

## EXCAVATIONS AND MATERIALS FROM QAL'A-YE TEPE, SISTAN (IRAN): AN ARCHAEOLOGICAL PROJECT OF THE 60S OF THE LAST CENTURY

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**Abstract:** The paper addresses an interesting site in the easternmost region of Sistan, Iran, partially excavated in the 1960s. The article proposes a preliminary study of Qal'a-ye Tepe, particularly concerning ceramic production. The author investigates the collections of unglazed and glazed pottery fragments existing in Italy, describing their fabrics and shapes. The excavations were conducted by the late Professor Umberto Scerrato, the director of the Italian Archaeological Expeditions of IsMEO (Istituto Italiano per il Medio ed Estremo Oriente), IsIAO (Istituto Italiano per l'Africa e l'Oriente), and ISMEO (Associazione Internazionale di Studi per il Mediterraneo e l'Oriente). These explorations revealed interesting archaeological and chronological data, although they were never published. However, the excavations at Qal'a-ye Tepe were particularly significant as they presented a very long chronological sequence with three main phases ranging from the 3rd century BCE to the beginning of the 11th-12th century CE. This archaeological ellipsoidal/oval site, with the longest west-east axis of 125 m and the shortest north-south one of 85 m, constitutes a kind of fortress with the characteristics of the ancient nomadic camps found throughout Asia. The site, formed by the decay of raw earth structures, is located about 20 km northeast of Zabol, near the village of Qasemabad, a few kilometers north of the ruins of old Zahedan, or Zaranj in the Islamic era.

**Keywords:** Sistan, Iran, Archaeology, Qal'a-ye Tepe, Pottery.

**چکیده:** این مقاله به محوطه‌ای جذاب در شرقی‌ترین منطقه سیستان ایران می‌پردازد که بخشی از آن در دهه ۱۳۴۰ حفاری شده است. این مقاله یک مطالعه مقدماتی درباره قلعه تپه، به ویژه در مورد تولید سفال است. نویسنده به بررسی مجموعه‌ای از قطعات سفالی بدون لعاب و لعاب‌دار موجود در ایتالیا پرداخته و بافت‌ها و اشکال آن‌ها را توصیف می‌کند. این کاوش‌ها توسط پروفیسور فقید اومبرتو اسکراتو، مدیر کاوش‌های باستان‌شناسی ایتالیایی IsMEO، IsIAO و ISMEO انجام شده است. این اکتشافات داده‌های باستان‌شناسی و گاه‌شماری جالبی را آشکار کرده‌اند، اگرچه هرگز منتشر نشدند. اما، کاوش‌های قلعه تپه از اهمیت ویژه‌ای برخوردار بوده‌اند، زیرا یک توالی زمانی بسیار طولانی را با سه مرحله اصلی از قرن سوم قبل از میلاد تا قرون یازدهم و دوازدهم پس از میلاد ارائه داده‌اند. این محوطه باستان‌شناسی بیضوی شکل، با طولانی‌ترین محور غربی-شرقی به طول ۱۲۵ متر و کوتاه‌ترین محور شمالی-جنوبی به طول ۸۵ متر، نوعی دژ با ویژگی‌های اردوگاه‌های عشایری باستانی است که در سراسر آسیا یافت می‌شود. این محوطه که بر اثر پوسیدگی ساختارهای خاکی خام به وجود آمده است، در حدود ۲۰ کیلومتری شمال شرقی زابل، در نزدیکی روستای قاسم آباد، در چند کیلومتری شمال ویرانه‌های زاهدان قدیم یا زرنج دوران اسلامی قرار دارد.

**کلیدواژه:** سیستان، ایران، باستان‌شناسی، قلعه تپه، سفال.

### I. Records of excavations

Until the 1960s, Sistan had been the subject of scarce consideration by systematic archaeological research activities, both for the geomorphological conformation of the region that was difficult to access and, above all, for an underestimation of its historical and cultural importance by scholars.

Up to that moment, the activities had mostly been limited to reports and surface reconnaissance. In this regard, we recall: those of Tate in 1903 (1910-1912), concerning the monuments of the historical period; the more scrupulous one by Stein in 1916 (1928), limited to the Iranian part of the region, which led to the identification of numerous prehistoric sites; the one of Herzfeld (1931-1932), also in the Iranian Sistan, who made excavations in Kuh-e Khwagha, and to whom we owe the recognition, on the site, of the palace-sanctuary of the Parthian-Sasanian period; the one of the Hackin mission in Afghan Sistan in 1936, of which only photographic documentation remains, but which testified the opening of a small trench in Nad-i 'Ali by

Ghirshman, published in 1939 (1939; 1942); finally, two reconnaissance made by W. Fairservis Jr. in 1949-50 in the Afghan Sistan again, which made other prehistoric sites in Sistan known (1961), and the last activities conducted 50 years ago (Dales 1977).

Though certainly pivotal, all those discoveries were not enough to shed light on the history of ancient Sistan: they acted, however, as a springboard from which to dive. It was the Centro Studi e Scavi in Asia of IsMEO (then IsIAO and now ISMEO), directed by Giuseppe Tucci, that designed an organic research program, including a methodical re-examination of the data previously collected on the field and a re-examination of the historical sources together with the fulfillment of a series of systematic surveys and excavations. The choice of the sites to investigate was made following two surveys by Giuseppe Tucci himself in 1959 and 1960, and they were: Shahr-e Sokhte, the mounds of Qal'e-ye Rostam and Tepe Abdali for the prehistoric and protohistoric phases; Dahāne-ye Gholāmān and Namaki for the Achaemenid period

(now you can see Genito ed., 2023), Qal'a-ye Sam for Parthian time (Genito 2021); Tepe Shahrstan, Kuh-e Khwagha and Qal'a-ye Tepe for the Hellenistic, Sakā-Parthian and Sasanian period; the old Zahedan and Bibi Dust for the Islamic era (Genito ed., 2023). The activities of the Italian archaeological mission lasted until the mid-70s and included the participation of several members: Umberto Scerrato and Gherardo Gnoli of the Università "L'Orientale" of Napoli (1962); Giorgio Gullini of the Università of Torino (1961); Maurizio Tosi (since 1967); Marcello Piperno; Raffaele Biscione; Maria Grazia Bulgarelli; the architect Cesare Carbone (1962); the designers Enrico Frascarolo, of the Amministrazione Provinciale di Torino (1960 and 1961) and Tullio Tamagnini, of the Amministrazione delle Antichità e Belle Arti (from 1963); the assistants Manlio Valentini (from 1960 to 1965) and Gabriele Graziani (from 1961) of the Amministrazione delle Antichità e Belle Arti; the photographer Francesca Bonardi and, later on, the architect Luca Mariani; the archaeologist Bruno Genito; the architects Eugenio Baldari, and Giuseppe Berucci; and other mission members split into various working groups that operated on different sites.

## II. Introduction

During the activities of the Italian Archaeological Mission in Sistan, Umberto Scerrato took care of the site, together with the assistant Gabriele Graziani, the designer Enrico Frascarolo, and thanks to the collaboration of Mr. Kangewi, an official of the General Service of Antiquities of Iran. Qal'a-ye Tepe was described as a fortified place looking like a low hill with an ellipsoidal/oval shape, which rises for a dozen meters above the desert plane, measuring about 160×130 m, with the major axis in the east-west direction (Fig. 1). The mound appears to be made up of an artificial formation, unlike what usually occurred in Sistan at that time, where the ruins stood on a base of natural terrain shaped by the wind. The site had previously been visited by Stein (1937, 90-91), who had collected a considerable amount of Islamic glazed pottery and ribbed decoration pottery, typical at Kuh-e Khwagha too. Before starting the excavation tests, the team headed by Scerrato surveyed the area in 1960, collecting, among the surface material, a small quantity of white and blue late glazed, an abundant amount of Sasanian type and engraved pottery, with light and dark green glazing (the so-called "sgraffiato"), which is now considered mainly coming from the Persian Gulf (Rougelle 2004, 14, 15) and a considerable amount of pottery with ribbed and burnished decoration, similar to that found in Kuh-e Khwagha and Tepe Sharestan (Mohammadkhani, Mehrafarin 2021).



Figure 1. Qal'a-ye Tepe, photo-satellite after Google Earth 2022.

## III. Excavations

It was in 1961 and 1962 that the team opened a series of trial trenches (Fig. 2), highlighting the site's three main life periods and numerous sub-phases.

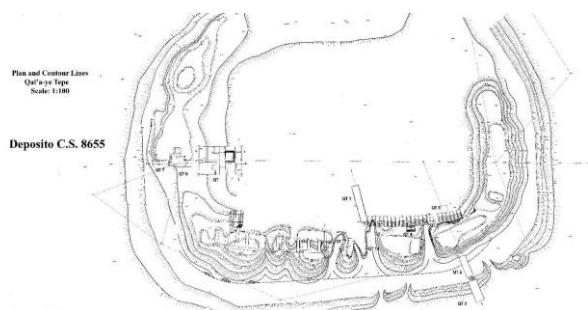


Figure 2. Qal'a-ye Tepe, General plan, after MAI, Dep. Cs., by Tullio Tamagnini.

In particular, the main trench, called QT, and ten other ones, marked by the same abbreviation followed by a progressive number from 1 to 10, were opened too, together with QT11, opened in 1962 (Fig. 3). The works revealed that the tepe was defended by a double ring of walls. The external one, almost completely destroyed, is the most recent and dates back to the Islamic era (period III); its thickness is about 2 m, it is built in unfired bricks, and is about 9 m far from the innermost wall, datable to the Parthian-Sasanian period (period II) and, unlike the first, it is preserved for almost the entire perimeter, except in the southern area. It is an imposing earthen bastion thicker than 10 m, made with non-homogeneous layers of earth, reinforced by a sort of pisè; in addition, at some spots, the wall has an unfired brick cladding, especially along the external façade on the north-east corner and inside the north-west one. The north-east corner has also a series of at least eleven vaulted rooms opening inwards and made of pisè in the lower and upper parts, or walls and vaults of unfired bricks. These rooms seem to belong to a more recent phase of the lifespan of the wall, but earlier than the external boundary wall, therefore to period III, which partially reused them. The large internal boundary wall as it seemed evident at trench QT4, leans against an older one with a very clear shoe profile, located in an

even more internal position. The latter is visible only on the inner north-west corner. The upper part is made of flat bricks alternating, every two rows, with cut bricks. However, this arrangement does not seem to correspond to the internal part, at least from what can be seen in trenches QT9 and QT1; in fact, the external cladding, discovered at trench QT4, seems to be built with irregular blocks of clay instead. This more ancient and inner city wall refers to the period I, datable at least to the ancient Parthian period according to Scerrato. Unfortunately, neither the virgin soil nor the levels connected with the base of the scarp wall were reached. Nevertheless, it was recovered. Among the materials of the earth bastion of period II encapsulating the walls of period I (QT1), there is also the painted pottery which Scerrato suggested to call *Dipinta Storica Sistana* (Sistanic Historical Painted), absent from all the other Sasanian and post-Sasanian layers at the site. This pottery is characteristic of the second layer of Qal'e-ye Sam and it is present in the VI layer of the palace of Kuh-e Khwaje. It is believed that it can not date back beyond the 2nd–3rd century BCE; it is also absent among the ceramic materials of the Achaemenid period of Dahāne-ye Gholāmān. The QT trench, built at the base of the external wall, must be attributed to period III, which highlighted – under the current level of the desert and under another sterile level consisting first of sand and then clay – the ceramic fragments of the

period that do not date back to an era before the 13th century. In this trench, some traces of a structure datable to period III have been revealed: they can be connected to ceramic engraved with monochrome or green, yellow, and dark glazing, the so-called “sgraffiato”. As far as period II is concerned, the findings attributable to it consist exclusively of ceramic, of which most of the material comes from the QT trench and the QT1 test. Within these trenches, no wall has been highlighted, and the ground appears as a homogeneous mass, resulting from the collapse of raw bricks mixed with coal and animal bones. Starting from the frequency of the materials, two main levels can be distinguished: a more superficial and a deeper one, even if there is no substantial difference between the ceramic types collected from both. A third level has been identified in QT about one meter above the desert floor, characterized by the presence of a millstone and very fragmentary and atypical ceramics. However, the survey did not reach the virgin soil. Period III seems to have been occupied very long back to the 10th–12th century, with visitors until the 15th century. The Islamic occupation seems to have taken place after a very long gap when the structures of the Sasanian phase II had fallen into disrepair. It is not possible to fully understand whether there was also a gap between the end of Period I and the beginning of Period II.

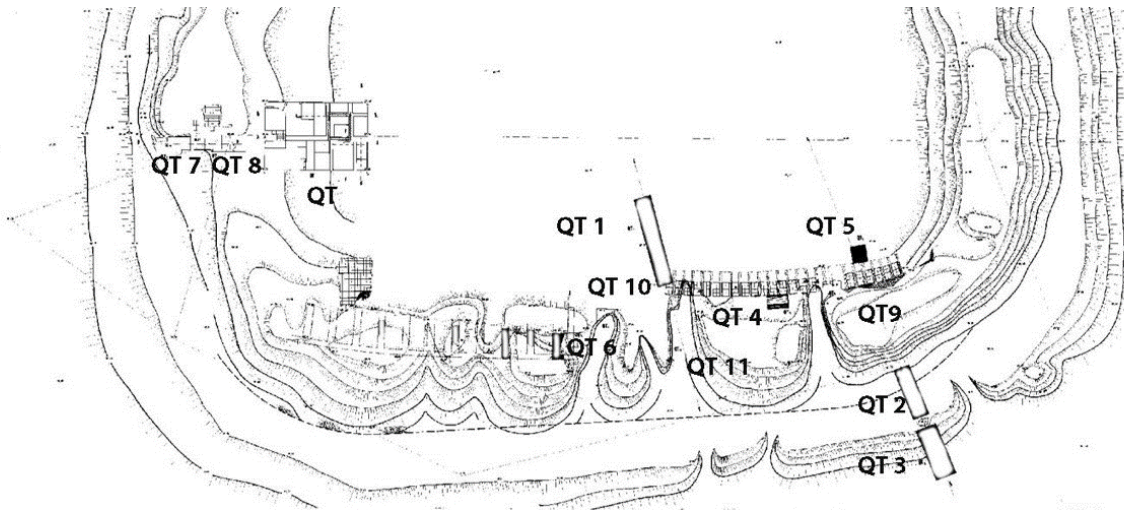


Figure 3. Qal'a-ye Tepe, map with the detail of the test trenches nos 1-11, after MAI, Dep. Cs., by Tullio Tamagnini.

#### IV. Materials

The archaeological material, mainly consisting of ceramics, found in Qal'a-ye Tepe during the surveys carried out in the 1960s by the IsMEO (then IsIAO now ISMEO), had been brought to Rome, Italy, and deposited partly in an area of the Museo delle Civiltà/Museo d'Arte Orientale “Giuseppe Tucci”, and partly in the headquarters of the IsMEO / IsIAO/ISMEO Centro Scavi. In 2006, following the

relocation of the Centro Scavi from via Merulana to via Aldovrandi in Rome, the material was temporarily transferred to another deposit of the Museo delle Civiltà/Museo d'Arte Orientale “Giuseppe Tucci”; subsequently, in August 2007, it was definitively transported to CISA (Centro Interdipartimentale di Servizi per l'Archeologia), at the Università di Napoli “L'Orientale”, under my responsibility. Already during the first move, an attempt to understand the quality and

quantity of the documentation available was made. For this reason, a sort of inventory was drawn up, which could facilitate the reorganization and publication of the material and the site at a later stage. The paper material found consists of two short reports written by Umberto Scerrato: one on the Qal'a-ye tepe, drawn up in 1961, and the other, named "The excavation trenches", on all the Sistan sites which, in the 60s, were the subject of investigations by the Italian archaeological mission. The inventory includes a site map with various sections of the trenches and plans of the excavations; 94 photos concerning the pottery, 8 of the site and 96 of the excavation; about 42 level drawings of one of the trenches (QT 11); three notepads containing excavation notes (a few lines and some sketches). At the moment it is not possible to find either the excavation diaries or an inventory of the materials, and not even to know if they have been lost or never existed. The fact that almost 60 years have passed since the activities of the Italian Archaeological Mission, which took place in Qal'a-ye Tepe has probably determined this serious scarcity of documentation. In addition, it is difficult to interpret the information available and the absence of any member who has been part of the aforementioned mission. All this has caused quite a few problems in dealing with this work. A work of systematic organization of the Qal'a-ye Tepe documentation began in August 2007. The vast majority of ceramic finds are composed of two specific classes: glazed and unglazed. There is also a very small percentage of non-ceramic materials, including metals, fragments of stone pottery, glass, and illegible bronze coins. The material was confusedly distributed in boxes and, therefore, it was first necessary to separate and group it in different places, according to its original provenance and stratigraphic location. Soon after, the fragments were cleaned up and left to dry. Looking more carefully at the material during the washing, it was possible to note that most of the fragments had already been selected in the 60s according to a preliminary distinction between "diagnostic" and "non-diagnostic" fragments. Naturally, with the aid of notes, from the excavation plan and the excavation report drawn up by Umberto Scerrato, a comparison was then made between the number of trenches indicated by labels of the individual envelopes containing the material with that of the dug, indicated in the available plans. From this comparison it was possible to note that complete documentation was not at disposal, hence the material of all the investigated trenches was not present, apart from the QT trench, QT 1, QT 2, QT 3, QT 3 bis, QT 4, QT 6, QT 11. So, QT 5, QT 7, QT 8, QT 9 and QT 10 were missing. Unfortunately, it was not possible to understand the reason for these absences: we can not know if it was not possible to find material from those trenches or if, otherwise, it was so insignificant that its

transfer to Italy was not considered useful. Despite this, the material available made it possible to do partial work, quite significant both chronologically and typologically. Once the ceramic material was divided into the two main classes, the glazed and the non-glazed, the quantity of material available in each class, level, and trench was determined; 274 fragments belonged to the first class, while 988 fragments to the second. The samples are not statistically very significant but reflect a more or less generalized ratio between glazed ceramics (which is almost always between 10 and 20%) and the unglazed one. The discussion that follows is, however, not an exhaustive description of the material (to which I will refer later), but only a division into phases of the work carried out.

The unglazed pottery was then divided, counted, and recorded, on paper by wares: common, ribbed, painted, and burnished ceramics are part of typical products of the Sistan area. Then we proceeded to register - first on a paper card to facilitate the work, and then on a digital format - all the data with the addition of the distinction for fabrics or ceramic pastes, and this represented the third phase of the work. The fabrics chosen as samples were observed on a macroscopic level, favouring the technical characteristics of the mixture and the treatment of the surface. The fabrics of the unglazed fragments obtained from this research are 15. For each selected sample, a description was made, highlighting the appearance of the ceramic body, the fracture, and the colour, and reference photos were then taken. All the paperwork was computerized using the Excel and the Access format, both capable of containing data in fields similar to those of the paper file, and thus obtaining very useful statistical and quantitative information. A computerized archive is easier to manage, for it can be updated easily and, being not physically macroscopic, it can be looked into briefly. Furthermore, throughout these programs, information can be implemented, displayed, correlated, and interrogated; for example, a graph of the distribution frequency can be made, displaying a fabric or several fabrics within a level, multiple levels, or an entire essay. The work steps described up to now for unglazed ceramics have also been carried out for glazed ceramics. After registration and counting, it was divided by wares. From this subdivision 9 main wares have been identified: slip painted, underglazed, sgraffiato, sgraffiato and splashed, splashed, monochrome green, monochrome turquoise, monochrome black, and monochrome dark brown. Each fragment was classified according to the corresponding ware, and for each fragment the decorative motif was described too. The next step was the sampling of the fabrics, chosen with the same criteria of the fabrics of the unglazed fragments. In this case, however, the treatment of the surface or the colour was not included, as it is covered

with a showcase and it is part of a completely different technology and function. The surface was not included in the fabrics, but within the wares, though differently. The samples of glazed ceramic fabrics that have been extrapolated are 7. For each of them, a detailed description has been outlined, also including several reference photos. As for the unglazed fragments, all these data were reported in an Excel database (copied in Access format as well). It consists of columns and horizontal lines called records. Within each record, the fragments characterized by similar fabric, ware, and shape are grouped (the fragments have also been preliminarily divided by shape, only mentioning whether they are open or closed). Subsequently, we proceeded to the selection of those fragments thanks to which it will be possible to reconstruct a typology. In this case, the choice was limited to those fragments coming from objects whose shape and type are well-defined. Whenever a new form or type appears, the fragment is extrapolated and set aside for graphic representation. This work was done for both the unglazed and the glazed classrooms. As mentioned before, the fragments selected for the first are 105, while for the second they are 26. Each fragment has been numbered and inserted in a list containing also the essay and the level from which it comes. Approximately 40 drawings made in the 60s must be added to the 105 selected fragments from the unglazed pottery. The drawings were checked and, despite the lack of inventory, it was possible to reconnect each drawing to the corresponding fragment, thanks to a number written in pencil on the fragment which is also found on the drawing. Except for some fragments, which were drawn from scratch because the corresponding drawings were wrong, the other drawings were well executed; they were scaled and polished using the AutoCAD program. It is necessary to mention a further problem that arose during the first phases of registration and counting of the materials: the wording affixed on the tags indicating the site, the number of the trench and the horizontal and vertical origins used to mark the material found in the various trenches appeared to be quite particular and left many doubts. For example, upon a first examination of the two terms QT1B Ib and QT1 Ib, it was assumed that the material marked by them came from the same trench, that is no 1. Carrying on the examination of the tags, it turned out that the same phenomenon of absence or presence of a capital letter after the acronym QT recurred for all the trenches up to QT6, and this aroused suspicion. We began to think that the provenance was not the same and that the cards referred to different trenches, also because the ones without letter A or B perfectly matched the trench layout at our disposal, while the others did not. Consequently, it has been inferred that the material stranger to the plans is not part of QT1, QT2, QT3,

QT4, QT5, and QT6 trenches and that, conversely, it comes from the QT trench. Furthermore, through a careful examination of the notebooks and sketches drawn up by Scerrato, we noticed the presence of a rectangle divided lengthwise into twelve squares. In our opinion, the rectangle represents the QT trench. Both the upper and lower squares are numbered from 1 to 6. The upper squares should, therefore, correspond to the letter A of the cards placed immediately after the number, while the lower squares should correspond to the letter B. For this reason, we believe that everything that, after the initials QT, presents the letter A or B, comes from the main trench, while the cards that do not have these letters refer to material from trenches from 1 to 6. Such a conclusion represented the criterion with which we went on working in the most possible proper way. Back to the description of the operations performed on the material, with the drawings available, we started to divide the drawings according to their shape, thus identifying thirteen shapes whose description has been proposed: cup, basin, small olla, olla, jar, jug, single-handled jug, amphora, bottle, miniature vase, lid, filter, biconical vase. The dimensions were also observed and reference limits were developed for the dimensions for certain shapes, i.e.: cup and basin defining, for example, a “small”, “medium” or “large” cup, according to the rim diameter. For other shapes such as jars and pitchers, we did not use this criterion since, in this case, the rim diameter is not indicative of the size of the body. In fact, a jar with only 8 cm diameter can also have large dimensions. For the type of material, we can not neglect an examination of the various types that may belong to the aforementioned shapes, determined on the basis of the morphology of the body – in the case of the open shapes – and of the neck – in the case of the closed shapes. Each type has been assigned a Roman number. In the case of the cups, for example, number I indicates a hemispherical cup, II stands for a truncated cone cup, and so on. After that, the subtype was also analyzed, indicated by lowercase letters, which we focused on examining the morphology of the hem. Before moving on to the next step, which is the assignment of the shape, type, and subtype to each fragment, each of them has been initialed, affixing on the internal surface the origin, the inventory number (INV) and an identification number (ID), starting from QT1 up to the QT 11 trenches, continuing with the QT trench and, finally, with QT S, QT '62 and QT '64. The next phase, the typological assignment, was digitized with the same formats used for the work carried out so far, thus creating a database complementary to the first one which, unlike that, does not group different fragments in the same record, but has only one fragment for each one. Moreover, the ID number, the inventory number, and a field indicating whether the fragment drawing is present or not have been added to

the database fields. This has the purpose of making the fragment identifiable, providing it with a sort of identity card that prevents it from being confused with other fragments, should the information relating to it be searched on the database. In addition, one or more photos were taken for each fragment. Every fabric has a graph that shows, trenches and levels, and their distribution. Graphs have been made relating to the fabrics, illustrating their most frequent shapes and types, and the topographical and stratigraphic distribution.

### V. Macroscopic Analysis of the Fabrics of Un-glazed Ceramics<sup>1</sup>

The appearance of the ceramic body can be more or less compact, grainy, and sandy. This also applies to the presence of inclusions, their size, frequency, and color. Another important factor is the colour of the surface and the one visible in the fracture. For the description of the colour of the fabric samples, we have used the Munsell Soil Color Charts, which refers to three variables by which it is possible to describe the surface and fracture appearance of a fragment. The variables are the colour (hue), which refers to the position of the colour in the spectrum, the value (value) which indicates how light or dark a colour is on a scale from 0 (black) to 10 (white), the degree of saturation or purity of colour (chroma) ranging from 0 (neutral grays) to 10 (purer colours). The colour is, therefore, expressed with the order colour-value-degree of purity, with a space between the colour and the value and an oblique line between the value and the degree of purity (Orton,



**FABRIC 1**



**FABRIC 2** (Provenance of the sample: QT1 bis S) Hard ceramic body, rather compact and well purified; clear but grainy fracture. Background colour: 2.5 YR 6/8 (light red). The inclusions are extremely small in size for the most part; the yellowish-white ones are better evident, but they are present and distributed in a rather homogeneous way, with small dark-coloured inclusions and others of micaceous nature; some inclusions of larger dimensions and rounded morphology, similar to

Tyers, Vince 1993, 136-137). The identification of the fabrics within a ceramic corpus provides information on different factors, such as the type of production, the identification of the production centers, the distribution area of ceramics, and the relationship between the production and consumption centers.

This identification allows to analyze aspects concerning technology, function and social significance of the different ceramic types. After these preliminary clarifications, it is possible now to proceed with the analysis of the 15 samples of the un-glazed ceramic fabrics recognized:

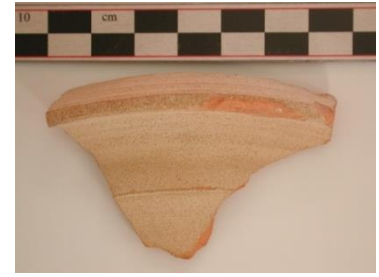
Macroscopic Analysis of the Fabrics of unglazed Ceramics

**FABRIC 1** (Provenance of the sample: QT1 bis S) Very hard and compact ceramic body; clear fracture even if with a slightly jagged appearance. Background colour: 5 YR 7/4 (pink). Inclusions are predominantly round in shape, from small to medium in size (less than 1 mm in diameter), and mostly dark red and dark gray in colour; rare white inclusions and probably chalky in nature, smaller than the previous ones; traces of very small micaceous inclusions. The vacuoles, present with low frequency, are probably attributable to vegetable elements in the dough. The external surface has a whitish engobe (similar to 10 YR 8/2 - 8/3) which, however, fails to cover the larger inclusions. Furthermore, the fragment taken as a sample shows traces of an engraved decoration on the internal surface with epigraphic signs.

those peculiar of fabric 1, are sporadically distributed within the ceramic body. On macroscopic analysis, no vacuoles are perceptible. Both the internal and external surfaces are often covered (similar to the fragment taken as sample) by a whitish engobe (similar to 10 YR 8/2 - 8/3) or a light one (similar to 5 YR 8/3) of thin thickness, smooth enough to reveals the underlying inclusions; in other cases, however, the surfaces simply have a smoothing or appear burnished.

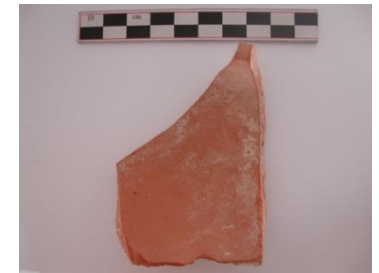
<sup>1</sup>At the moment, we are not able to present the archaeometric results of the analyses made on the samples kept in the Museo Nazionale di Arte Orientale (now Museo delle Civiltà) of Rome, brought to Italy

in the 60s of the last century. As soon as possible we will publish the related achieved data.

**FABRIC 2**

**FABRIC 2.1** (Provenance of the sample: QT 3-4 B III) Rather hard and compact ceramic body; clear but slightly grainy fracture. Background colour: 2.5 YR 6/6 (light red). The inclusions are for the most part very small in size; in addition to very small dark-coloured inclusions and those of a micaceous nature, better perceivable white-yellowish inclusions, probably of a chalky nature, are distributed with considerable and

uniform frequency and characterized by larger dimensions than the others. On macroscopic analysis, the presence of vacuoles is not evident. The external surface is often covered (as in the case of the fragment taken as a sample) by a light engobe (similar to 5 YR 8/3), very thin, and smooth enough to allow a glimpse of the underlying inclusions; in other cases, however, the surfaces simply have a smoothing or appear burnished.

**FABRIC 2.1**

**FABRIC 2.2** (Provenance of the sample: QT 3 A III) Hard and quite compact ceramic body; fracture with a rather grainy and jagged appearance. Background colour: 5 YR 7/6 (reddish yellow). The mixture is characterized by the presence of white-yellowish inclusions, probably of chalky nature, small and medium in size and with irregular morphology, distributed evenly and with considerable frequency; there are also very small dark-coloured inclusions and others of

micaceous nature. The vacuoles, rather sporadic, are probably attributable to the inclusion in the mixture of elements of vegetable nature. The external surface is often covered by a light engobe (similar to 5 YR 8/3) that is very thin, and smooth enough to reveal the underlying inclusions; moreover, in the case of the fragment taken as a sample, on the internal surface there are traces of a burnished made on a rather thick red-lacquer "wash" layer (similar to 10 R 4/6 - 4/8)

**FABRIC 2.2**

**FABRIC 2.3** (Provenance of the sample: QT 1AB I) Compact ceramic body; fracture with a sandy appearance. Background colour: 5 YR 6/4 (light reddish brown). The fabric is characterized by a dense presence of extremely small inclusions, mainly yellowish-white in

colour and with a rounded morphology. Micaceous inclusions and some sporadic ones of similar to the former in nature and morphology, but larger in size, are visible too. The sandy texture makes the presence of vacuoles virtually imperceptible.



**FABRIC 2.3**

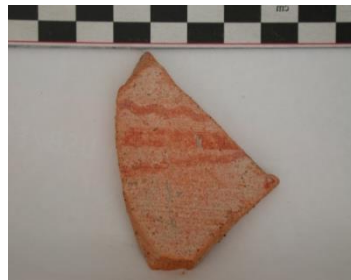


**FABRIC 2.4** (Sample Provenance: QT11 IIb) Rather hard, finely porous, and quite compact ceramic body; fracture with a jagged and slightly grainy appearance. Background colour: 5 YR 7/8 (reddish yellow). The inclusions are of different typology and morphology: while those of a very small size – yellowish-white – are distributed more uniformly, those of red, gray, and dark gray colour – larger in size and irregular but more frequently rounded – are less homogeneous and

frequently within the ceramic body; moreover, rare ones are visible too, including brilliants of a micaceous nature. Rather sporadic vacuoles are probably attributable to the inclusion in the mixture of elements of a vegetable nature. On the external surface of the fragment taken as a sample, there are traces of a light pink engobe (5 YR 8/4), extremely thin, which reveals the underlying inclusions, and on which a red-orange painted decoration is carried out (10 R 4/6: red).



**FABRIC 2.4**

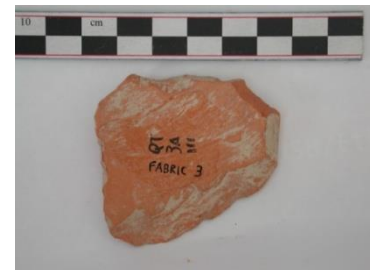


**FABRIC 3** (Provenance of the sample: QT1 bis S; Trench QT3A III) Ceramic body with a rather plastic appearance. The fracture has a slightly lamellar appearance, less grainy than Fabric 2. Background

colour: 2.5 YR 6/8 (light red). The inclusions are slightly larger than the latter, albeit of a similar nature; however, they are distributed less frequently within the ceramic body. Vacuoles are rare but still visible.



**FABRIC 3**



**FABRIC 4** (Provenance of the sample: QT1 bis S) Hard ceramic body, very compact and well purified; clear fracture. Background colour: 2.5 YR 5/8 (red). Inclusions are extremely small in size, barely noticeable to the naked eye. Evenly distributed within the ceramic body, they are yellowish-white and dark gray; there are

also sporadic ones, including some bright of micaceous nature. The outer surface is often covered with a light engobe (similar to 5 YR 8/3), very thin and smooth enough to reveal the underlying inclusions. The fragment taken as the sample has an engraved decoration, probably epigraphic, on the external surface.

**FABRIC 4**

**FABRIC 4.1** (Provenance of the sample: QT 3-4B III)  
It has a compact ceramic body, similar to the one of Fabric 4, but it is characterized by an evident prevalence

of small and medium-small white inclusions. It differs from Fabric 2.1 by virtue of a lower graininess and a consequent greater compactness. Background colour: 2.5 YR 5/8 (red).

**FABRIC 4.1**

**FABRIC 5** (Sample Provenance: QT3) Fairly hard and fairly compact ceramic body, well purified, characterized by remarkable lightness; rather clear fracture but slightly porous in appearance. Background colour: 5 YR 8/4 (pink). The very small inclusions, barely perceptible at a macroscopic level, are mostly dark in colour and rounded, and less evident than the

vacuoles of lamellar morphology and slightly larger dimensions; on the other hand, the sporadic included brilliants of probable micaceous nature are better visible. The external surface is covered by a very thin whitish engobe (similar to 10 YR 8/2 – 8/3); in the case of the fragment taken as a sample, it shows traces of an engraved geometric or epigraphic decoration.

**FABRIC 5**

**FABRIC 5.1** (Sample Provenance: QT3) Quite hard and purified ceramic body, but characterized by remarkable porous texture and lightness; clear but grainy fracture. Background colour: 7.5 YR 8/4 (pink). At a macroscopic level, only sporadic inclusions of probable micaceous nature are distinguishable, while

round vacuoles of very small and small dimensions are more evident. The external surface is covered by a very thin whitish engobe (similar to 10 YR 8/2 – 8/3) which cannot cover the underlying inclusions. Furthermore, the external surface of the fragment taken as a sample reveals traces of an engraved geometric or epigraphic decoration.

**FABRIC 5.1**

**FABRIC 6** (Provenance of the sample: Trench QT 3A III) Poorly compact ceramic body; very irregular fracture. Background colour: 2.5 YR 6/8 (light red) The fabric is characterized by the presence of inclusions irregular in morphology, mostly dark red and dark gray, large (between 0.5 and 1 cm), with a quite angular profile. There are also small and medium-size inclusions

of white colour and chalky nature, as well as scattered inclusions of a micaceous nature. The fragment, which is part of a hand-modeled vessel, has very rough surfaces with outcropping inclusions and a crackle-like appearance, despite a layer of light clay spread to make them uniform (probably broken during firing due to lack of dilatometric agreement).

**FABRIC 6**

**FABRIC 6.1** (Sample Provenance: QT11 Iib) Hard ceramic body, not very compact and rather rough; fracture of irregular and jagged appearance. Background colour: 2.5 YR 6/8 (light red). Inclusions in dark gray colour are distributed with high frequency but poor uniformity within the ceramic body. They have varying sizes and morphology: those of smaller dimensions

generally have a rounded morphology, while those larger (up to 5 mm) usually have an irregular morphology, mostly angular; moreover, medium-size dark red inclusions are sporadically present. Finally, inclusions of probable micaceous nature are quite frequent on the external and internal surface of the fragment taken as a sample, on which traces of fire are visible too.

**FABRIC 6.1**

**FABRIC 7** (Provenance of the sample: Trench QT 1B D) Compact ceramic body; somewhat sandy-looking fracture. Background colour: 10 YR 8/2 (white). Fabric

has very small yellowish-white rounded inclusions and traces of micaceous inclusions. Extremely small-diameter vacuoles are distributed frequently and uniformly.

**FABRIC 7**

**FABRIC 8** (Sample provenance: QT 6A IVc) Very compact ceramic body; irregular-looking fracture tending to flake. Background colour: 2.5 YR 6/8 (light

red). Dense presence of inclusions, of different colours and sizes, but all mostly rounded. The dimensions vary from medium to large (up to 8 mm), and the colours from yellowish white to red and brown.

**FABRIC 8**

## VI. Identification and Description of the Forms of Unglazed Ceramic

The shapes identified are 13: I. cup, II. basin, III. small olla, IV. olla, V. jar, VI. jug, VII. single-handled jug, VIII. amphora, IX. bottle, X. miniature vase, XI. lid/cover, XII. flacon. The reason for such a high number of forms is that they had to fulfill various functions. Generally speaking, ceramic objects perform three main “functional categories”: storage and/or transport of goods, food preparation and consumption. It was appropriate, then, for the craftsman to give the object different technical characteristics depending on the function it had to perform. For example, a jar used for the transport of goods had not only to be of considerable size but, at the same time, be resistant to impacts, as well as easy to handle during transport (hence the importance of the loops). Furthermore, it had to be made of little porous material and designed to be closed to preserve the goods stored. Each shape has been divided into specific types, according to the morphology of the body – in the case of the open shapes – and of the neck – in the case of the closed shapes. Each type has been assigned a Roman number. The types, in turn, were further divided into subtypes based on the examination of the morphology of the rim. These subtypes are indicated by lowercase letters. Below we will present the description of the thirteen forms accompanied by the subdivision into types and subtypes.

**I. CUP:** The cups are part of the open-shaped vessels. In this case, there are cups ranging from a diameter of 11 cm to a maximum of 25 cm. They can be divided into small, medium, and large cups, respectively as follows: from 11 to 15 cm, small; from 16 to 20 cm, medium; from 21 to 25 cm, large. Cups, however, are likely to have been used mainly as tableware, to consume liquid and solid foods. Five different types of this shape have been identified among the material.

The most frequent families regarding the cups are the “ribbed” and the “burnished” wares. The following examples for the first ones are selected from the most significant (Table I, Inv. 30, 15, 11), for the burnished (Table I ID 776; Table II, Inv. 118, 184, 120).

The family of the “painted”, on the contrary, is attested only in some cases, namely (Table III, Inv. 138, 21, 51). In these cases, the decoration follows geometric patterns made with red pigment. As far as the “ribbed” decoration is concerned, it has been noticed that it is not the same in all the cases: on some fragments it is rather evident, on others it is lighter. As for the “burnished”, some differences in the stroke depending on the fragments were found: the stroke is sometimes thinner, it is sometimes wider. The colour of the strokes can also vary, ranging from light reddish to brownish, according to the colour of the fragment. The “burnished” strokes of the cups are always horizontal. In some fragments, “ribbing” and “burnishing” occur

at the same time (Table IV Inv. 41, 42, 16, 174). In this case, there are two possibilities:

- a. the “ribbing” decoration is on the external surface and the “burnishing” on the internal one;
- b. the “burnishing” decoration is on the outside, superimposed on the ribbing.

As for the decoration (engraved, rouletted, with comb, molded, etc.), there are no such examples of decorated cups, except in one case (Table V, Inv. 49) in which the decoration is engraved with wavy horizontal lines, under the edge on the external surface and, in other cases in which the decoration is molded, under the lip (Table V, Inv. 191a, Inv. 191b, Inv. 174, Inv. 174b).

Most ribbed and burnished cups have very simple hems. As for the morphology of the bases of the cups, the records available are very scarce, in fact, there are only two whole profiles in which the bases are flat-shaped (Table VI, Inv. 199a, Inv. 199b; Inv. 184a, Inv. 184b; Inv. 109a, Inv. 109b).

The other examples of bases are not part of the whole profiles, thus making it very difficult to determine whether they belong to cups or other shapes. Given this paucity of records, it is impossible to say if there were other shapes for the bases or if the cups only had flat bases.

**II. BASIN:** The basin belongs to the category of open-shaped vessels too. It is usually distinguished from the cup both by the larger dimensions of its diameter and by the thickness of the wall and the rim, which is more complex and larger in size. From a macroscopic observation of these three elements, it is possible to distinguish them from the cups and, then, divide them according to the size of the diameter in small, medium, and large basins: items from 23 to 28 cm, small; items from 29 to 35 cm, medium; items from 36 to 46 cm, basins. The function of these containers is linked to the phase relating to the preparation and/or storage of food and, in some cases, to the table (those, perhaps, with a smaller diameter and with a “brim” edge, characterized by an almost edgy cup/pelvis). Furthermore, they could be used during washing operations and during various types of production activities (Cortese 2005, 325-338). As for the families, the most frequent characteristic in the basins is the presence of the ribs (Table VII, Inv. 113; Inv. 132; Inv. 4; Inv. 48; Inv. 17), even if in less quantity than the cups. The “burnished” ware is attested in a few cases, where it appears, unlike the cups, with vertical lines in the inner part of the wall (Table VIII Inv. 163a, Inv. 163b; 130). The painted ware, on the other hand, is not present. The examples of decoration are scarce, limited to Inv. 112, in which the container is molded (the molding is light and located under the rim), to Inv. 44, in which the decoration is engraved with a wavy horizontal line, and to some fragments in which the decoration is engraved with short, vertical, oblique lines on the upper part of the rim (Table IX: Inv. 112;

Inv. 44; ID 347). For the morphology of the bases of the basins, as well as for the bowls, we have very few records, in fact, the only whole profile is Inv. 163, in which the base is disc-shaped (Table X: Inv. 163a, Inv. 163c, Ø 57 cm). Given this paucity of records, it is impossible to say if there were other forms for the bases.

**III. SMALL OLLA:** This particular shape is generally considered to be intermediate between a closed shape and an open shape (between a cup and a jar). Among the materials under scrutiny, small olla is mostly characterized by particularly thin walls. In some cases, the diameter of the rim roughly coincides with the one of the body. In other cases, however, it is slightly shorter than the one on the body. Probably, these containers were used to contain liquids and semi-liquids with canteen functions. In the fragments with a smaller diameter, from 10 cm to 13 cm, there are decorations painted both on the edge and on the walls (Table XI: Inv. 173; ID 145, Inv. 28; Inv. 29). These vessels are painted with red-pigmented geometric patterns. It is in this particular form that we encountered the so-called *Dipinta Storica Sistana* (Sistanic Historical Painted), which we had already mentioned before.

**IV. OLLA:** The olla is a closed vessel, neckless or with a short neck and globular body. The diameter of the rim is smaller than the one of the belly, which is the maximum diameter. This shape, although morphologically similar to those of jars, has been distinguished because it has different functions, fabrics, and dimensions. In particular, this container was used for food making. On a first macroscopic observation, this shape already shows clear traces of burns, and it testifies to a reserved use for fire functions. Concerning the material, these vessels are characteristic of three fabrics: 6, 6.1, and 3. The jars are vessels characterized by fairly thin walls. The reduced thickness of the walls of the jars is perhaps also due to their supposed use: they were used to cook food, and too thick walls were of course not functional for the diffusion of heat. Moreover, thin walls, the absence of edges, hulls, and high porosity facilitated the lowering of thermal expansion (Mannoni and Giannichedda 1996, 159). As regards the material, there are very few claims of this particular form. We do not know if these pots were provided with handles or grips, as we do not have any examples at our disposal. The absolute lack of bases, probably due to the reduced thickness of the walls which facilitated the breaking and wearing of the container, does not allow us to give information about their morphology. This shape does not present any decorative motif (Table XII: Inv. 137a, Inv. 137b (drawing) Ø 35 cm; Inv. 183a, Inv. 183b (drawing), Ø 14 cm).

**V. JAR:** These containers are also present in small, medium, and large sizes and were used for storing solid

food and, probably, also liquid substances. For this form, the identification of the types has been carried out taking account of the morphology of the neck. The jars showed a wide morphological and typological variety, which can be found in the number of types reported: fourteen. It was not possible to say the same for the bases, because only one variant is present: flat base. It is possible to explain the presence of this type of base, as it is more suited to the function for which the jars are intended to be produced. An example of this variant can be found in the QT 3 trench, where there was also a discreet presence of decorated walls and a pourer which, together with the base, are almost certainly part of the same object (Table XIII: ID 102, ID 143). In that case, it should be a jar to hold liquids.

Indeed, it is interesting to note that the fabric assigned to these fragments is fabric 3, whose technological characteristics are very suitable for water-based ceramics. Obviously, this is not the only fabric that characterizes this shape, in fact, the highest percentage is given by fabrics 2 and 4 in the lowest percentage. These jars have, in general, a globular body and a flat base, although we cannot always confirm this, because in many cases there is not enough wall left, so it was not possible to have a body in the types of jars. This form is the one that presents decorative motifs of various kinds more than the others: incised, imprinted, excised, rouletted, and molded. The molded decoration is usually found on the shoulder of the vessel and can be more evident as in Inv. 124, or less clear as in Inv. 125, or there may be more light moldings starting from the shoulder and ending on the belly as in Inv. 106 (Table XIII: Inv. 124, Inv. 125; Inv.106).

The engraved decoration can be found on the upper part of the hem, where the incision is in short vertical oblique lines, and on the belly, where the incision is in wavy horizontal lines (Table XIV: ID 680, ID 580).

The excised decoration is less frequent; an example is the item where the excision is located on the upper part of the belly and is constituted by a horizontal band formed by a sort of small triangles (Table XV: Inv.162).

One of the decorative motifs of the embossed decoration can be seen in an item, where there is a horizontal band formed by a sort of small squares arranged in a triangle (Table XV: Inv. 157).

The rouletted decoration superimposed on the moldings on the shoulder has also been found, examples in which several decorative styles are combined: rouletted, engraved, and molded. In this case, we have the rouletted decoration superimposed on the moldings on the shoulder and the incision with horizontal wavy lines on the belly (Table XVI: ID 677, ID 657).

As far as families are concerned, we can give some examples that apply to everyone: the "Ribbing" (Table

XVI: Inv. 3; Inv. 151), and the "Burnishing" (Table XVII: Inv. 157 (drawing), Ø 13 cm).

We have noticed that burnishing in jars is usually found on the outside of the vessel and goes in the horizontal direction. In this form, we did not find any painted objects (Table XVII: Inv. 162a, Inv. 162b (drawing) Ø 11 cm).

**VI. JUGS:** The jug is a fairly complex shape, and it is difficult to identify a type it, especially when, as in our case, there are no objects or entire profiles available. The jugs can usually be divided according to the shape of the body, which can be ovoid, pear-shaped, and globular; the ovoid jugs do not have any type of swelling on the body; the pear-shaped jugs, on the other hand, show a considerable swelling in correspondence of the shoulder that tapers more and more to the base; the globular jug has a bulge that occupies almost the entire body, from the shoulder to the base. Since it was not possible to divide the jugs on the basis of the shape of the body, because of the absence of the entire objects available, as already said, the types have been divided only according to the morphology of the neck. Five different types have been highlighted. The base of the jugs, regardless of the shape of the body and the one of the neck and rim, can be flat or disc-shaped. The jugs were mainly intended to contain liquids, both as storage vessels, in the case of large objects, and as a canteen, in the case of medium and small vessels. As regards the families in this form, there are "burnished" and "ribbed" objects, while painted objects miss. Examples of "burnishing" can be seen in the fragments Inv. 169, 189, and 149, where the "burnishing" is found on the outside of the fragment and is made of horizontal lines (Table XVIII: Inv. 169a, Inv. 169b; Inv.194a, Inv. 194b (drawing)), where the "burnishing" is made of oblique vertical lines that join together (Table XVIII: Inv. 149, Ø 8 cm). Examples of ribbing, on the other hand, can be highlighted (Table XVIII: Inv. 108a, Ø. 10 cm, Inv. 108b (drawing); Inv. 168).

**VII. ONE HANDLE JUG:** Unfortunately, this form is little attested in the material under scrutiny. In fact, it was possible to extrapolate a few significant fragments to be merged into the typology. Two types were highlighted: a) the single-handled jugs which, as well as the jugs, were mainly meant to contain liquids in quality of storage vessels, in the case of large objects, and of canteen, in the case of medium and small vessels. They appear to be canteen vessels. As for the morphology of the lugs of the single-handled jugs, it was observed that the lugs have a vertical loop that engages immediately under the rim. Most of the loops are ribbon, and their width ranges from 2 to 4 cm (Table XIX: ID 423, ID 439, ID 538, ID 546, ID 635, ID 655) another type of handle attested in the material is a vertical twisted loop of discrete dimensions that was also used as a sample of fabric 7 (Table XIX: ID 368).

In another item, it was possible to hypothesize that the loop was thinned and belonged to the vertical type surmounting (Table XIX: Inv. 176, Ø 6 cm), while in Inv. 143 it was only assumed that it was a vertical loop. The families are not present in this form but, given the few specimens at disposal, it was not possible to exclude their presence a priori. In fact, a fragment presents a loop, whose wall is burnished. Even the decorations are scarcely attested: Inv. 143 has a molding on the neck just where the attachment of the handle is; Inv. 176 features a broad-pointed incision made with horizontal lines on the neck (Table XIX: Inv. 143a, Inv. 143b, Ø 5 cm).

**VIII. AMPHORA:** The amphora is a container with two handles used for transporting or storing liquid or semi-liquid foodstuff. The types are only two, but not available unlike the other shapes, so the entire objects we have at disposal have kept the morphology of the neck. In Inv. 135, a discreet concavity in the internal part under the rim was noticed and it allows to hypothesize that the amphora was accompanied by a lid, which unfortunately has no comparison with the available material. The handles of Inv. 1035 are placed under the hem in the initial part of the neck, and it is only possible to assume that they were vertical. About the Inv. 197, on the other hand, it is possible to say much more about the morphology of the loops. They start immediately below the hem, ending on the upper part of the belly; they are slightly overlapping vertical ribbon handles. An element observed in Inv. 197 is the blackish colour of the clay body. This can be explained through the cooking procedure for the ceramic vessels: at the beginning, when the temperature still does not exceed 200° C, the heat eliminates the residual mixing water. In order to avoid the breaking of the walls of the product, the furnace must be heated gradually. Once the 300° C is exceeded, the combustion of the organic matter contained in the product begins. In this phase, if the air in the furnace is poor in oxygen, the clay takes on a blackish colour visible in the fracture. In order to avoid this phenomenon, the potter must use a furnace with a good draft. This is to say that the container (Inv. 197) has this blackish colour due to a cooking error. The families and decorations are not present in this form, except for Inv. 197, in which broad-pointed incisions made with the horizontal parallel lines are visible on the belly (Table XX: Inv. 135a, 135b (drawing) Ø 14; Inv. 197a, 197b, Ø 3,50)

**IX. BOTTLE:** In the material at disposal, unfortunately, there is a single example of a bottle: a long and thin neck with a rim diameter of 4 cm has broad-pointed incisions immediately below the neck, made with two parallel horizontal lines. It is not possible to define the shape of the belly, but it is to imagine that it was ovoid with a flat base. This container is used to

hold liquids and as a canteen container (Table XXI: Inv. 185a, Inv. 185b, Ø 4 cm).

**X. MINIATURISTIC VASE:** This shape includes small vases, with rim diameters often less than 10 cm, and characterized by the use of thin walls. Probably, these small containers were used to contain liquids and semi-liquids, but we do not know for what specific use they were meant. The shape has been divided into three types on the basis of the morphology of the neck, whose containers grouped with the first type resemble small jugs; the vessel in the second type resembles a small neckless jar; the vessel from the third type resembles a small jar with a neck. Unfortunately, it is not possible to be sure of what was the morphology of the base of these vessels, also because an entire object is missing. It could have been convex (although this hypothesis is unlikely), flat (raised), ring-shaped, or discoid. The families/wares of the burnished and the painted ones are not present in this form, but the family of the very light ribs is present. As for the decorations, only the molded decoration is attested, and it can be seen where the molding is located just below the neck (Table XXII: Inv. 179a, Inv. 179b (drawing), diam. 0.4; Inv. 156a, Inv. 156b).

**XI. LID/COVER:** Lids have not a shape resembling them and are not part of a specific “functional category”. They are, to all intents and purposes, an auxiliary “element” per se, but must necessarily be linked to another container. These objects, in fact, were used to close various types of containers, from jars to small jugs, from larger ones in which liquids were stored to large jars or amphorae used for the transport of goods. We have a very restricted morphology of these artifacts since only two specimens have survived in the available material, one of which has a hemispherical shape (Inv. 158 type I) and one has a truncated cone shape (Inv. 186 type II). The first is equipped with a central socket, probably hemispherical in shape, and has a small ring base (5 cm). The second is very low, in fact, it has a height of about 2 cm, but it has a base, also ring-shaped, with a larger diameter (13 cm) than the first one. We do not know if it was accompanied by a socket or not, as the fragment is too small. Inv. 1086 has an engraved and imprinted decoration. Furthermore, as in Inv. 197 (amphora), the clay is blackish in colour, especially when fractured, and this is the mark, as we have already stated, of a cooking mistake (Table XXIII: Inv.158a, Inv.158b, Inv.158c, Ø Base 5; Inv. 186a, Inv. 186b, Ø Base 13).

**XII. FLACON:** There is only a single specimen of this particular shape. Probably it contained liquids, but its use is unknown. This shape called flacon has a flattened biconical body with a flat base of 4 cm and a

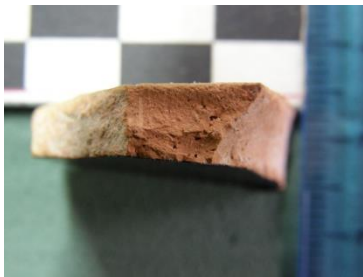
rounded edge. The mouth opening is very small, in fact, the diameter is of only 2 cm (Table XXIV: Inv. 198a, 198b, Ø (base) 4 cm, (rim) 2 cm).

### VII. Macroscopic Analysis of the Fabrics of Glazed Ceramics

The samples of the fabrics of the glazed ceramic were selected with the same criteria as the fabrics of the unglazed ones. In this case, however, the treatment of the surface or the colour was not included, as it is covered with a showcase, and it is part of a completely different technology and function. Therefore, the

surface was not included in the fabrics, but within the wares instead. The descriptions of the seven glazed ceramic samples are presented below:

**FABRIC 10** (Provenance of the sample: QT-1B I) similar to Fabric 2. Rather compact ceramic body; fracture with a slightly grainy appearance. Base colour 5 YR 7/8 (reddish yellow). Extremely small-size inclusions, the yellowish-white ones are more evident; some are rounded, others oblong. There are also very rare inclusions, equally small, dark in colour, and others of micaceous nature. There are vacuoles of different sizes: very small and small.

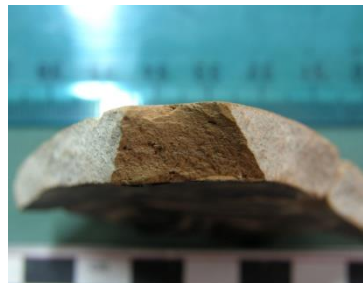


**FABRIC 10**



**FABRIC 10.1** (Provenance of the sample: QT-1 A / B I) Rather compact ceramic body; a rather grainy fracture. Base colour 5 YR 7/6 (reddish yellow). Present

inclusions and vacuoles of colour, shape, and size equal to those of fabric 10. In fact, the main difference between the two fabrics lies in the greater graininess of 10.1.



**FABRIC 10.1**



**FABRIC 10.2** (Sample provenance: QT-1 B I) (similar to fabric 2.2) Rather compact ceramic body; rather grainy-looking fracture. Base colour 5 YR 7/6 (reddish yellow). Clear prevalence of white-yellowish

inclusions with a rounded shape and small dimensions that completely cover the ceramic body. There are rare inclusions of micaceous nature. On macroscopic analysis, there are few visible vacuoles.

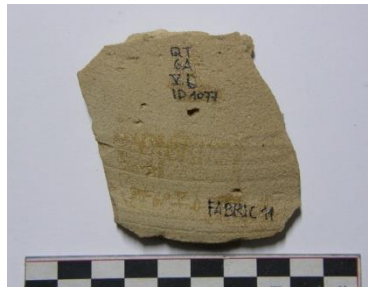


**FABRIC 10.2**



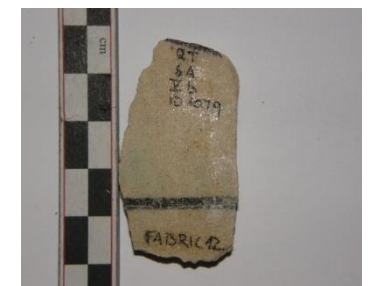
**FABRIC 11** (Provenance of the sample: QT-6 A V b) Not very compact and slightly porous ceramic body; fracture with a sandy appearance. Background colour 5

YR 8/4 (pink). On a macroscopic level, only a few dark-coloured and very small inclusions are visible. The vacuoles are distributed with very high frequency; they are of various sizes, from very small up to 2-3 mm.



**FABRIC 11**

**FABRIC 12** (Provenance of the sample: QT-6 A V b) A so-called fritware. Siliceous mixture. Background colour 10 YR 8/1 (white) with epigraphic painted decoration as well.



**FABRIC 12**

**FABRIC 13** (Provenance of the sample: QT-2 B II) Not very compact ceramic body, characterized by a notable lightness; porous fracture. Base colour 10 YR

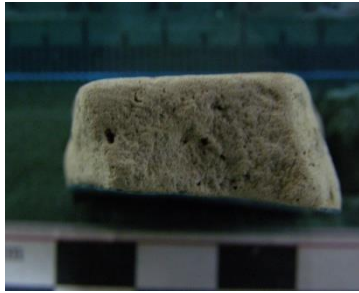
8/4 (very light brown). The inclusions, mostly dark and small, are not very noticeable. Large amounts of small vacuoles are distributed evenly over the entire ceramic body.



**FABRIC 13**

**FABRIC 13.1** (Provenance of the sample: QT-3 bis II) Compact ceramic body; porous fracture. Base colour 10 YR 8/3 (very light brown). There are very small light brown inclusions, distributed unevenly.

Instead, a large amount of very small vacuoles is distributed evenly within the ceramic body; there are also small and medium-sized vacuoles with a rounded shape, unevenly distributed in smaller quantities.

**FABRIC 13.1**

### VIII. Definitions of the Wares identified within Glazed Ceramics

Nine main wares have been identified within the glazed ceramic: I. slip painted, II. under-glazed, III. sgraffiato, IV. sgraffiato and splashed, V. splashed, VI. monochrome green, VII. monochrome turquoise, VIII. monochrome black, IX. monochrome dark brown.

**I. SLIP-PAINTED:** it was first produced in the Muslim world starting in the 10th century. The slip usually consists of semi-liquid clay and is often used to coat the entire surface of a vase in order to create a background for further decoration. Floral, geometric, animal, and figurative motifs were often engraved on the slip before the vase was covered with a transparent or coloured display case. Pottery with black, white, or red slip dates back to around the 10th-11th century and developed in the Samanid territories of eastern Iran and central Asia.

**II. UNDERGLAZED PAINTED:** it was widespread in Syria and Egypt from the 9th to 10th century, it consists of a painted decoration under a transparent display case. The colours used for this decoration are limited to 3: cobalt blue, turquoise and black; these colours were applied either all together or often only in two shades.

**III. GRAFFITA:** engraved and under glazing, it is from an ancient pre-Islamic tradition and are undoubtedly inspired by metallics. The technique consisted in engraving the engobe that covered the ceramic body with a burin or other sharp instrument until the underlying colour of the paste emerged. After this operation, the object was covered with monochrome or polychrome glazing. The decorative repertoire included abstract and figurative motifs. Spread across a large part of the Islamic world (Central Asia, Iran, Mesopotamia, Anatolia), it appeared for the first time in Persia in the 10th century. Among the different types of scratched crockery, the so-called "Amul" and "Aghkand" must be mentioned, named after the Persian towns.

**IV. GRAFFITA-SPLASHED:** they consist of a combination of the two decorative elements listed above. Although this ware is often labeled sgraffiato

(incised) in the literature, only a small proportion of the splashed pottery has incised ornament, generally consisting of simple, often hastily executed leaf scrolls and half-palmettes. Splashed and incised wares have been found over Islamic western Asia, from Syria to Khorasan (Lane 1947, 25-27); in Egypt; and in the former Byzantine empire (Allan 1974, 18-20, pl. 3).

**V. SPLASHED:** these are drips of coloured showcase, usually green or brown, which develop on a single surface of the product or on both. One of the few datable vessels of this type is from Susa (Allotte de la Fuye, pp. 6-17)

**VI. MONOCHROME GREEN:** this type of coating is superimposed on the engobe (if present) before the second firing and, depending on the pigments used, it can be (cfr. in particular Samarra, Susa, Siraf, and other sites (Sarre 1925, pl. VI; Lane 1947, pl. 3; Whitehouse 1979, pl. IIIa):

a. "lead" type, with lead oxide flow, consisting of a thin and waterproof layer that adheres completely to the product, hiding surface irregularities, smoothing the edges, and making it bright. Much less alterable than alkaline glazing, it melts at a lower temperature and easily "runs". The lead glazing can be transparent and colourless or coloured with metal oxides. Adopted by Greek and Roman potters in a large area from the 3rd century BCE onwards, it was then used in the Middle Ages in Islamic and Byzantine production, through which, once again, it entered the European Mediterranean where it had disappeared after the fall of the Western Roman Empire;

b. "lead-tin" or enamel type. This term is used to indicate lead glazing containing suspended tin oxide particles (generally from 6 to 15%), with the function of making the display case perfectly white and opaque. It is a glassy, impermeable mantle, which covers the ceramic body, hiding its colour and surface imperfections and softening the contours. It constitutes a perfect background for any decoration (graffiti, splashed) and, compared to the thin and transparent showcase, it is characterized by perfect opacity and body. In this case too, the mixture is applied by partial or total immersion (Whitehouse 1979, 51-56).

Among these nine wares, six are the examples concretely and extensively documented:

I. SLIP PAINTED (Table XXV: Inv. 67; Inv. 81; Inv. 69a, Inv. 69b; Inv. 72a, Inv. 72b)

II. UNDERGLAZED (Table XXVI: Inv. 66a, Inv. 66b; Inv. 64)

III. GRAFFITA (Table XXVII: Inv. 82a, Inv. 82b; Inv. 65; Inv. 71a, Inv. 71b; Inv. 83)

IV. GRAFFITA AND SPLASHED (Table XXVIII: Inv. 70a, Inv. 70b; Inv. 68a, Inv. 68b; Inv. 84a, Inv. 84b)

VII. MONOCHROME TURQUOISE (Table XXIX: Inv. 76a, Inv. 76b)

VIII. MONOCHROME BLACK (Table XXIX: Inv. 75)

### IX. Conclusion

The very small size of Qal'a-ye Tepe and the curvilinear shape of its walls clearly confirm that the site was originally a small, fortified camp, even if, during the excavations, no element to be traced back to military-type functions came to light. The subject of this article, with particular reference to the ceramic and cartaceous data at our disposal, could confirm the hypotheses of prof. Scerrato regarding the chronology of the site.

According to Scerrato, Qal'a-ye Tepe shares the period of settling with other sites, such as Tepe Shahristan, Qal'a-ye Sam (Genito 2021, 1-19) and Kuh-e Khwagha: the three sites were inhabited in the Hellenistic, Parthian, Sasanian (Scerrato 1970, 126) and Islamic periods. This is also attested in Qal'a-ye Tepe, although there is an incomplete sequence that allows one only to state that the settlement was certainly occupied in the proto-Islamic period, while there is no news for the subsequent period.

The presence of painted pottery in the site (especially in QT 11, to a lesser extent in the QT 4), but also in Kuh-e Khwagha (site of secure Parthian origin) and in Qal'a-ye Sam, allows one to confirm the relative proximity in time of these sites, as in a certainly older site, such as Dāhāne-ye Ghōlaman, where no pottery with painted decoration has been found. The painted pottery of Qal'a-ye Tepe, therefore, can be evaluated in reference to the one of Qal'a-ye Sam II, in which the red wine (absolutely majority), black and ochre colours, on a cream or beige background, prevail and are similar to those used in the material we are analyzing. As for the decorative motifs, vegetal and geometric ones prevail. In turn, these characteristics of Qal'a-ye Sam II connect it to the palace of Kuh-e Khwagha VI (the VI is the earliest level). The uniformity is such that allows the painted pottery of these three sites to be grouped under the unique label of Dipinta Storica Sistana (Sistanic Historical Painted), a cultural trait dating back to the 3rd-2nd century BCE which, chronologically, has no connection with the Achaemenid period (Haerinck 1983, 220). This ceramic is very similar to the common

undecorated one, also as regards the shapes. The only exception is constituted precisely by Qal'a-ye Tepe, where the painted decoration mainly characterizes the form defined as "small olla" in this paper and present in QT 11 II b, Trench E -4.70 and, to a lesser extent, in QT 4 I-II layer. We do not know if this phenomenon is due to the intentionality of the ceramist or if it is just accidental. The decoration was done before cooking. In general, it is monochromatic, but there is no trace of two-colour samples. The surface involved is generally the external one, especially the upper half (Haerinck 1983, 218). The decorative motifs found are the following:

- vertical and horizontal bands;
- horizontal parallel lines;
- triangles;
- points;
- wavy lines;
- crosses with pointed arms;
- stylized vegetables.

It should be noted, however, that in the case of Kuh-e Khwagha, the decorative motifs are much simpler, limited to continuous lines or herringbone (Gullini 1964, 239). Also, for what concerns Qal'a-ye Tepe, there are only some of these motifs, that are the bands, lines, and triangles; perhaps this lack of variety is due to the scarce quantity of painted fragments at our disposal, rather than to an inventive defect of the potters of Qal'a-ye Tepe.

The date we have set for the Dipinta Storica Sistana (Sistanic Historical Painted) is largely based on Qal'a-ye Sam, a site which, due to the absence of glazed pottery, certainly predates the advent of Islam. If this dating is correct, it follows that Qal'a-ye Tepe was inhabited in the Parthian era (225-250 BCE), which was a period of general artistic flourishing. Given that the Parthian Empire controlled a territory ranging from the Euphrates River to Bactriana, it should not be surprising that, as it will be shown later, the same characteristics of the Qal'a-ye Tepe pottery can also be found in rather distant territories. However, it is interesting to point out here that when the Parthian dynasty collapsed due to the new Sasanian rulers (225 CE), there was no such change in material culture, including pottery, that might have been expected. Incidentally, we point out that Kuh-e Khwagha I dates back to the Sasanian era (Scerrato 1970, 212) and Qal'a-ye Sam was also still busy at this time, so it is reasonable to expect that this also applies to Qal'a-ye Tepe.

Another factor that undoubtedly unites our site with that of Kuh-e Khwagha is the ribbed pottery, so abundant that it was found in Qal'a-ye Tepe already in the first survey carried out in the 1920s. The typical rib

of Sistan (of all the Iranian provinces indeed) is part of the common pottery. The walls are 5 to 10 mm thick. The fabric is compact and tempered with more or less finely crushed gravel or crushed lime. The colour ranges from buff (7.5 YR 8/4 and 7.5 7/4) or pink (2.5 YR 6/4) to brick red (10 R 5/8). A cream or buff but also reddish engobe is often observed. In general, the outside has the same colour as the dough. The ribs are incised, parallel, and pronounced. Ribbed pottery seems to characterize the shape of the jars and should be a relatively recent invention because it is absent in the Achaemenid levels and appears only from the 3rd-2nd century BCE (Parthian era). However, it was still in use in the Sasanian period and probably at the beginning of the Islamic era. From a spatial point of view, it also spread to western Pakistan and southwestern Afghanistan (Haerincx 1983, 17).

Dipinta Storica Sistana (Sistanic Historical Painted) and "ribbed" ceramics are, nevertheless, just two of the ceramic productions that connect Qal'a-ye Tepe with the sites we are talking about and, in a broader horizon, with the rest of Sistan. Let's see, in Haerincx's treatment (1983, 213-221), what these aspects consist in:

Common ceramic: it is characterized by a compact and regular fabric corresponding to our fabric 5, degreased by means of gravel or crushed lime in variable quantities. The vases are often beige or suede tending to pink. However, light gray vases were also found. The internal surface has the same colour as the internal one and both have the same colour of the dough. A whitish or yellowish engobe is often present (YR 8/3-8/4). The examples with engraved decoration document parallel lines or a wavy line;

Cup: in the great variety of forms attested it is the most common, especially the flared one with a straight lip. In fact, many cups with a slightly keeled profile and concave lip have also been found. The latter appear in Iran at the beginning of the Iron Age but are also well attested to the most interesting era, namely the Parthian one. The morphology of these cups is quite elegant because Parthian ceramics had preserved the memory of Roman artistic production (Lane 1947, 9). The cups with a slightly carinated profile and flat rim are also well documented (for example in Dāhāne-ye Ghōlaman), but they are from the Achaemenid period. Finally, we point out the cups with straight lips, which have been defined as "small olla" here. There are also very large plates, of the same type widespread throughout the Near East which, as regards the geographical area under our responsibility, must date back to the 3rd-1st century BCE;

Comb decoration: it mainly concerns common pottery, and it is mainly attested in Kuh-i Khwagha on all levels;

Dark red ceramic with burnishing stripes: it generally has a fabric purified with mineral degreasers. The colour

is orange, brick red, gray, and brown and it is always cooked well. The outside is free from engobe and has the same colour as the dough or, at times, it is a little darker. The burnishing stripes are parallel and horizontal, spaced regularly according to the size of the vase.

Here a particularity of the coarse pottery of Qal'a-ye Tepe is pointed out (fabrics 6 and 8): its high content of gravel visible to the naked eye allows to hypothesize a Sasanian dating for the levels that contain it, since in the Parthian era or later, in the Abbasid period, coarse pottery was of a slightly higher quality (Northedge 1985, 121). Taking into account all the characteristics examined so far, the similarity of the ceramic material of Qal'a-ye Tepe is striking not only with the sites mentioned so far but also with that of Tureng Tepe, in the Gurgan plain, whose occupation lasted from the 1st CE in the 8th century (Gardin 1987), thus coinciding, at least for part of the levels (Tepe Tureng VC and VD), with the most important period of occupation of Qal'a-ye Tepe, the Parthian one. For the examination of the material owned, we rely on Lecomte (1987, 93-119). The first similarity between Qal'a-ye Tepe and Tureng Tepe (but also Qal'a-ye Sam) is that the settlement is intended for military use. In the two levels under scrutiny most from a chronological point of view, common pottery was found in large quantities, and a smaller amount of coarse pottery was found too. The prevailing colour is red, but there is also gray and beige common ceramic. The colour of the coarse pottery is brown or gray, while the coarse pottery samples in Qal'a-ye Tepe mainly show a red colour. But, beyond the hue, which can be due to various factors, what is most striking is the extreme resemblance in the forms attested to Tureng Tepe and those identified in Qal'a-ye Tepe, and even more of the details, like hems. As an example, it should be pointed out that a closed form without neck and lip is attested in Tureng Tepe, and it is also found in Qal'a-ye Tepe: this is the type I jar attested in QT 4 to III and in QT 5 A III a. We also report the type II jar found in the QT 3 bis trench.

Furthermore, burnishing was also common in Tureng Tepe. Unfortunately, our comparisons are not truly exhaustive, due to the fact that any complete Qal'a-ye Tepe profiles is present, so it is not possible to claim whether even here, as in Tureng Tepe, the bases of the vases were mostly flat. But what is really interesting is that Lecomte places the ceramics of Tureng Tepe in relation to the one of Central Asia and not to that of Western Iran (Lecomte 1987), proposing very precise comparisons, especially with Chorasmia (Uzbekistan), from the same period as Tureng Tepe VC and VD.

For the general study of the pottery of the Parthian and Sasanian time in Iran, there are not many archaeometric analyses, and here it is due to mention one of the most important ones made by different

authors recently (Amiri, Kouhpar, Neyestani, Nadushan 2013). The contribution sets to give a better picture of the pottery assemblages from the Sasanian-Islamic sites (Bishapur, Sar Mashhad, the city of Gur, Darabgird, Istakhr) and the historical city of Siraf as a main port of the Sasanian era through macroscopic and laboratory analyses of the available material.

For most time study of all Islamic pottery of the first four hundred years has been dominated by the finds from Samarra in Mesopotamia, which had been the capital of the Abbasid caliphate from 221/836, when it was founded by al-Mo'taşem, until 269/882, when it was abandoned by al-Mo'tamed. In 1911-13 the German expedition led by Ernst Herzfeld and Friedrich Sarre conducted excavations at the site, where large amounts of pottery were found. Sarre published a monograph on this pottery (1925), which included, in addition to a wide range of Islamic wares, some Chinese and supposedly Chinese material: white porcelains, greenware, and wares striped or mottled with green and brown. Originally almost all were thought to date from the brief period during which the city was the capital. As a result, scholars concluded that Islamic potters had developed a new range of table wares in the 3rd/9th century as a direct response to the introduction of Chinese ceramics into western Asia (Lane 1947, 10-16). In recent decades, however, excavations of similar wares at Susa in Kuzestan and Siraf on the Persian Gulf, as well as at a number of sites in Khorasan, Afghanistan, and Transoxania, have forced a reconsideration of the accepted chronological framework based on the finds from Samarra.

As far as we know, monochrome glazed pottery was not produced in the Iranian plateau during the Sasanian period, and the glazed vases present at this time had been, most probably, imported from Mesopotamia and the Persian Gulf (Wilkinson 1973, XLII). The alkaline blue glaze ware, one of the most famous ceramic production of the Abbasid period, and especially the so-called "Sasanian-Islamic" jars, widely exported, was found on most of the coastal sites of the 8-10th centuries all around the Indian Ocean and even in the Far East as far as China and Japan. This ware belongs to a long tradition of alkaline glazed wares produced in southern Iraq (Mason, Keall 1991, 57-61). However, although that production is one of the main type-fossils of the early Islamic period, the real starting and ending time of the manufacture is not precisely dated. Another type-fossil of the Abbasid period, the opaque white glazed bowls were equally produced at Basra and other centers in Iraq (Mason, Keall 1991, 61). White glaze ware is much better documented than the blue one, and the periods of the introduction of the different classes - plain or decorated in cobalt, luster, or splashes of glaze - seem now rather precisely dated, from around 800 for the earliest production, with cobalt decoration, to

around 900 for the latest, with monochrome luster (Northedge 1996, 231-235). At Susa, the type is present until the second half of the 9th c. (Kervran 1977, 152-153); at Siraf it is well represented in period 3 (9-10th c.) but also in period 4 (11-13th); at Kush, white glazed pieces were found and they appear in phase IV (9-11th c.) and are present in all levels with many residual pieces found in the late reoccupation layers of phase VIII (late 16th-early 17thc.).

Sgraffiatos pieces with a rather fine red fabric and a decoration incised through a white slip under a lead glaze, monochrome or mottled in various tints of green, yellow, and brown have also been found. Contrary to early sgraffiatos, with a pale fabric that was produced in the 10th c. in Mesopotamia, red ware was most probably made in Iranian kilns (Stein 1932, 90-91 et pl. IV; Kennet 2004, 34). It is well-represented on all sites in the eastern Islamic world dated ca 11-13th c., and several varieties are recorded according to the style of the decoration which can be simply incised, incised on a hatched background or *champlevé*, or according to the glaze, either monochrome or mottled. The dating of monochrome sgraffiatos is still under debate. They are often considered as a later evolution of the ware, dating to around the end of the 11th c. onwards, at Lashkari Bazar and Kush for example, but they seem to appear much earlier on other sites (Kennet 2004, 36 and 75-76).

The ceramic production found in eastern Iran from late Sasanian time and early Islamic is still less documented and published and is very less related to the rest of the available documentation (Kennet 2004). Early Islamic pottery (Whitehouse 1991) has been found in Khuzestan and the Persian Gulf, on one hand, and the Persian plateau, including Khorasan, on the other. A general survey of this class of different production has been generally described (Crowe 1992; Curatola, Scarcia, 1990; Fehérvári 2000; Fontana 2001; Soustiel 1985; Boucharlat, Haenrick 1992).

The cognitive panorama of ceramic Islamic production in recent years is more widely documented than before, above all thanks to the works of Axelle Rougeulle (2004; 2005a; 2007a; 2007b; 2008; 2018), who with her excavations and studies especially in Yemen, Oman, has expanded its productive and chronological themes from Iran, Persian Gulf and the Red Sea, etc. with new data coming from more reliable archaeological contexts. Especially for the "sgraffiato" production (2005b) she strongly underlines the concrete possibility of locating its origin in south-eastern Iran, starting from Sistan and Baluchistan as already noticed (Stein 1937).

The exponential economic growth in the first centuries of Islam of sites such as Basra in Iraq, Siraf in Iran, and Sohar in Oman is the main socio-economic factor of the time, and many sources talk about the opulence of these markets and the importance of their

commercial activities that stretched from China to Africa.

In the Red Sea, Aydhab, the port of Egypt in the 10th-13th centuries, is very poorly known besides all this shore, except for the later site of Qusayr, but at least ten sites on the Arabian coast yielded abundant Abbasid material, such as Athar, a very important to the Yemeni dynasty of the Zaydites, and Ayla in Jordan; many interior establishments also delivered this type of equipment. Merchant activities were, therefore, important in this area and extended to the Gulf of Aqaba. On the African coast, Abbasid imports are present in many sites in Kenya and of the Comoros whatever their size, simple camps or trading towns: Manda, in the Lamu archipelago, the levels of phase I (c. 9th-10th centuries) yielded sherds with blue glaze and with white glaze, which together represent high percentage of the ceramics imported at this time; and at Shanga, not far from Manda, fragments of these two types were discovered in contemporary layers.

The study of the ceramic routes in the western Indian Ocean in the 9th-12th centuries allows, thus, to highlight the existence of two distinct phases. Until the end of the 10th century, ceramics seem to have been mainly transported by ships from the Persian Gulf which dominated trade throughout the region and including the Red Sea; the number of them had to pass through a port before reaching their final destination. Next, this trade appears to be shared between the Red Sea and Persian Gulf networks. Their importance relative is poorly known but the Red Sea may have been closed to Iranian merchants who then concentrated their activities in the Indian Ocean itself; the sgraffiato shows that this particular type was probably produced in southern Iran, perhaps in Tiz where ovens would have been highlighted. While Aden is the transit port for trade to Fatimid Egypt, Sharma in Oman, seems to play the role of redistribution center for the ceramics disseminated by the Iranian networks. The sgraffiatos found on the site were perhaps primarily intended for the African market, but the final destination of Eastern imports, particularly Chinese is less clear. Most of these pieces were to return to the Persian Gulf; archaeological data on Qays and Minab/Old Hormuz, the two great economic centers of the time, are unfortunately very succinct, but Sohar delivered material identical to that of Sharma (both in Oman), notably stoneware with painted decoration from the Xicun kilns and pieces with brown-black glaze. Perhaps part of the production was redirected to Aden and then the Red Sea and particularly

Fostat, contacts which could be evidenced by the presence of imports from Tihama (Yemen) to Sharma.

Considering this state of Art and waiting for the results of the archaeometric analyses on the fragments found in Qal'a-ye Tepe, the Islamic production found there does not seem to be distinguished in any way from contemporary Islamic productions, both Sistanic, such as Kuh-i Khwagha, and from other places in the Islamized world. Furthermore, the dough defined as "fritware" (our fabric 12) is certainly from the mid-Islamic period, around the 13th century, when, in imitation of Chinese porcelain, it was introduced (Northedge 1985, 124). A proof comes from the shapes: in the Middle Islamic period (Lane 1957), preference was given to glazed cups with straight walls or, at times, carinated, also present in our material in which the fragments of walls prevail, telling us very little about the shapes of the entire vases (Northedge - Falkner 1987, 164). The presence of engraved ceramic in trench 4 B III, in the QT 3 bis II<sup>nd</sup> and III<sup>rd</sup> layer trench (but also in other locations not very useful for stratigraphy, such as QT S, QT '64, and QT without tag), however, would lead to backdate the layers, in which it is present, in the post-Abbasid era, therefore, after the 9th century CE. On the other hand, the pottery of the previous period, the Umayyad one, is difficult to identify in all the Islamic sites, and this is valid also in Qal'a-ye Tepe; an old reason for that was that the Umayyads did not consider pottery as an artistic form, and they had relegated it to perform the humblest functions (Lane 1947, 7). Numerically, alkaline turquoise glazing prevails in our fragments, obtained with potassium oxide, the manufacturing center of which was, most probably, in southern Iraq, near Basra, and whose main feature is its poor sealing (Kennet 2002, 155). It was preferably applied to the cups, but a basin is present too from QT 2. Since this type of glazing did not come into circulation before the 8th century CE, we have a further element confirming the dating we claim as more probable. Unfortunately, the ceramic objects at disposal are in such a fragmented condition as not to allow evaluations on the decorative motifs, but in general, it can be said that floral and symmetrical patterns predominate within the material examined. This latter motif, purely geometric, was very dear to Islamic ceramics, who usually preferred formal and basically abstract artistic models (Lane 1957, 5). We do hope, however, that the completion of the resumed work on the data about Qal'a-ye Tepe, could give more contribution to the historical reconstruction of the site.

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Table I



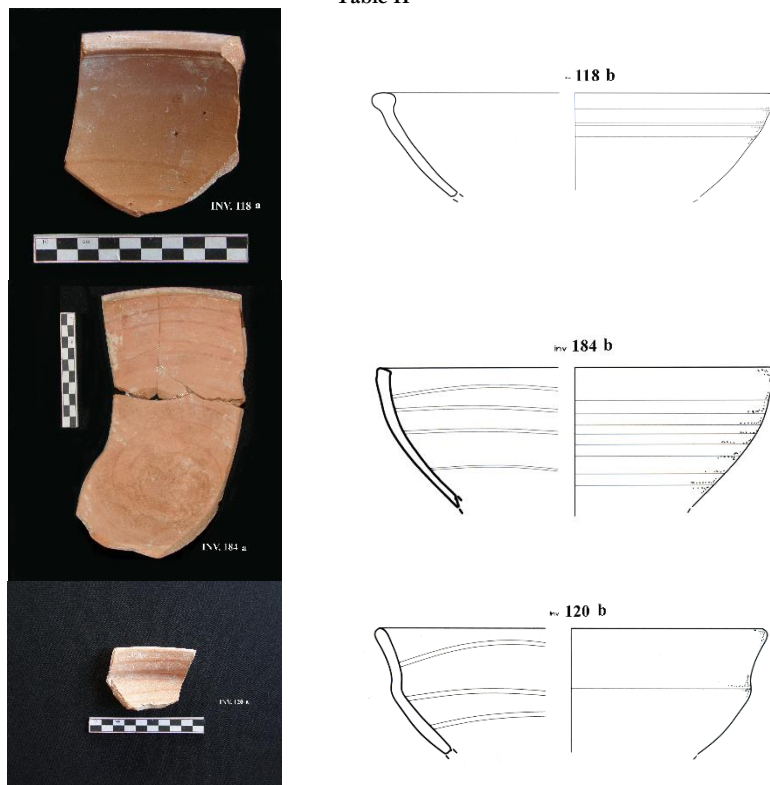
I, Cups, Ribbed Decoration: QT II b, Inv. 30, ID 259 (left); QT II b, Inv. 15, ID 260 (right).



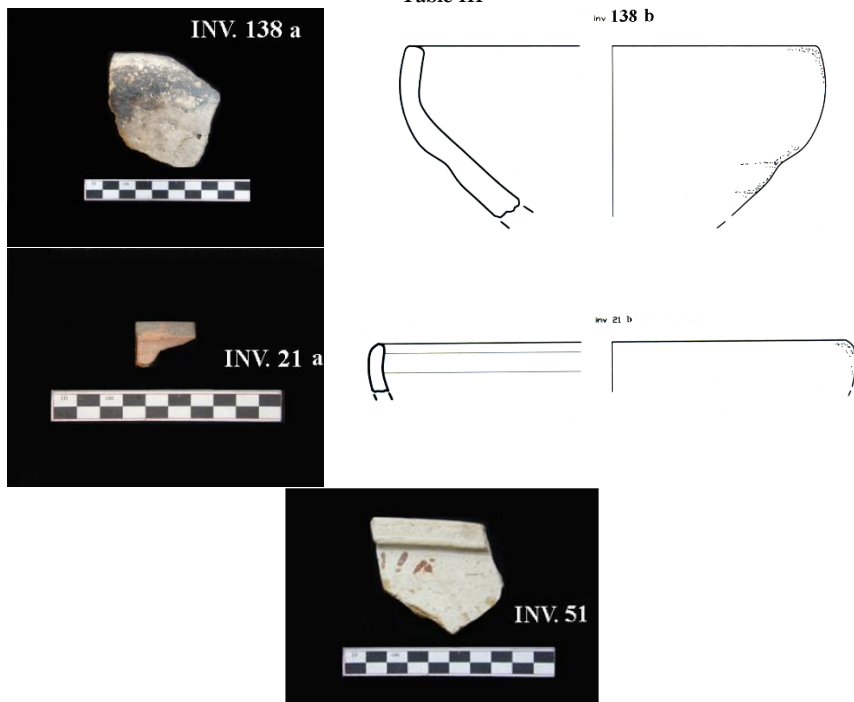
I, Cups, Ribbed Decoration: QT II b, Inv. 11, ID 211.

I, Cups, Burnished Decoration: ID 776.

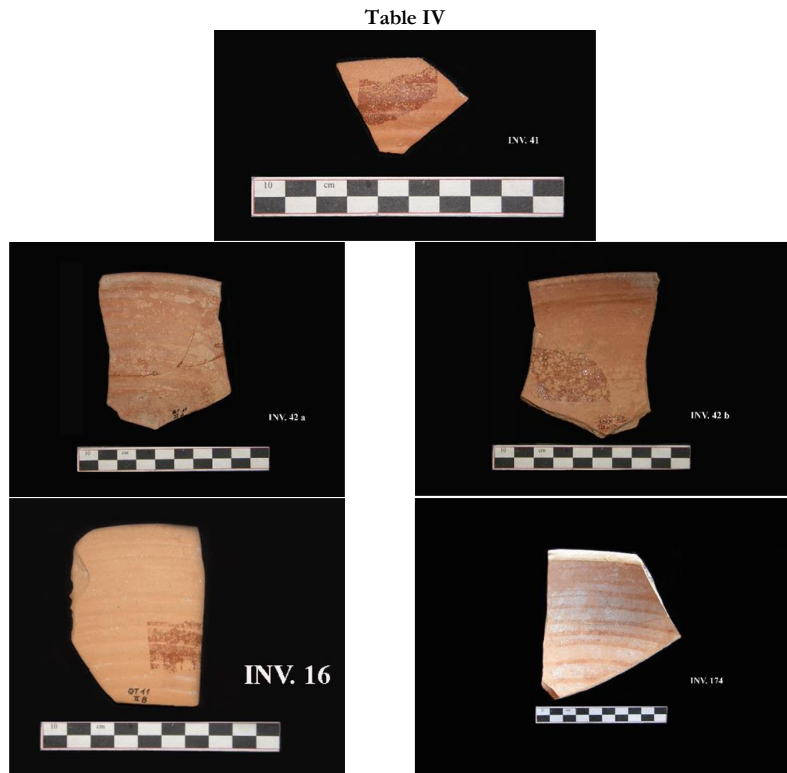
Table II



I, Cups, Burnished Decoration: from up to down and from left to right, Inv. 118a, Inv. 118b (Drawing) QT 1 I, ID 39; Inv. 184a, 184b (Drawing) QT 6A IV d, ID 790; Inv 120a, Inv. 120 b, QT 1 I, ID 35.

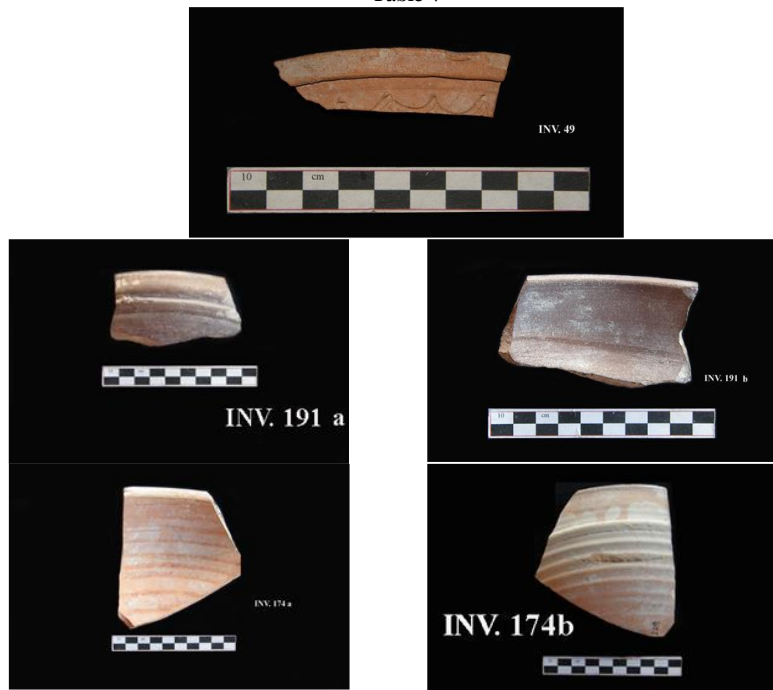


I, Cups, Painted decoration: from up to down, Inv. 138a, Inv. 138 b (Drawing); Inv. 21a, Inv. 21 b (Drawing); Inv. 51.



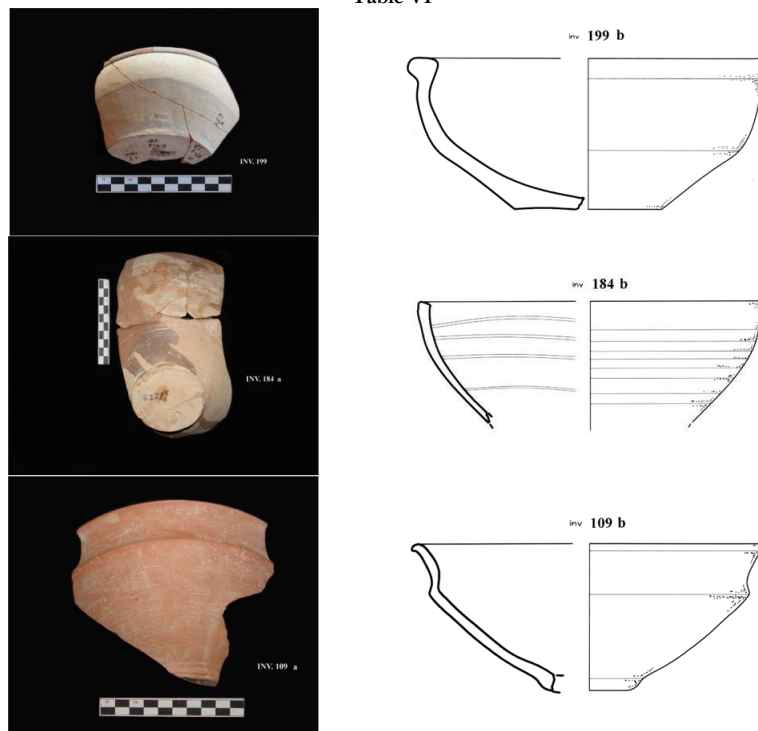
I, Cups, Ribbed and Burnished decoration: from up to down, from left to right, Inv. 41, QT 11 IIb, ID 233; Inv. 42a, Inv. 42b, QT 11 IIa, ID 213; Inv. 16; Inv. 174, QT 5A IVb ID 642.

Table V



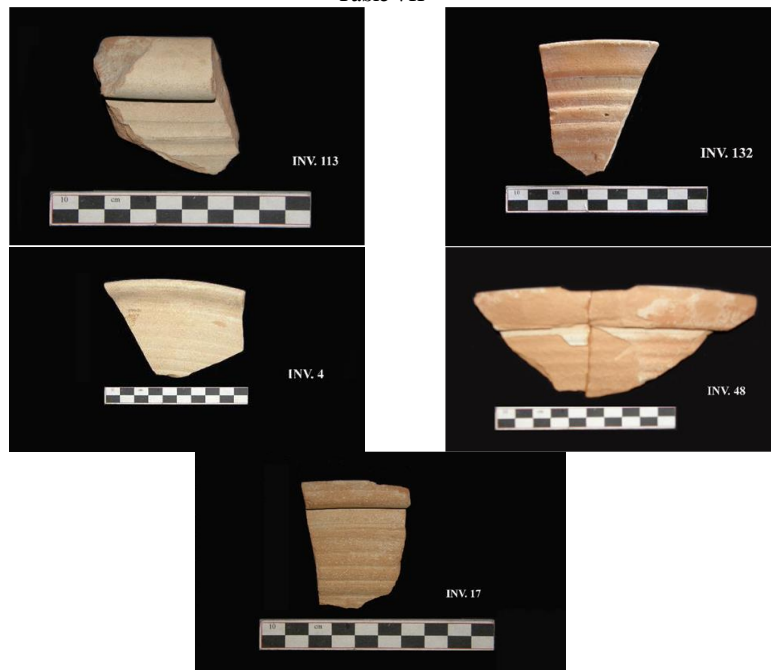
I, Cups, Ribbed, Burnished decoration: from up to down, from left to right, Inv. 49, QT 11 IIa, ID 223; Inv. 191a, Inv. 191b, QT 5, ID 918; Inv. 174a, Inv. 174b, QT 5A IVb, ID 64.

Table VI



I, Cups, Bases of Ribbed and Burnished forms: Inv. 199a, Inv. 199b (Drawing), QT 3-4, ID 476; Inv. 184a; Inv. 184 b (Drawing); Inv. 109a, Inv. 109b (Drawing), QT 1 I, ID 29.

Table VII



II, Basins, from up to down and from right to left, Inv. 113, QT 1 I, ID 40; Inv. 132, QT 1 III, ID 86; Inv. 4 QT 11 2a, ID 216; Inv. 48, QT 11 IIa, ID 222; Inv. 17, QT 11 II b, ID 241.

Table VIII



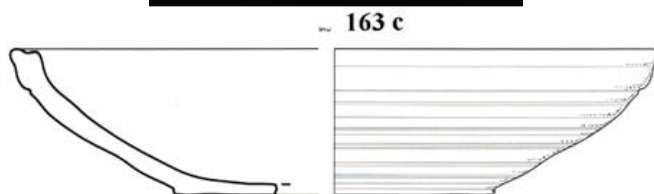
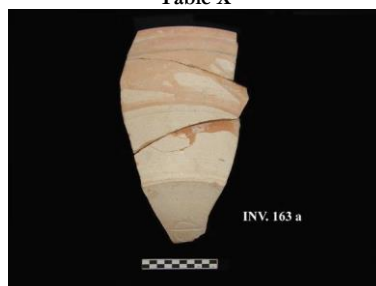
II, Basins, Burnished decoration: from up to down, Inv. 163a, Inv. 163b, QT 4 B III, ID 530; Inv. 130, QT 1 Ia, ID 53.

Table IX



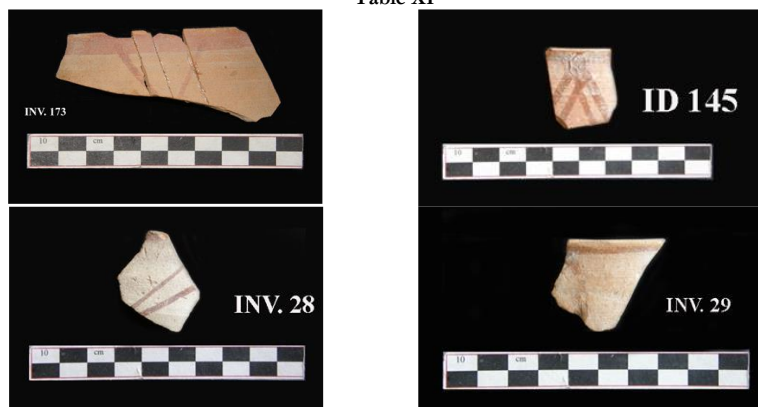
II, Basins, Painted decoration, from up to down, Inv. 112, QT 1 I, ID 3; Inv. 44, QT 11 IIb, ID 246; ID 437.

Table X



II, Basin, Bases: Inv. 163a, Inv. 163c (Drawing) QT 4 B III, ID 530.

Table XI



III, Small Olla; Painted decoration: from up to down from left to right, Inv. 173; ID 145; Inv. 28; Inv. 29.

Table XII



INV: 137 b



INV. 183 b



IV, Olla: Inv. 137a, Inv. 137b (Drawing), QT6 I b, c, d, ID 149; Inv. 183a, Inv. 183b (Drawing), QT 6A IV, ID 752.

Table XIII



V, Jar: from up to down, from left to right, ID. 102, QT 3; ID 143; Inv. 124, QT 1 Ia, ID51; Inv. 125, QT 1 Ia, ID 49; Inv. 106, QT 1 I, ID 27.

Table XIV



V, Jar, Engraved Decoration: ID 580; ID 680.

Table XV



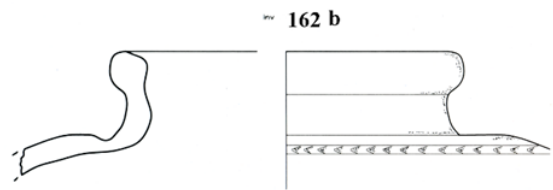
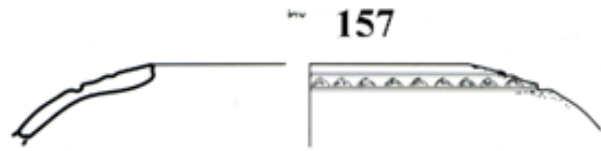
V, Jar, Excised decoration: up, Inv. 162, QT 4B III, ID 532; below, decorative motifs, Inv. 157 QT 4A IIIa, ID 501.

Table XVI



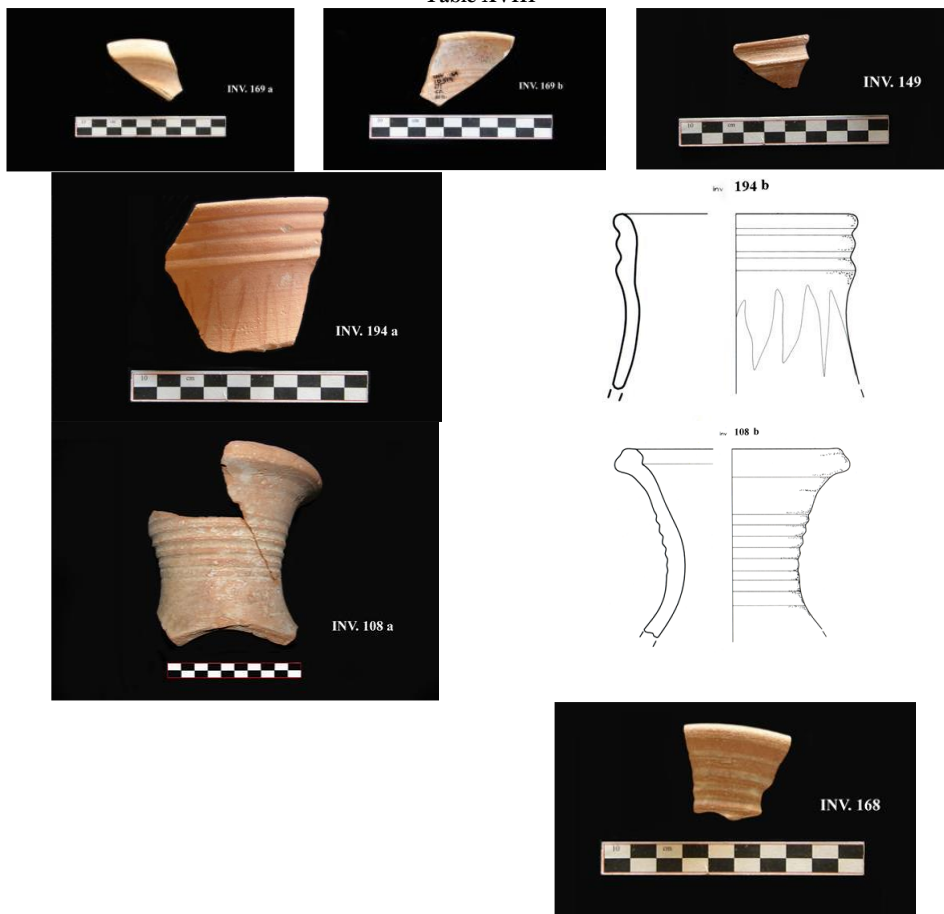
V, Jar, Roulettes decoration: from up to down from left to right, ID 657; ID 677; Inv. 3, QT 11 II b; Inv. 151, QT 3A IIIa, ID 457.

Table XVII



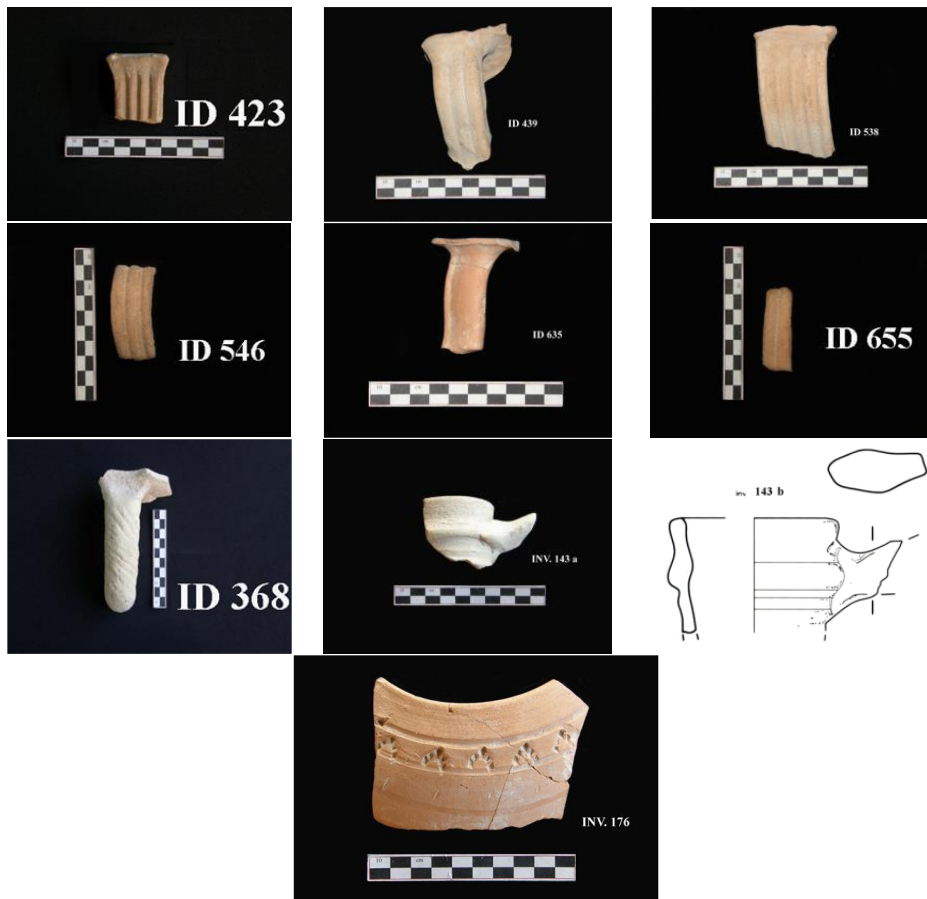
V, Jar, Burnished decoration: Inv. 157 (Drawing), Inv. 162a, Inv. 162b (Drawing), QT 4B III, ID 532.

Table XVIII



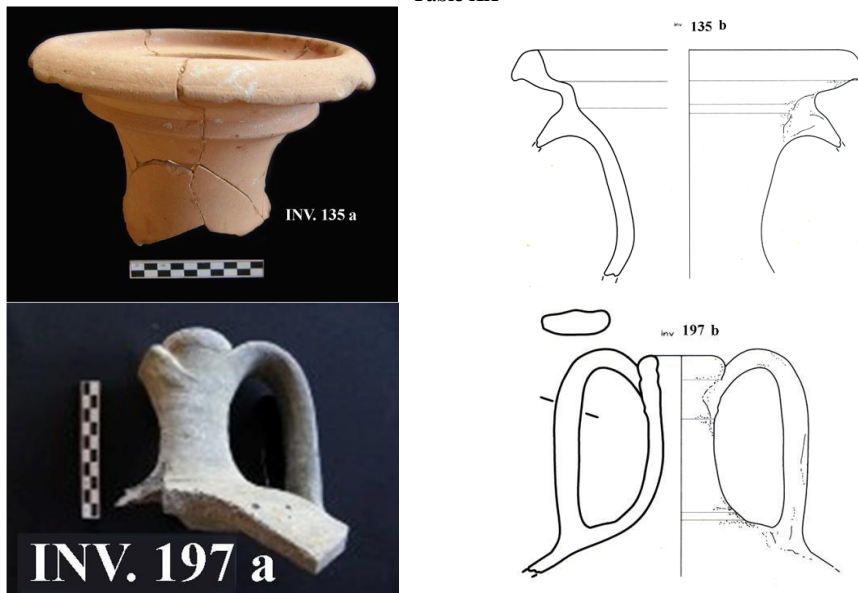
VI, Jugs: from up to down, from left to right, Inv. 169a, Inv. 169b, QT 5A IIIa ID 579; Inv. 149, QT 3A III, ID 434; Inv. 194a, Inv. 194 b (Drawing), QT S, ID 944; Inv. 108a, Inv. 108b (Drawing), QT 1 I, ID 32; Inv. 168 QT 5 A III, ID 564.

Table XIX



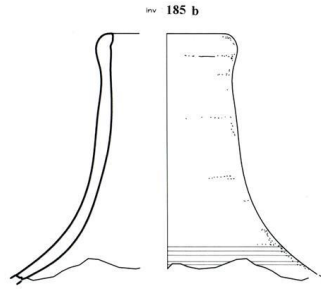
VII, One handle jug: ID423; ID 439; ID 538; ID 546; ID 635; ID 655; ID 368; Inv. 143a, Inv. 143b (Drawing); Inv.176.

Table XX



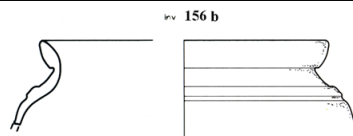
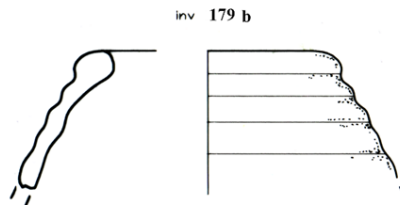
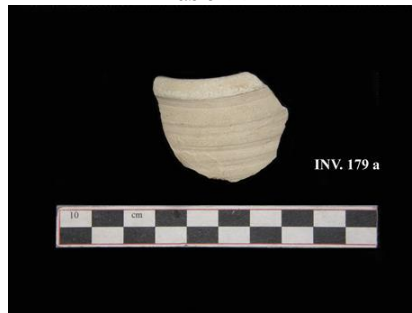
VIII, Amphora: Inv. 135a, Inv.135b (Drawing), QT 3bis VII, ID 185; Inv. 197a, Inv. 197b (Drawing).

Table XXI



IX, Bottle: Inv. 185a, Inv. 185b (Drawing) QT 6A, IV d, ID 791.

Table XXII

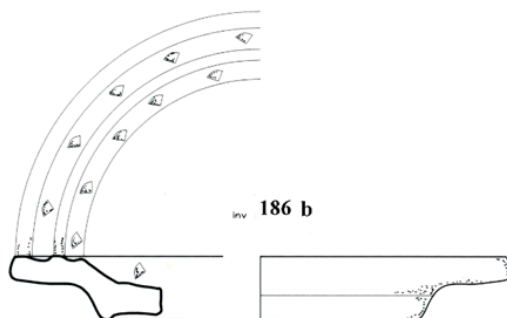


X, Miniaturistic Vase: Inv. 179a, Inv. 179b (Drawing), QT 5B alfa II, ID 650; Inv. 156a, Inv. 156b (Drawing), QT 4 A IIa, ID 502.

Table XXIII



inv 158 c

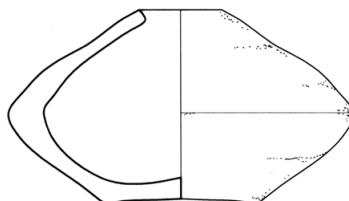


XI, Lid or cover: Inv. 158a, Inv. 158b, Inv. 158c (Drawing), QT 4 A III a, ID 500; Inv. 186a, Inv. 186b (Drawing), QT 6A V b, ID 793.

Table XXIV

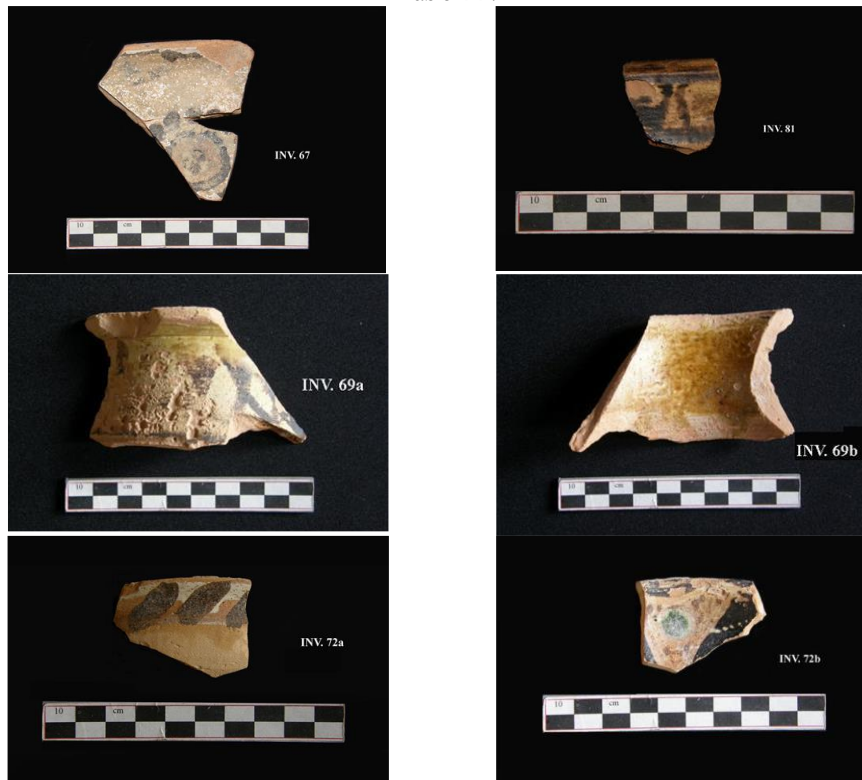


inv 198 b



XIII, Flacon: Inv. 198a, Inv. 198b (Drawing), QT'64, ID 888.

Table XXV



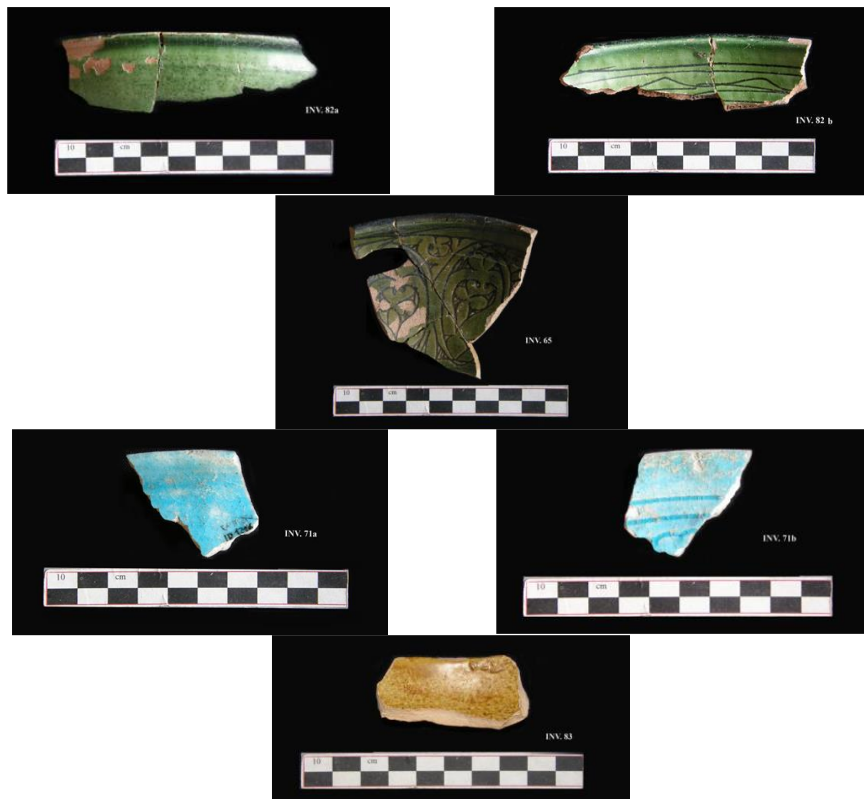
I, Slip Painted: Inv. 67, QT 3-4 B III, ID 1034; Inv. 81, QT 4B, III, ID 1037; Inv. 69a, Inv. 69b, QT B, T S, ID 1118; Inv. 72a, Inv. 72b.

Table XXVI



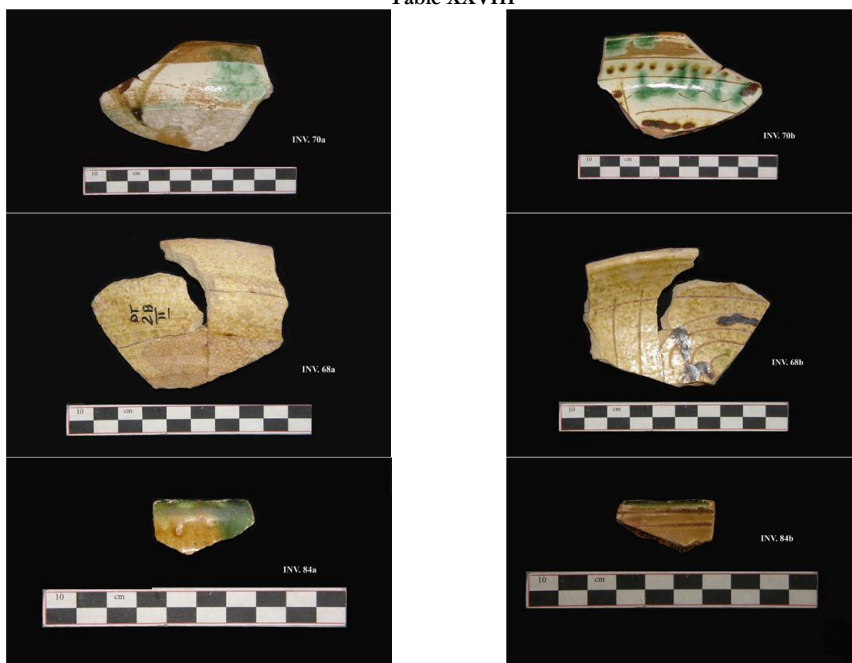
II, Underglazed: Inv. 66a, Inv. 66 b, QT 6A V B, ID 1078; Inv. 64, QT 2, ID 990.

Table XXVII



III, Graffita: Inv. 82a, Inv. 82b, QT '64, ID 1205; Inv. 65, QT '64, ID 1204; Inv. 71 a, Inv. 71b, QT, ID 1216; Inv. 83 QT 4B, III, ID 1044.

Table XXVIII



IV, Graffita and splashed: Inv. 70a, Inv. 70b, QT bis IV e, IV, ID 998; Inv. 68a, Inv. 68b, 2 B, II, ID 1031; Inv. 84a, Inv. 84b, QT 4 B, III, ID 1502.

Table XXIX



VII, Monochrome Turquoise: Inv 76a, Inv.76b, QT S, ID. 1135; VIII, Monochrome Black, Inv. 75, QT 3, ID 1070.