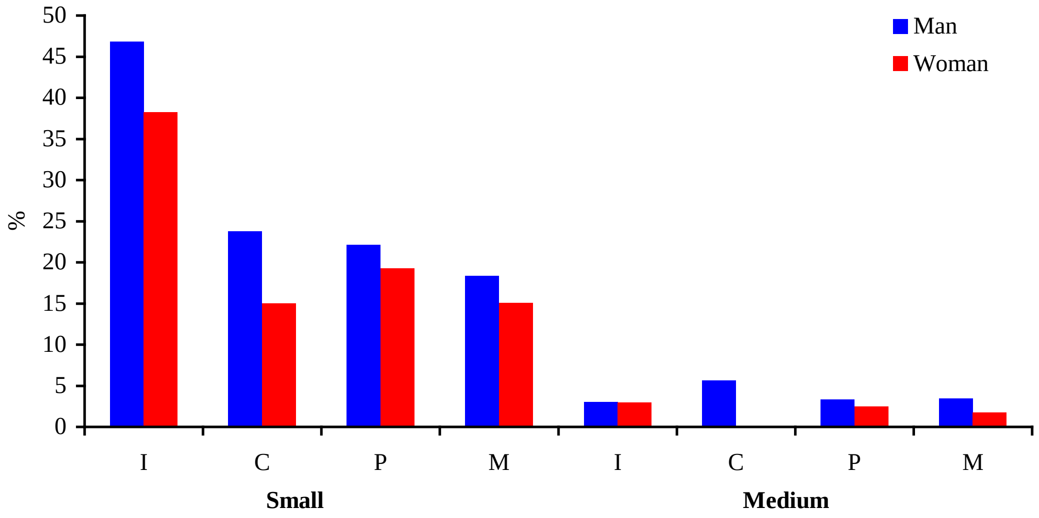

Figure 17: Distribution of Chip Fractures According to Teeth Groups in the Tasmasor Community

When assessed in general, it can be stated that compared to its contemporaries, the Tasmasor community has a teeth structure that decays less, that is more eroded and on which small sized chip fractures occur more frequently. When the presence of such dental erosions is evaluated, it can be stated that this community is nourished with foods that contain less carbohydrates compared to its contemporaries, the foods consumed are not adequately decontaminated of foreign particles and even that hard and fibrous foods have an important place in the diet. Based on the unusual dental erosion marks observed in the front teeth of the Tasmasor community, it can be predicted that these people probably use their front teeth in the processing and softening of animal materials like skin, intestine and nerve as if they are using a third hand. The similar frequency of dental diseases between men and women reveals that their nutritional models and life styles are also similar to one another. However, the higher frequency of chip fractures in men than in women can be associated with the men's spending more time outside the house and their being more exposed to falls and fights.

Summary and Conclusion

Tasmasor located within the boundaries of Çayırtepe (Müdürge) Village in the province of Erzurum is a settlement site excavated in 2003 because of its being on the route of the Baku-Tbilisi-Ceyhan crude oil pipeline. In the graveyard where 224 skeletons have been discovered in 215 hamlets, the skeletons lying flat on their backs in trapezoid shaped pits mostly in the west-east direction have been unearthed. Despite the lack of archaeological findings, the existence of the presently used name of the graveyard also in some 19th century resources and the existence of the remains of an old village in the vicinity of the excavation site suggest that the graveyard also belongs to the Tasmasor village deserted in the Modern Age.

The Tasmasor Modern Age community displays a wide diversity with respect to anthropometric measures that reflect the size and shape of the skull. In the Gradual Distinction Analysis conducted based on the skull measurements, the clustering of approximately 60-67% of the community among themselves is an indicator of this diversity. The region's being located on the corridor between Anatolia and Central Asia must have been influential in the diversity of the community. Arabs, Seljucks, İlhanlıs, Armenians and Safavis have controlled Erzurum and its environs for centuries and their attempts to bring some parts of Erzurum under their own rule must have had undeniable effects on the emergence of this diversity.

The Tasmasor community comprised of 224 skeleton remains, has the quality of a "normal" public burial. This situation manifests itself in the standard practising of dead burial traditions as well as in the demographic composition. Individuals who have not reached adulthood comprise a significant portion of the community. Although this is also the case for numerous other ancient human communities, the Tasmasor community is distinguished from Anatolian communities from the Middle Ages and the following periods and even from many prehistoric communities with the high rate of mortalities in infancy, especially the high frequency of deaths that occur under the age of 1. Since every disease does not leave a trace on the skeleton, different diseases leave similar traces on the bones and similar diseases have different reflections on the bones, it is not possible to identify all the health problems individuals experience in their life times, but the traces of some diseases that stem form the life style, nutritional habits and biological and cultural adaptations to the environment have been identified. Infections comprise one group of these diseases. The infection traces encountered in the people of Tasmasor suggest that infections have an important place especially in infant deaths. The Müdürge Swamp located around Tasmasor must have also allowed for the spreading of parasitic infections such as malaria in the region. In fact, the high rates of traces of anaemia observed especially in infants and children lend support to this view. Lesions observed in hereditary anaemia such as the enlargement of facial bones, severe porotic hyperostosis and cribra orbitalia, and osteoporosis in long bones show that hereditary anaemia might have also been influential in the deaths in the Tasmasor community. However, these data cannot fully account for the high rates of infant and child mortality. The region's being located in one of the highest and coldest parts of Anatolia must have also led to upper respiratory infections. Apart from these, childhood diseases that do not directly leave traces on the bones such as common cold, intestinal infections, scarlet fever, measles, small pox and mumps are also among the most important causes of infant death. Since the local people make a living out of stock raising, foods of animal origin have an important place in the foods consumed. Yet, both the infections arising from close contact with animals and the lack of iron and some other vitamins in the milk obtained from these animals must have also contributed to the high frequency of diseases-if not to infant deaths.

Encountering rachitism in the children of Tasmasor and osteomalasia in elderly women demonstrates that, in addition to the vitamin deficiencies in foods, the individuals cannot adequately benefit from sun light. Ecological characteristics like the large number of cold and cloudy days seem to be influential in the inability to adequately benefit from sun light. Since mothers, infants and children wear heavy clothing to keep themselves warm, children are not frequently taken out and the house windows are small so as not to be affected from the cold, it can be stated that not only the ecological and biological factors but the cultural practices developed by the people of Tasmasor also involve disadvantages for health and these environmental adaptations might have also contributed to child deaths. However, these data cannot account for all the causes of child deaths. In fact, many other factors such as the health of pregnant and breastfeeding mothers, mothers' nutrition profile, environmental health and hygienic conditions can lead to infant deaths. High infant mortality is an important demographic trait that distinguishes the Tasmasor community from others. The other distinguishing characteristics of the Tasmasor community are the disruptions in growth, severe growth retardation and the short stature reached in adulthood. This situation also demonstrates that the Tasmasor community has a lower socioeconomic development level than the Middle Age communities and the communities in later periods that have been compared to Tasmasor, and the complex interweaving of many factors from vitamin D deficiency to anaemia, infectious diseases and nutrition models.

Although the Tasmasor community shows a "bad" pattern with respect to infant and child health, it is possible to say that they have been" peace loving" in their relations with other communities. Despite the high rate of injuries in the Tasmasor community, a significant part of them have occurred as falls and crashes due to accidents. The shape of skull injuries, the Colles fractures in the fore arm bones and the considerably rising trauma rates in the elderly lend support to this view. However, the incision mark observed on the facial bones and the defence fractures in the middle part of the fore arm bones of one individual indicate that this group has not completely stayed away from fights. Yet, since such injuries are not frequent, the fights must have been personal rather than indicating involvement in wars. None of the injuries detected have led to the death of the individuals. Although we have neither detected diseases that have caused the death of adult individuals, traces of diseases that impair the individuals' metabolism and adversely affect the growth processes have been found. The metabolism of at least two individuals has been impaired due to tumours developing in their cella turcica; one of them has remained dwarf while the other has reached the dimensions of a giant and also developed acromegaly. Another metabolic disorder encountered in adults is anaemia. Anaemia is one of the most frequently encountered diseases both in infants and children and in adults in the community. Hereditary anaemia and probably thalassemia can be held responsible for some cases of anaemia which has a high rate in the community. Yet, the high frequency of anaemia in adulthood suggests that iron deficiency anaemia is highly likely. Although there are many factors leading to iron deficiency anaemia such as the impoverished content of *heme* iron in foods, the inadequate absorption of iron due to intestinal infections, infectious diseases, and chronic loss of blood, the Tasmasor community's life style based on stock raising and the provision of 90 % of the iron required by the body through the disintegration of haemoglobins make these possibilities less likely. The swamps around Tasmasor and parasitic infections that could be due to close contact with the animals raised must have been among the primary factors that increase the frequency of iron deficiency anaemia even if they are not solely responsible for it.

The low rate of dental caries in the Tasmasor community indicates that the nutrition profile includes foods that are less conducive to caries compared to that of the Middle Age communities and the communities in later periods. Since the region is not ecologically suitable for agriculture and livestock raising is the basic life style, it should not be surprising that the people of Tasmasor eat foods with lower carbohydrate content compared with other Anatolian communities dated back to the Middle Age and the following periods. The severe dental attrition indicates that the foods consumed are hard, fibrous, with large grains or not adequately decontaminated of foreign substances. However, nutrition and food preparation techniques cannot be held responsible for all the severe dental attrition. In fact, the unusual traces of erosion observed show that the front teeth of the community might have been utilised like a third hand.

The differences that emerge between the men and women in the community with respect to traumas, dental caries, enamel hypoplasias etc. are more likely to result from the division of household work rather than the social status differences between the two sexes. The higher rate of dental caries and anaemia in women and the higher frequency of osteomalasia in elderly women seem to be a product of the women's home-based life style. In an overall assessment, it can be stated that the high frequency of traumas, infectious diseases, metabolic disorders, severe growth retardation, growth disorders and short stature combined with the ecological characteristics of the region show that the Tasmasor community is a community in the low socioeconomic group with raising livestock as the fundamental pattern of earning a living.

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Figure 1: The graveyard area concentrated in the high region of the hill in Tasmasor Illustration 2: Distribution of grave pits according to earth structure

Figure 2: Directional uniformity of the graves

Figure 3: Directional uniformity of the graves

Figure 4: The condition of the trapezoid shaped grave pit before digging

Figure 5: Simple earth burials

Figure 6: Graves surrounded by stones (M-13)

Figure 7: Graves surrounded by stones (M-9)

Figure 8: Flat stone placed at the foot of the pit (M-11)

Figure 9: A series of stones placed along one side of the grave (M-27)

Figure 10: Wood remains used as cover system in grave number M- 61

Figure 11: Wood placed on the long sides to be used as platform (M-74)

Figure 12: An example of covering the grave with wood (M-35)

Figure 13: An example of a grave covered with wood (M-111)

Figure 14: Detail from the mode of installation of wood (M-21)

Figure 15: An example of a grave covered in a composite fashion with wood and stone (M-69)

Figure 16: Grave cover system where wood and stone are used together (M-55)

Figure 17: Two infant skeletons buried together in grave number M-52

Figure 18: Secondary burial (M-228)

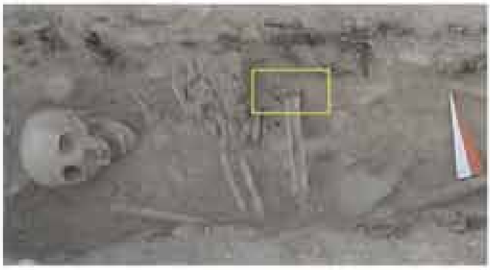

Figure 19: Bracelet found in the left arm of the individual numbered M-205

Figure 20: Air photograph of the Tasmasor graveyard and settlement area

Figure 21: Healed head injury in the left frontal (forehead) bone (M-92)

Figure 22: Healed injury mark in the right parietal (M-175)

Figure 23: Healed fracture in the nasal bone (M-77)

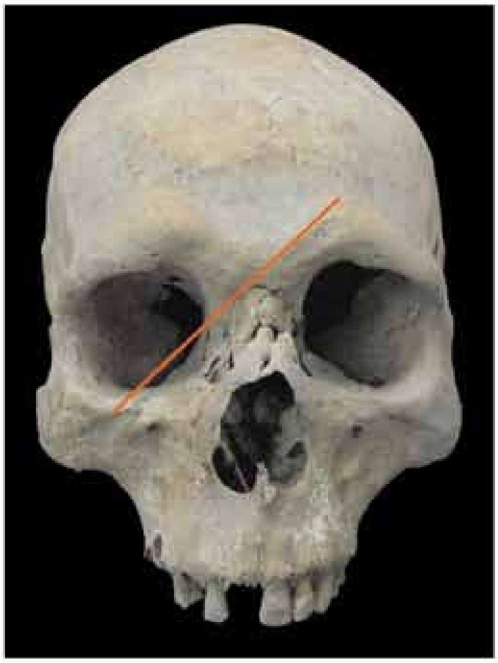

Figure 24: Healed incision mark starting from the left eyebrow arch and spreading to the lower border of the right orbital fossa (M-200).

Figure 25: Healing rib fractures (M-58)

Figure 26: Healed rib fractures in an infant (M- 81)

Figure 27: Healed rib fracture (M-6)

Figure 28: Rib fracture (M-221)

Figure 29: Healed fractures in the right and left radius boned associated with falling (M-195)

Figure 30: Healed fracture in the left ulna bone associated with falling (M-22)

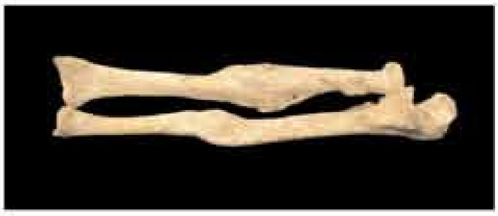

Figure 31a: Healed defence fracture in the right fore arm bones (general) (M154)

Figure 31b: Detail from healed defence fracture in the right fore arm bones (M-154)

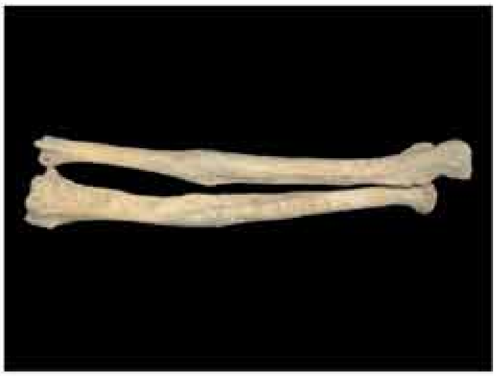

Figure 32a: Healed defence fracture in the left fore arm bones (general) (M-178)

Figure 32b: Detail from healed defence fracture in the left fore arm bones (M-178)

Figure 33: Healed fracture at the lower tip of the right thumb (M-76)

Figure 34: Healed fracture in the left collarbone (clavicle) leading to morphological deformity (M-76)

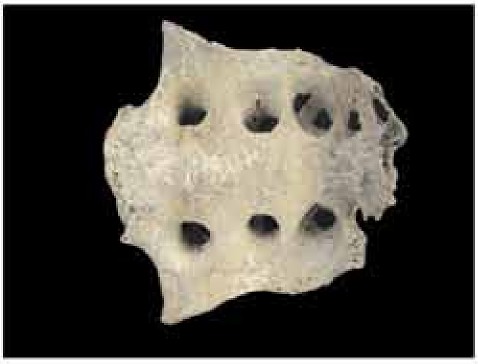

Figure 35: Healed fracture at the lower tip of the rump bone (sacrum) (M-174)

Figure 36: Active infection in the tibia bone (M-162)

Figure 37: Active infection in the tibia bone (M-120a)

Figure 38a: Active infection in the inner surface of the posterior head (occipital) bone (M-9)

Figure 38b: Detail from the active infection in the inner surface of the posterior head (occipital) bone (M-9)

Figure 39a: Active infection in the inner surface of the posterior head (occipital) bone (M-65)

Figure 39b: Detail from the active infection in the inner surface of the posterior head (occipital) bone (M-65)

Figure 40: Active infection in the thighbone (femur) (M-162)

Figure 41: Healed infection scar in an adult individual (M-138)

Figure 42: Regional infection scar in the adult individual no M-127

Figure 43a: Detailed view of the bone marrow inflammation (osteomyelitis) in the tibia bone (M-43)

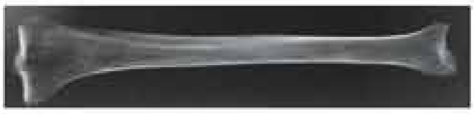

Figure 43b: X-ray of the bone marrow inflammation (osteomyelitis) in the tibia bone (M-43)

Figure 44a: Fusion due to infection in the lower leg bones (M-159)

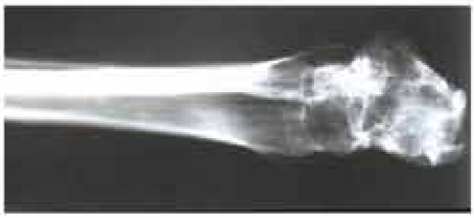

Figure 44b: X-ray of lower leg bones (M-159)

Figure 45: Infection in the inner surface of the ribcage (M-134)

Figure 46a: Infection in the corpus of the 5th lumber vertebra (M-58)

Figure 46b: X-ray of the 5th lumber vertebra

Figure 47: Infection in the auricular surface of the right coxae bone (M-160)

Figure 48: Infection in the inner surface of the wall (parietal) bone (woven bone formation) (M-34)

Figure 49: In-situ picture of the individual no M-83. The left leg is not in normal standing position

Figure 50: The size difference observed in the hipbones of an individual with cerebral palsy

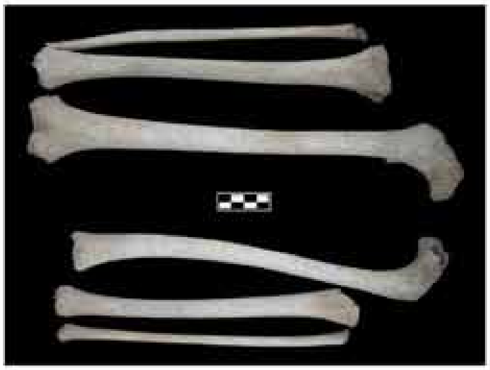

Figure 51: Comparison of leg sizes in an individual with cerebral palsy

Figure 52: The size difference in the metatarsal bones of the individual no M-83

Figure 53: X-ray of leg bones in the individual no M-83. The left side is shorter and thinner.

Figure 54: Bone change due to vitamin C deficiency in the individual no M-162

Figure 55a: Haematoma in the upper jaw (maxillae) in the individual no M-162

Figure 55b: Haematoma in the lower jaw (mandible) in the individual no M-162

Figure 56: Rachitism that manifests itself with a bending forward in the tibia bone (M-105)

Figure 57: Rachitism that manifests itself with a bending forward in the tibia bone (M-97)

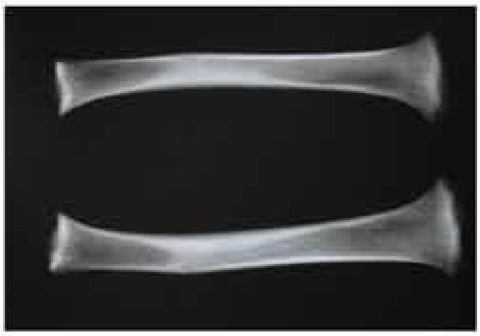

Figure 58a: Rachitism in the tibia bone (M-39)

Figure 58b: X-ray of the tibia bone (M-39)

Figure 58c: Bending forward in the upper end of the thigh bone (femur) (M-39)

Figure 58d: Severe enamel hypoplasias in the permanent primary molar teeth (M-39)

Figure 59: Rooftops of the traditional houses in Yiğittaşı (Sos Höyük, Erzurum) village and a view from their windows

Figure 60: Window at the roof of a house partially buried in earth in the vicinity of Erzurum

Figure 61: Arm bones in the individual numbered M-104. A part of the epiphyses are still not fused

Figure 62a: Comparison of the upper arm bone (humerus) of the individual numbered M-104 with a bone of normal length

Figure 62b: Comparison of the thigh bone (femur) of the individual numbered M-104 (below) with a bone of normal length.

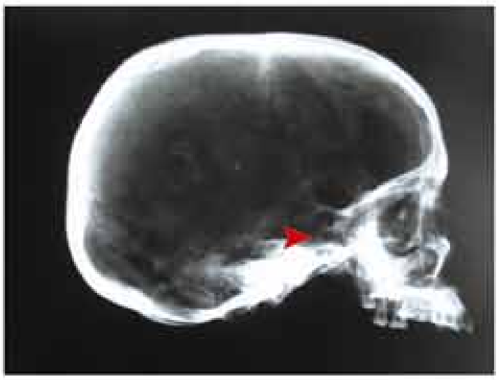

Figure 63: X-ray of the individual numbered M-104. The cella turcica is enlarged because of tumour

Figure 64: Comparison of the skeleton (M-218) reaching the size of a giant with a normal skeleton

Figure 65: Lower ends of the upper arm bones of the individual numbered M-218. Excessive bone growths are observed in this region with dense cartilage

Figure 66: Thoracic vertebrae fused with each other (M-218)

Figure 67: The overgrown upper end of the elbow bone (ulna) in the individual numbered M-218

Figure 68a: Lateral view of the skull in the individual numbered M-218. The posterior head, face, fore head and lower jaw bones of the skull are overgrown.

Figure 68b: Front view of the skull in the individual numbered M-218. The excessive increase in size observed in the lower jaw bone and prognathism.

Figure 69: Skull X-ray of the individual numbered M-218. The cella turcica is quite enlarged because of tumour. The skull bones have become excessively thick due to growth.

Figure 70a: Bone lysis in the vertebrae developing due to osteoporosis (M-6)

Figure 70b: Excessive bone lysis in the vertebrae developing due to osteoporosis (M-192)

Figure 71: Compression fracture in the vertebra due to osteoporosis (M-177)

Figure 72: Narrowing and depression observed in the lumber vertebrae due to osteoporosis (M-77)

Figure 73: Thinning in the wall bones (parietal bones) due to osteoporosis (M-58)

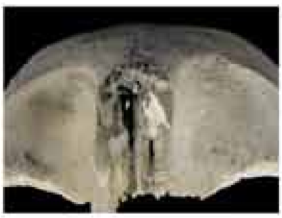

Figure 74: Cribra orbitalia that has developed in both orbital roofs (M-17)

Figure 75: Prominent Cribra orbitalia on the left orbital roof (M-220)

Figure 76: Porotic hyperostosis in the individual numbered M-23

Figure 77: Porotic hyperostosis in the individual numbered M-220

Figure 78a: Porotic hyperostosis showing severe development in the individual numbered M-5

Figure 78b: Cribra orbitalia showing severe development in the individual numbered M-5

Figure 78c: Enlargement in the cheek (zygomatic) bone of the individual numbered M-5

Figure 78d: Osteoporosis in the long bones of the individual numbered M-5

Figure 79: Enamel hypoplasia in the left lower canine tooth (M-198)

Figure 80: Severe enamel hypoplasia in the lower third largest molar tooth (M-201)

Figure 81: Enamel hypoplasia in the front teeth of the individual numbered M-201

Figure 82a: Caries in the smaller molar (premolar) and larger molar (molar) teeth of the individual numbered M-193

Figure 82b Abscess developing due to caries in the individual numbered M-193

Figure 83a: Severe dental attrition in the individual numbered M-76

Figure 83b: Severe dental attrition in the individual numbered M-41

Figure 84: Erosion due to tooth prick use in the individual numbered M-206

Figure 85a: Unusual attrition in the upper jaw incisive teeth's surfaces facing the tongue (M-205)

Figure 85b: Unusual attrition in the lower jaw incisive teeth's surface facing the lip (M-205)

Figure 86a: Unusual and severe traces of attrition in the front teeth of the individual numbered M-42

Figure 86b: Despite severe front teeth attrition, the attrition in the posterior teeth is at a mild level (M-42)

Figure 87: Severe attrition in the front teeth of the individual numbered M-49

Figure 88a: Front view of the chip fractures (chipping) in the front teeth

Figure 88b: View from above of the chipping fractures in the front teeth

Figure 89: Large size chipping fractures in the upper incisive teeth of the individual numbered M-113