



The Pottery of Jordan

A MANUAL

Edited by Jehad Haron and Douglas R. Clark



Late Hellenistic farmstead assemblage, Courtesy Madaba Plains Project- `Umayri

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CONTRIBUTORS

Name	Contribution	Organization	Location
Jehad Haron	Editor/Author	American Center of Research	Amman, Jordan
Douglas Clark	Editor/Author	La Sierra University/MRAMP	Riverside, CA USA
Hanadi Al–Taher	Reviewer	American Center of Research	Amman, Jordan
Adeeb Abushmais	Hellenestic Period	Independent Scholar	Amman, Jordan
Khairieh Amr	Nabataean Period	Independent Scholar	Amman, Jordan
Stephen Bourke	Middle/Late Bronze Age	University of Sydney	Sydney, Australia
Marta D'Andrea	Early Bronze Age	Sapienza University of Rome/MRAMP	Rome, Italy
Debra Foran	Byzantine Period	Wilfrid Laurier University	Waterloo, ON, Canada
Larry Herr	Typology + Iron Age	Burman University	Lacombe, AB, Canada
Moawiyah Ibrahim	Chacolithic Period	Yarmouk University	Amman, Jordan
Zeidan Kafafi	Pottery Neolithic Period	Yarmouk University	Irbid, Jordan
Gloria London	Technology + Sourcing	Independent Scholar	Seattle, WA, USA
Basem Mahamid	Late Islamic Period	Department of Antiquities/MRAMP	Amman, Jordan
S. Thomas Parker	Roman Period	North Carolina State University	Raleigh, NC, USA
Andrea Polcaro	Sociology of Ceramics	Perugia University/MRAMP	Perugia, Italy
Suzanne Richard	Early Bronze Age	Gannon University/MRAMP	Erie, PA, USA
Micaela Sinibaldi	Crusader Period	Shanghai International Studies University	Shanghai, China
Bethany Walker	Middle Islamic Period	University of Bonn	Bonn, Germany
Alan Walmsley	Early Islamic Period	Macquarie University	Sydney Australia



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PERMISSIONS

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..... Introduction

Jehad Haron (jharon@acorjordan.org)
Douglas R. Clark (dclark@lasierra.edu)

The purpose of this manual on the pottery of Jordan is to provide museum personnel in Jordan, Jordanian archaeologists and archaeology students, and other specialists a concise but thorough treatment of Jordan's pottery repertoire in illustrated online and print formats. Our hope is that it becomes the standard reference resource (in Arabic and English) on Jordanian pottery for ongoing archaeological research and cultural heritage preservation.

The development of pottery manufacturing during different periods in Jordan's history provides a window onto the variations in material culture representative of each archaeological period. This, in turn, has contributed to systematizing the history of pottery and linking the evidence with each different historical period. So, it can be argued that pottery has become one of the most representative marks of cultural identity of previous civilizations and nations.

Given the ubiquitous presence of pottery sherds almost everywhere archaeological sites are found, our study of ceramic remains enriches immeasurably our attempts to understand ancient chronology, cultural expressions, trade and industry, social structures, and everyday life.

Since the first archaeologists began to visit the Levant in the nineteenth century, many different and sometimes contradictory theories have appeared due to the scarcity of tools and scientific skills related to the history of archaeological ruins. With the advent of the careful analysis of pottery, it became the most reliable material evidence for researchers to date archaeological ruins and link them to periods of cultural expression.

The science of pottery research went through various stages, which led to its maturity as it moved from mere touching by hand to nuclear analysis. Scientific and laboratory research has brought us to an advanced stage that enables linkage of archaeological layers and ruins with each other.

The idea of developing this guide arose as a contribution by local and foreign researchers working in the field of archaeological research in Jordan. Perhaps this does not seem like a huge scientific work compared to some other works in the area of studying and analyzing pottery. However, we believe that this book puts us on the right path. It is a simplified guide, but it will benefit students and new researchers in this field.

The guide is divided into multiple sections consistent with the historical division of Jordan's past, starting with the Neolithic period of pottery (ca. 8000 BC) and ending with beginning of the 20th century AD. With a distinguished group of specialized researchers, we are attempting to use precise if simplified language expressing the most important development stages of the pottery industry throughout history, explaining the most important features associated with pottery manufacturing.

Researchers were able to present scientific content with photos and graphics that make this guide a good start for every student or novice researcher. In addition, it has a list of distinguished research, resources, and literature for those who seek further information and for the purposes of documentation and citation.

The bilingual glossary of terms in this guide gives it a scientific grounding and helps the reader in understanding many scientific terms related to pottery analysis.

Our objective is to produce a digital copy of this guide to allow easy access for researchers and students on different websites, as well as a durable, lab-ready, hard-copy version for use in research settings.

PART 1

POTTERY OF JORDAN

History of Jordan

Jehad Haron (jharon@acorjordan.org)
Douglas R. Clark (dclark@lasierra.edu)



History, at its core, is the study of the past. Dependent on reliable sources such as inscriptions, narrative texts, and material culture, history represents interpretive reporting on chronology, geography, groups, events, and causation in order to tell past stories. In addition, the history of Jordan is inextricably tied to the history of pottery as forms and techniques changed over time for utilitarian and aesthetic reasons fitting each age.

Writing the history of any civilization involves motives, either ideological, utilitarian, scientific, or even personal. All of these motives have a direct or indirect influence on the historical narrative. Ancient historians such as Herodotus, Josephus, Ibn Khaldun, Ibn Katheer, Abu Shama, Ibn al-Atheer, al-Dhahabi and others had attempted to write their historical narrative by tracing information about different peoples and civilizations. To this purpose, they conveyed at times accurate or at times conceived narratives, often reflecting a preferred past, regardless of their source, but at least they tried to do so. While some of them may have verified these narratives, others were satisfied with only conveying them for particular purposes, regardless of the source.

Regarding the ancient history of Jordan, one can identify historical periods, linkages, and events. These can be used as a foundation to produce a reliable historical narrative that tells the story of Jordan.

Half a million years ago or more, during the Paleolithic Period (see “Archaeological Periods in Jordan” at the end of this chapter), characteristic features of early nomadic civilization in Jordan began emerging. The Eastern Desert has yielded stone tools from as early as 250,000 BC from ancient kill sites.

The Neolithic Period represented a time of great transition, with the domestication of plants and animals, with the beginnings of settled villages, and with expanded population in the region. Neolithic remains appear in sites like Bayda, Basta, and 'Ayn Ghazal, the last of which became an urban center, one of the oldest examples of such.

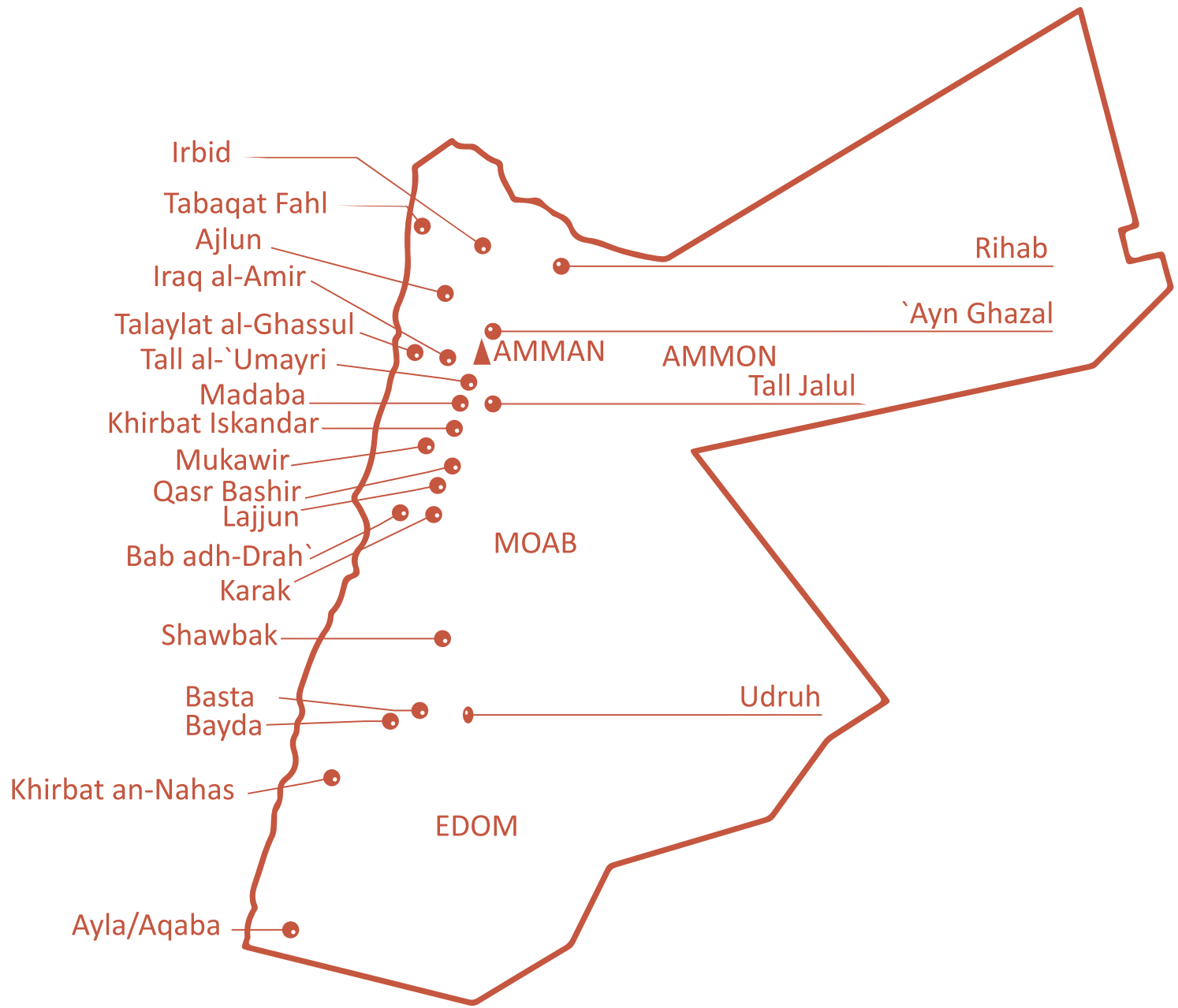
The Chalcolithic Period is richly represented at the site of Tulaylat al-Ghassul in the Jordan Valley, home to distinct ceramic forms including cornet vessels and decorated clay churns. This was a time when copper was mined and used in cultic, military, and agricultural settings.

Five thousand years ago signaled the start of the Early Bronze Age. This was a time of conflict and external control, and the struggles between the Egyptian “Pharaonic,” Hittite, Sumerian and Akkadian civilizations over the acquisition and extraction of wealth in the region of the ancient Levant. Many walled and fortified cities emerged in Jordan at this point with the beginnings and expansion of urban centers. Some of these urban centers developed distinct water systems, such as Java in the northeastern desert, in addition to many others in the Jordan Valley and other parts of the country. Burial architecture represented in the hundreds of dolmens in Jordan ties the region to the coastlines of the northern Mediterranean and eastern Atlantic. In addition, burial customs and cemeteries were distinguished in Bab adh-Dhra, which contained a huge number of graves; some researchers consider it one of the largest cemeteries in the Levant. Other urban settlements from this period include Khirbat Iskandar (solely Early Bronze Age) and appear at sites such as Tall Jalul and Tall al-`Umayri.

The Middle Bronze Age saw the development of strong defense systems at Tabaqat Fahl (Pella), Irbid, Tall al-`Umayri, and elsewhere, expanded regional trade, and the extended use of bronze (copper and zinc or arsenic) for strong tools. Ceramic traditions were of high quality and included imports from Cyprus and Mycenae.

Not well represented in Jordan, the Late Bronze Age witnessed a return from more sedentary lifestyles back to more nomadic ways, although several important architectural features appear at Tabaqat Fahl, Tall al-`Umayri, and the Amman Airport structure during this period.

The transition from the very Late Bronze Age through the Early Iron Age was characterized by significant turmoil and upheaval throughout the Levant, including a major shift to diminished pottery quality and styles. Archaeologically, the period saw the rise of hundreds of small agricultural villages, not unlike those appearing across the Jordan River.



MAP OF JORDAN
Sites mentioned in "History of
Jordan"



These villages transformed into small tribal coalitions that over the course of two centuries prepared the way for the establishment of nation-states.

By the ninth century, during the early part of the Iron Age II, the states of Ammon and Moab emerged, and Edom a bit later (Edomite highland sites appear in the eighth century, but the lowland site of Khirbat an-Nahas showed organized industrial activity in the 11th century). The balance of power among these entities, states to the west, and international empires shaped the history of the Iron Age II. This is seen in the emergence of the independent Ammonite, Moabite, and Edomite kingdoms in Jordan three thousand years ago, and their intertwining linguistic dialects and the international relationships with their surroundings, especially what we have learned from the correspondence between the Assyrian and Babylonian royal courts in addition to the biblical resources. It is during this time that the famous Mesha Inscription's descriptions of political conflict emerge as important historical, cultural, and political indicators of the age. The Iron Age states lasted until the Persian Period, which is not all that well represented in Jordan outside of domestic architecture and provincial inscriptions such as those found at Tall al-`Umayri.

The Hellenistic Period, beginning with and immediately following Alexander the Great and the subsequent history of conflict among his successors, is also not well represented in Jordan, although the palace-fortress of Iraq al-Amir west of Amman is a stunning example of Greek architecture. And in time, the rise of the Decapolis cities, mostly in Jordan, helped shape the cultural and political landscape of northern Jordan.

The emergence of the Nabataean Kingdom, which in the 4th century BC quickly positioned itself in the Levant and the North Arabian Peninsula as an economic power, left us with stories and monuments that are the most beautiful so far. In addition, when the Romans realized the necessity of dismantling and reshaping this region because of its geographical distinction and its control over the transportation and international trade routes at that time, the Roman general Pompey marched to the east in the first century BC. However, the Roman presence enriched the story of Jordan, as it left us with the enhanced cities of the Decapolis, monumental architecture, and other architectural remains. On top of all this, Rome established a strong defense system to protect borders and trade that still exist today, including at Qasr Bashir, Udruh, Lajjun and other places.

When Christianity emerged, archaeologically detectable in Jordan from the 4th century AD, new elements in this story appeared in terms of architecture, arts, and archaeology. These included the Baptism site, Mukawir, Madaba and numerous other sites during the most intensive occupational period in Jordan in pre-modern times. Most importantly, we have church models believed to be among the oldest churches in the world, with promising candidates surfacing in Aqaba or Rihab.

As well, the Islamic "conquest" (the transition between Christianity and Islam in some locations took centuries and was relatively peaceful) created a cultural distinction in the region, and the effects of the intervening battles in the north and south and related shrines are present in the Jordan Valley and other areas. Islamic architecture, however, appeared early when it was represented in the construction of the oldest coastal city outside the Arabian Peninsula during the Rashidun era, which is Ayla. Moreover, the arbitration between Caliph Ali bin Abi Talib and Mu'awiyah bin Abi Sufyan took place in southern Jordan. The art of Islamic architecture peaked in the Umayyad period, when palaces, art, and new stone decorations (arabesques) spread from northern to southern Jordan, forming what are considered the best Islamic architectural models in the region.

There also exists the story of conflict over Jerusalem between the Christian crusaders and Islamic forces. Some fortresses were constructed by the crusaders, such as Karak Castle and Al-Shawbak Castle, as well as others in the region. On the other hand, Muslims established Ajlun Castle and others. After the battles with crusaders ended, the Mamluks came and focused on the geographical location of Jordan, which lies halfway between Damascus and Cairo. They paid sufficient attention to that geographical location that they called Karak "Karak Al-Mahrus," a name that is



similar to that of Cairo's Al-Mahrus and Misr Al-Mahrus. But the story is not yet complete. When the Ottoman Empire built the Darb Al Hajj (pilgrimage trail), which starts from the south of Damascus and ends in Medina, castles, caravanserai, and fortresses were established along the route, and the ponds and wells were restored; Ottoman rule lasted until World War I, producing architectural and ceramic traditions observable throughout the country of Jordan.

Archaeological Periods in Jordan	Approx. Dates
Paleolithic	1 million-20000 BC
Mesolithic	20000-10000 BC
Neolithic	10000-4500 BC
Chalcolithic	4500-3600 BC
Early Bronze Age	3600-2000 BC
Middle Bronze Age	2000-1550 BC
Late Bronze Age	1550-1200 BC
Iron Age I	1200-1000 BC
Iron Age II	1000-539 BC
Persian Period	539-332 BC
Hellenistic Period	332-63 BC
Nabataean Period	4th century BC-AD 106
Roman Period	63 BC-AD 324
Byzantine Period	AD 324-636
Early Islamic Period: Umayyad & Abbasid	AD 636-900
Middle Islamic Period: Fatimid, Ayyubid, Mamluk	AD 900-1517
Crusader Period	AD 1096-1271
Late Islamic Period: Ottoman	AD 1517-1924

Ceramic Technology and Manufacturing Techniques

Gloria London
(glondon18@gmail.com)

Potters have relied on the same techniques to shape bowls, jugs, jars, cookware, and other vessel types for millennia. Well-defined and more subtle variations in the manufacturing process, clays, forms, and surface finishes are discernable throughout the different archaeological eras, but the persistence of traditional technologies resulted from the limited number of ways to shape pots.

Ceramic containers have always provided the most secure and durable receptacles to store solid foods, ferment foods, or keep liquids cool and fresh. Pottery alone provides a dry environment free of rodents or insects. Less reliable were containers made of wood, plaster, woven baskets, internal organ casings, stone, or pits dug into the ground. They cannot hold their contents long-term or keep them free of vermin.

In addition, rather than being passive containers, the highly porous walls allowed pots to absorb the proteins, fats, yeast, and bacteria from the foods poured into them. Yeast and other residues automatically embedded into the unglazed pot walls from fermenting milk, grains, and grapes. A practical feature of plain red wares is the ability to convert fresh milk into shelf-stable clarified butter (ghee), yogurt, and other dairy products. Water stored in clay jugs or jars would leak or sweat through the porous walls, leaving behind the bitter-tasting minerals native to local sources and became trapped on the pot interior. As the liquid migrated through the porous walls, it cooled and tasted sweeter (London 2016: 103). Although clay is virtually indestructible when minimally

fired to 650 degrees centigrade, the disadvantages of pottery are breakage and cracking when dropped or when cold water falls on a hot cooking pot.

MANUFACTURING TECHNIQUES

Ancient pots were coiled and pinched by hand, thrown on a wheel, or shaped with the help of a mold. The different techniques can at times be associated with pots of particular shapes and sizes. Handmade pots often involved the use of a slow-moving turntable lacking momentum. Wheel-thrown shapes are formed quickly with the benefit of centrifugal force. Other than glazing and casting liquid clay in molds, most techniques to manufacture and decorate pottery began in Neolithic times. Potters likely operated in an “interrupted technique of manufacture” involving breaks between the hands-on work in order to allow the clay to dry slightly before further work proceeded.

The “pinching” technique is reserved for small pots no taller than finger length. Pinch pots begin as a ball of clay held in the hand before the potter made a hole with a thumb and gradually widened it into a bowl (Fig. 1).

Two bowls joined together could form a juglet.

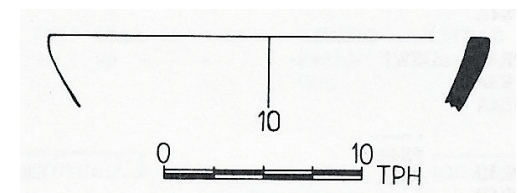


Figure 1 – EB bowl, MPP 3, p. 147, pl. 5.28.10

The “coiling” technique accommodates pots of all sizes. Coiled pottery consists of bands of clay rolled





on a surface or in the air before they are added or wound one by one to shape a pot. Coils can be thick or thin, long or short. After coils are added, they are smoothed manually or with a wooden rod to erase the join lines. Much of this work occurs as the pot stands on a lightweight mobile work surface often termed a “tournette.” One hand worked the clay as the other rotated the turntable. Alternatively, pressure applied directly to the clay can cause the turntable to rotate in a slow, sometimes jerky movement. One or more breaks in the work allows the clay to dry slightly before adding more coils to increase the pot height. If the clay is too wet, the pot will collapse under the weight of additional coils. For large pieces such as vats, jars, ovens, and Early Iron Age anthropoid coffins, instead of coils, potters use rectangular slabs of clay that measured slightly larger than the hand. They were arranged as if building with bricks. After adding a slab, the potter smoothed the edges to eliminate the joins. The coil-and-slab hand building techniques persisted for the largest containers throughout history.

Molds work best for large open platters or small intricate lamps. For each of these pot types, the molds are entirely different as is the suitable clay. Molds made of wood, basketry, stone or, an old clay pot served as a support to shape primarily bowls and cookware. A flattened disk of clay or coils were applied on the inside or outside of a mold to shape a rounded open form. Dry material on the mold prevented the clay from sticking. Clay lining a mold became the lower body of a Late Bronze Age cooking pot (Fig. 2) before clay coils added above the mold formed the narrower upper body (Franken and

Kalsbeek 1969: 88). The last coil became the rim. Classical-era lamps made in molds involved pouring or “casting” a nearly liquid clay into a mold, often carved with intricate designs.

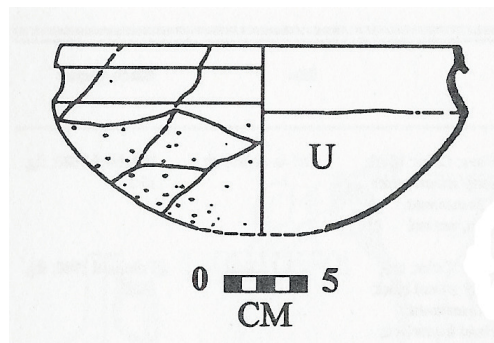


Figure 2 – LB cooking pot – Hendrix, et al., p. 163, #196

Most pots of all sizes can be “thrown” on a fast-moving heavy wheel. First the potter centered a lump of clay on the wheel which was kicked with one foot and continued to spin due to the momentum created by its weight. At all times the potter had two hands free to work the clay. The pot was then set aside nearby to dry slightly before it was repositioned on the wheel upside down to be completed. The initial shape might retain a thick bottom, which was allowed to dry only until it could support itself when inverted on the wheel head to shape the rest of the pot from the reservoir of clay (for example Sideroff 2015: fig. 8). This is the practice at Zizia, Jordan (Fig. 3), near the Queen Alia International Airport.



Figure 3 – Zizia potter sitting at his wheel with pots in three stages of work. In front of him, within reach, stand three incomplete pots, bases facing upwards. After they dry slightly, each will be placed upside-down on the wheel for further work. Each has a finished ring base above a thick lump of unworked clay. The potter will shape the pot upper body from the thick reservoir of wet clay attached to the finished base, as he has done for the piece still in progress on the wheel. Two pots on the left show the full shape (photo by Stefanie Elkins).



Wheel-thrown pots made from top to bottom all at once can be identified by spiraling marks on their unretouched bases. The mark results from the thin strip of organic material that sliced the rotating pot from the wheel (or from a cone of clay), as seen, for example, on reproductions of ancient lamps (Fig. 4). For a large series of small ancient bowls, lamps, or juglets, a potter positioned a tall cone of clay on the wheel from which one pot after another was shaped and pinched off to dry before the base could be reworked and smoothed (Franken and Kalsbeek 1969: 94). The same procedure persists at Zizia (Sideroff 2015: 103; fig. 11) and in the Sardis region of Turkey (Crane 1988: 13).

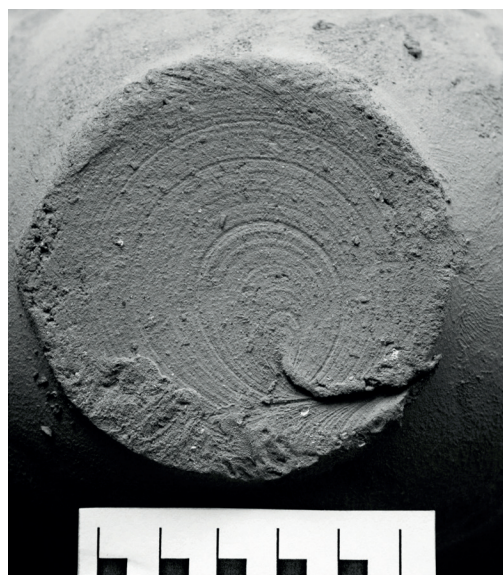


Figure 4 – Unretouched base shows spiral on a Zizia reproduction of an ancient lamp (photo by author)

SURFACE TREATMENTS

To create a smooth and/or decorative finish, potters manipulated the surface on pots by adding to it or reworking

it. Clay, paint, or glaze was added at specific times in history. Reworking the surface involved incising, shaving, or burnishing it. A common initial procedure to cover large parts of the surface was to apply one or more layers of a “slip,” which is a slurry made of the finest clay particles suspended in water to which coloring agents were added at times. Paint is the same slip slurry, with added color, but applied in a pattern on limited parts of a pot. Slipped surfaces are common for most ancient handmade shapes other than jars and cookware. The prevalence of small rock fragments in the clay bodies tended to prevent paint from adhering well to pot surfaces. The solution was to cover pots with a slip before painting. Slips better absorbed the paint than the impervious rock inclusions.

Given the brackish nature of local water, after shaping a pot and before applying a slip or paint, potters scraped the pot’s surface to remove the outermost layer. The pot dried as water migrated through the wall to the outer surface, where it evaporated, leaving the salt to accumulate on the surface. Without scraping away the deposit, a scum or bloom formed a thin white/gray mask that obscured painted patterns and ultimately caused the paint to detach. After scraping, the surface slip was applied prior to any paint, burnish, or incised designs. “Burnish” refers to compacting the pot surface, before it dried, with a pressure tool that caused a realignment of the surface particles in a manner that reflected light. Fine clay particles and slipped surfaces are more inclined to align than plain surfaces (Shepard 1976: 192). Red slipped and burnished surfaces repeat throughout history, given that they are the best solution to create a smooth,

aesthetically pleasing local pottery. Incised and punctate patterns are also good surface treatments, although tools can drag the rock inclusions in the clay body.

Glazed surfaces appeared sporadically in Byzantine times and became more common later to create non-porous containers. Natural pine or pistachio tree resins were likely applied to jars for the same purpose, but acids in the foods they held destroy the linings over time. Wine jars require annual resin lining (London 2020: 90). Wax or paraffin lined traditional olive jars. For cooking pots, traditional practices designed to reduce porosity involved special coatings of natural organic substances (London 2016: 89).

DRYING AND FIRING

Before pots can be fired, they must be dry. The same holds for the fuel and the kiln. Pots are no drier than the air around them, which is one reason that pottery production was a summertime activity. Small pots that dried in days would be stored until enough were ready to fill a kiln. Up to 400 pots, large and small, could be fired together in a traditional kiln or be piled on a platform, for example, as near Sardis, in Turkey (Crane 1988: 19 fig. 16) and in the Philippines (London 2016: 95 fig. 7.1). Small pots piled into large jars enabled a potter to fire many pots and fill as much space in the kiln as possible and minimize the fuel consumption.

To assure that no moisture remained within vessel walls, potters initiated the firing process with a drying fire. In the earliest stage, an extremely small fire burned outside the kiln at the mouth of the fire box. It also dried the kiln walls and fuel.

Multiple firing strategies are



documented among traditional potters in the 20th century. Pots can fire piled on a platform or in a pit and then covered with fuel. Pit kilns were reserved for large jars. Built kilns made of stone and/or bricks were covered with a layer of mud mixed with straw to close the gaps. Any combinations of organic materials, including old baskets, clothes, or wooden poles, bark, dung, and pinecones sufficed for fuel. The branches of all trees were suitable, but the best woods produced the least ash, smoke, and odor. Fires could last for 10 hours for ordinary pots, but most of the time it was a small controlled fire followed by only two hours of flames roaring throughout the kiln. Huge fermentation jars in Cyprus, large enough for an adult to sit inside, required 45–80 days to complete, which included 20 days to dry and three days to fire.

In recent times, in Egypt, Cyprus, and elsewhere, people dismantled unused kilns in order to reuse their bricks, stones, and space. Ancient dark, dirty, and dangerous kilns, especially for children to use, are rarely preserved (Fig. 5).



Figure 5 – Top of kiln following firing at Zizia (photo by Sharon Prest)

ORGANIZATION OF THE POTTERY INDUSTRY

It is likely that men, women, and children worked in the pottery industry. Skilled adults of all ages carried out the primary shaping work, either in workshops or household courtyards. Young people watched and learned the craft while performing subsidiary tasks. Youths and children could collect and crush clay or trample it underfoot while mixing in water. They might burnish the surfaces, a tedious task, or apply slip and paint. Collecting wood, dung, bark, and other organic materials to fire the kiln was another obligatory task for young people.

In addition to potters working at home or in a workshop setting, itinerant potters traveled among communities to make whatever was needed. The traveling potters included specialists in the production of large stationary jars and basins, which were sometimes embedded into the ground and did not move for decades. As a seasonal activity reserved for the dry months, the fermentation jars made until 1972 in Cyprus carry incised dates of manufacture beginning in May through October (London 2020: 21; 97). Until the mid–20th century, certain female itinerant potters from Kornos would temporarily relocate their entire nuclear family to live in a village located at a higher altitude where they spent several months making pots. Children mined clay and collected fuel while their parents made and fired pots. The common type of kiln normally used for firing bricks sufficed for the pottery as well. The female potters traded or bartered pots for foods needed for the winter months.

CLEANING, USAGE, AND USE-LIFE

Most pots were designed for water and food processing, preparation, cooking or baking in an oven, and for storing food. The pot walls made of absorbent red clay would retain protein, yeast, bacteria, and fatty residues of foods they held. This feature proved beneficial for fermenting fresh milk and grains. Fresh milk poured into a jar that formerly held yogurt would automatically convert into a fermented food that could be stored for later use. Transport jars for liquids were used in addition to animal skins and pouches to hold fermented beverages and foods. Other uses for pottery include ceremonies, burials, children's toys, decoration, pipes, drains, tiles, ovens, and bricks. Ovens encased in mud bricks sometimes comprised jars, with a small side opening for a flue.

Porous pottery required daily and less frequent deep cleaning. Based on ethnoarchaeological research, daily pot cleaning involved swishing water with a branch of fresh or dried thyme, which is a natural disinfectant with anti-bacterial properties. For a deep cleaning, cookware and goat-milking pots were refired in a kiln or left in the baking oven to burn out food residue overnight.

Based on studies of clay pots in traditional communities, cooking pots had a life span averaging roughly two years. After two or three months, porous jug walls (for example the Islamic-era Handmade Geometric Painted Wares (Fig. 6)) became clogged with calcareous sediments that were absorbed from the mineral-rich water. The jugs were refired in the kiln to burn out the sediment, repurposed to hold other fluids, such as sweeteners, or discarded. People acquired new jugs each spring. Large stationary jars functioned for decades.



Figure 6 – Handmade Geometric Painted Jar, Hendrix, et al., p. 301, #495

Ceramic Typology and Dating

Everything human beings touch or think about changes through time and space.

Larry G. Herr
(lherr@burmanu.ca)

That simple statement is one of the most important observations of archaeology and, indeed, history. Hairstyles, writing, clothing, automobile designs, music, theological ideas, football strategies, social values, medical treatments, pottery forms—everything: they all change in our dynamic world. And archaeologists make use of those changes on almost every level.

The study of these changes through time and space is called “typology.” The term is based on a single “type” of thing, like a specific type of car (a BMW, for instance), and how we study the way it has changed or developed over time. We can do the same for women’s hair styles, mosque architecture, or Jordanian cuisine, or, even more specifically, the development of the falafel through time and space. It is different now than it was 50 years ago. And it is different in Damascus than it is in Amman. How is it different? Why is it different? When you answer those questions, or do research to answer them, you are doing typology.

Many “types” have “subtypes” that are slightly different, but clearly related. Handling this aspect of typology pits some typologists against each other. Some, called “separators,” like to break down every pot into a detailed group of subtypes based on the exact angle between the rim and the neck of a vessel. Others, called “lumpers,” like to combine the clearly related types and consider the detailed differences as simply variants of a type. The final decision regarding this issue has not yet been reached and likely never will be.

When presenting pottery in publications, researchers sometimes

use photographs, but specialized drawings show the pottery better. In the drawings the vessel is usually presented divided in half by a vertical line. On the left the exterior of the vessel is presented, while, on the right, the interior is shown complete with a black section depicting the thickness of the vessel at its various parts (researchers in the UK reverse the two sides). There is normally also a spread sheet attached that describes the ware of each vessel in terms of provenance, fabric, and color. In this volume the spread sheet is limited.

But here we are interested in the developments of ceramics, or pottery, through time, though space is a consideration, as well. Ceramic typology is probably the single most important aspect of archaeological work. This is so for several reasons. Three of the most important include:

1. Most archaeological sites beginning with the late Stone Ages contain thousands, even millions, of broken pieces of pottery called “potsherds” or just “sherds” for short (the British spell it “shards”). Pottery was inexpensive and, when ceramic vessels would break, people just discarded the broken pieces on the site near their homes, leaving them for us to find.

2. When the clay of pottery vessels is fired in a kiln, it becomes rock hard, and does not disintegrate or rot for thousands of years buried in the ground. When cleaned by an archaeological team, the sherd retains almost all of its ancient visible features.

3. The pottery is found in earth deposits like fossils in geological strata. They thus are the time clocks for the deposition of ancient debris, insofar



as we can separate one stratum from another.

If typology is the study of change, what caused those changes? Among many reasons, here are five of them:

1. The production of pottery was affected by advancing technologies, such as the potter's wheel, the addition of glazing, and firing techniques, bringing about changes.

2. Market pressures, such as peoples' changing aesthetic tastes, galvanized potters to make changes—for example, adding paint, slip and burnish, creating elegant forms—making their goods more attractive to potential customers.

3. New food processing and storage techniques suggested new shapes for pottery vessels as potters adapted their products to altered household lifestyles.

4. Potters were basically conservative people who often resisted change, preferring to produce vessels in ways they had done all their lives and had been taught by their parents or masters. This meant that change did not occur over night, but slowly, over a generation or two.

5. Pottery vessels were used for many different ancient activities in domestic and cottage industries. Every home and business would have been well stocked with vessels of several sorts to perform multiple functions such as food preparation, food storage, wine and beer production, containers for various types of objects (gaming pieces or silver and other metal items, for example), etc. They were the ancient kitchen cabinets, desks, and drawers of households.

TYPES OF CERAMIC VESSELS

We study ceramic typology based not on an individual type of vessel,

but on a whole corpus, or assemblage, of vessels that would have occurred contemporaneously in one place. They would have been a single list on a potter's menu, from which the purchaser could choose. For this reason, archaeologists like to find a destroyed house with its "set of dishes" smashed on the floors so they can reconstruct an ancient family's assemblage of vessels, thereby estimating the economic status of the household. Each assemblage was made up of "open" and "closed" vessels. Plates and bowls were open vessels, while jars and jugs were closed. This "assemblage" included the following well-known types, going from open to closed forms:

1. "Bowls" were the most frequent type of vessel in almost every assemblage and they still exist in most of our kitchens today for breakfast cereals, stews, and soups, but could also store groups of small objects or spices. Bowls could be deep or shallow, with large or small diameters. They could also be decorated or not. They were made to be seen on both the inside and outside, so potters would have smoothed and finished them on both sides. In a single assemblage, one can often find 10–20 different types of bowls, depending on function and looks. Bowls were often produced for functionality and were not decorated, or they could be intended for "show" and be made of very fine ware and decoration. The tops of some bowls curved inward to become closed forms. The inward curve (or sharp corner) of the upper body is often called "carination," especially with Middle Bronze Age to Iron Age bowls. The upper curve on some deep bowls is so pronounced that we call them "holemouth," because, looking down on them from above, the rim looks like a hole. Any liquid contents

in such bowls would be more secure than with open forms. Flat bowls, or "plates," "saucers," and "platters," are less frequent than ordinary bowls and occur only at certain times, as is also the case with very small bowls apparently used for drinking, such as "cups" and "mugs." Some vessels were used for religious activities, such as tall footed bowls called "chalices" and "miniature bowls." At rare times ceramic bowls could be made to look like stone (basalt) "mortars."

2. Very large bowls are called "kraters" (sometimes spelled "crater") that could have two or four handles. Almost all assemblages have them. They were used to store larger items or quantities than bowls, such as chickpeas and lentils kept at hand for frequent use in cooking meals. They would also be ideal for chamber pots. Large variants of kraters included flat-bottomed "basins" and "vats."

3. Cooking pots can be open or closed, but are made of a distinctive ware, often reddish brown in color, that can expand and contract in cooking fires. They usually had two handles. Open forms were probably for relatively dry dishes, while closed forms were ideal for stews and soups. They had round bottoms so they could be pressed into the coals of a fire without tipping over. Rare adaptations in cooking ware could be jugs for heating water and casseroles for baking (flat bottoms with lids).

4. Large closed vessels were primarily used for storage. The largest type is called a "pithos" (plural, "pithoi"), which often stood a meter tall, featured two to four handles (or more at times) and had a pointed base so they could be stabilized in shallow pits. Pithoi were too heavy for easy transport in trade,



often weighing 30–40 kg when empty. Not every period or place produce pithoi. They were intended to function like a food pantry today. Some examples have been found completely buried with only the top opening at floor level.

5. Smaller “jars” contained two opposing handles and were much more common than pithoi. Virtually every ancient assemblage had them. During the Early Bronze Age, jars could also be used as cooking pots. Residue analysis of some jars show them to have been used for liquids such as wine, beer, and olive oil, but carbonized wheat, barley, chickpeas, and lentils have been found in them, as well. They were employed in homes for storage, but were also the basic containers used in trade and transport by ship or caravan, although baskets, animal skins, and cloth bags would also have been used.

6. A type of small jar, but still with two handles, was called an “amphora” (plural, “amphorae”). They were often used for shipping and trade, and have been found in shipwrecks. Similar, but even smaller, vessels were called by the same name but with an added diminutive, “amphoriskos” (plural, “amphoriskoi”).

7. Smaller closed forms were “jugs,” characterized by the presence of only one handle. About the size of modern pitchers, they were used to store liquids in the short term and to pour them. They often had pinched “trefoil” rims, like many modern pitchers. Other vessels used for liquids include “flasks,” in a lentoid shape so they could be carried next to the body with relative ease, like modern canteens.

8. Very small jugs are called “juglets.” There are several different kinds, probably related to their specific functions. Residues of valuable oils

have been found in some of them. Others could be used to dip into jars and pithoi for liquids or grains and pulses (“dipper juglets”).

9. Before Hellenistic times, lamps were small bowls with pinched rims to make nozzles for flax wicks that could be lit with small flames, very much like candle flames. After that time, almost all lamps were closed with a permanent top, except for two holes, one in the middle to receive the oil poured from a juglet, and another at the end of the nozzle for the wick. Closed forms were more efficient and produced less smoke. They were made in molds and were often decorated on the top with patterns in relief. Confusingly, Mamluk (Middle Islamic) lamps often were open and looked very much like Iron Age forms!

These nine basic “types” make up virtually every assemblage in the archaeological record of the Middle East. Typological analysis follows the trajectories of their development through time and space, first establishing a sequence of changing forms and then attempting to place a chronological date on them.

TYPOLOGICAL ANALYSIS

But typological studies must be open to nuances and variations, often unexpected. There are certain principles that help us in this. I list seven of them here:

1. Each type or subtype within an assemblage can change at different rates. Generally, cooking pots and bowls change more rapidly than pithoi or jars. They are smaller, made of thinner ware, and were used more frequently in a larger variety of functions. They were liable to the vicissitudes of frequent

household use and the whims of stylistic change. They thus broke more easily and had a much more rapid turnover in domestic use, whereas some pithoi could have lasted for 100 years. Thus, bowls and cooking pots lend themselves to tighter chronological control than pithoi and jars.

2. Regional differences can dictate differences in forms. Dating pottery relates to the chronological element, but regional differences are the “space” element. People in northern Jordan had assemblages influenced by Syrian potters, while potters in the south had different influences. Some regions were wealthier than others, allowing people to purchase expensive imports rather than being satisfied with the more mundane local pots. People on the Mediterranean coast could more easily obtain imported fine wares directly from the ships that had sailed from Greece, Egypt, or Cyprus, while those who lived in Jordan had to pay middlemen extra funds to transport imported pottery from coastal harbors.

3. We may not have an unbroken line for some types through time. That is, a particular type of bowl may not (yet) have been found during one period, while similar forms were found in periods on either side. For instance, in a possible scenario, we may have many good examples of a type of pithos in Iron I, but we may not have in situ forms in Iron IIA–B. In Iron IIC, a pithos looks as though it could have descended from the Iron I form appears. Was there a connection? Meanwhile, pithoi that are typologically between the Iron I and Iron IIC types appear out of context. Could those midway forms be missing links between the Iron I and Iron IIC forms? Typological processes suggest that one can at least hypothesize it.



4. This allows us to speak of “advanced” and “conservative” forms. If we have 20 pithoi and we know the basic trajectory of the vessel type’s development through time, we should be able to place those 20 pithoi in a continuum of typological development through time and even make some suggestions about their spatial connections. However, we must keep in mind that these are “typological” dates. Ceramic typologists can do no more than hypothesize about a ceramic date in such a situation.

5. The typological development of one specific type does not necessarily date the whole assemblage. In fact, the ceramic typologist needs to take all forms of vessels in the assemblage into consideration. Indeed, doing that may allow us to suggest even tighter dates than for the one type. Some of the vessel types in the assemblage may be more advanced than others, suggesting a slightly later date than the more conservative forms would suggest.

6. Like technological changes today, ancient changes did not isolate themselves with sharp breaks. Potters did not sit at their wheel one day and suddenly say to themselves, “Let’s quit making this Late Bronze Age pottery and start on Iron I.” All changes developed slowly over time and almost always had clear precedents. Everything that happens today (or, better, in our generation) is built on the events and developments of yesterday (or the last generation). For this reason it is often difficult to assign certain assemblages to specific time periods. Thus, we sometimes use the word “transitional” to characterize groups of pottery that have features of two adjacent periods. If we find an assemblage with vessel types from both the end of the Late

Bronze Age and beginning of the Iron I period, we may date it as the “LB/Iron I transition.”

7. Finally, we must realize that some vessel types can coincidentally “reappear” at other times. The vessel wares and even the forms of some Late Islamic types are very similar to those of the Early Bronze Age. Some Hellenistic jar and jug rim types are virtually identical to those of the Late Bronze Age. And open Mamluk lamps are almost identical to those of the Iron Age. Thus, a good ceramic typologist will know and understand the pottery of all periods, not just a few, so as not to be fooled by these similarities.

Ceramic typology is best at organizing a “sequence” of assemblages. Dating them is another step, usually using other forms of typology (writing styles, iconography, coins, etc.) and linking them to the historical documents of the empires, such as Egypt, the Hittites, Assyria, Babylon, Persia, the Greeks, Romans, and Islamic dynasties. But that is another story.

Sociology and Economics of Ceramics

Andrea Polcaro
(andrea.polcaro@unipg.it)

Just as archaeology is the science that allows us to understand the human past through the reconstruction of activities and traces left by people on the ground, so ceramics, the most common objects used by humans for more than six thousand years, can be considered one of the best indicators of the social and economic dynamics of ancient communities. It is even possible to say that society and economy reflect themselves through material culture. Changes in ceramics, in fact, are never fortuitous, but, on the contrary, they are always precise responses to the evolution of society, able to influence potters as well as consumers and users of pottery products. Ceramics appear, in the ancient Near East, in the so-called Pottery Neolithic Period, around 6400 BC, and it is thus connected to sedentarization and domestication processes (both of plants and animals). Nomadic hunting/gathering societies of the Paleolithic did not know ceramics, nor did the first Pre-Pottery Neolithic communities. The domestication processes in fact took thousands of years to be completed, with hunting/gathering activities that held their importance in the economy, while vegetal and animal species started to be selected and then domesticated. Pottery starts to be produced at the end of this process, when the economies of nomadic human groups changed forever, now well established in settled agropastoral communities. From that period onwards, the nature of social and economic changes has been visible through ceramics, both if stimulated from within the community or if raised from the cultural and commercial contacts between and among different groups on a regional

or international scale.

So, in the end, what is the role of ceramics in relation to society and economy?

CERAMICS AND SOCIETY

It is the differentiation within a pottery assemblage, in particular regarding vessels used in food or beverage consumption, that provides the first visible sign of the creation of a hierarchy within social relationships. The first elites in urban societies usually identified themselves through luxury objects or particular types of ceramics that were exclusive and different from the vessels used by the commoners. In particular this process concerns tableware, in settlement contexts, or specifically elaborated wares in funerary settings. The appearance of such “luxury” or “special” ceramic vessels in public buildings such as temples and palaces, as well as in monumental aristocratic tombs, can immediately be related to a specific sector of society, identified with a sort of “upper class,” with special roles in the organization of the community. In the perspective of Martin Wobst (1977), the material style is a cost-effective communication device to determine and to maintain social boundaries; the stylistic message and its target within the community can be recognized by means of a rational cost-benefit analysis of energy expended in the production of a specific style of objects (Stark 1998).

The differentiation in the types of wares and the presence of “luxury” vessels, identifiable through the fabric, manufacturing technique, surface treatment, or uncommon decorations (such as applied figurines),



can thus define the special role of a group of individuals, even if not immediately recognized as an upper class of a complex, stratified society. For example, in a Late Chalcolithic or proto-urban society, the presence of the same “special vessels” in a building, or an open area, can be evidence of cultic function. In this case, the qualitative analysis together with a quantitative analysis of the vessels, certifying the use of these ceramics by a restricted group of people, can assign them to a selected group of priests. If the same pottery types are recovered in a specific domestic sector of the same settlement, these dwellings could be attributed to a religious elite in charge of the rituals. This is the case with “cornet” vessels in Ghassulian societies, a particular type of cup, sometimes with painted decoration on the surface. These were recognized in the site of Tulaylat al-Ghassul through a quantitative and qualitative analysis of vessels used by the priests of the settlement to perform rituals in its main sacred area, such as in the private sector of the lower city inside buildings with painted walls interpreted as their dwellings or as smaller sanctuaries.

Much more complicated is the interpretation of the social dynamics when we look at the ceramics found in funerary assemblages. The special characteristics of this context, full of ideological meanings, do not allow an interpretation of particular vessels, part of the funerary goods, as the effect of a social differentiation connected to the status of the deceased. The presence of differences in the ceramics from funerary assemblages of the same cemeteries, in fact, could reflect many social attributes, not only those directly related to a “rank” concept, proper to

fully developed urban societies. The ceramics assemblage, like funerary architecture, the tomb type, or the burial ritual, can give important information about a “special” situation surrounding the death of an individual. Particular vessels placed in a grave, different from the other assemblages discovered in the same funerary areas, could be an important indicator of particular taboos or religious ideologies, or of differences in gender or age of the deceased, as well as of specific social attributes of an individual. In this regard, ethnicity plays an important role; usually particular pottery vessels could be associated with an external group of people without kinship lineages with the local families, representing migrants from other geographical areas, settled in another land and then radicalized inside the same society. Since that pottery is a reflection of the life of a specific group of people, looking at the differences of the ceramic assemblages connected to a specific group of burials can thus be crucial for the identification of cultural and ethnic identities.

Referring to the sociology of ceramics, the topic of ethnicity initially captured the attention of archaeologists trying to delineate a theoretical approach to the study of material culture. Ian Hodder (1979) proposed that frontiers are more strongly marked by means of material culture between ethnic groups in a state of economic or social stress. Michael Dietrich and Ingrid Herbich (1994) recognized a problem in this theoretical approach, related to the limited attention paid to the distinction between the social context of production and the social context of consumption. In particular, these scholars use ethnoarchaeological

research to explore the complex relationship between these two different social contexts to delineate the social meanings of ceramics. They recognize “micro-styles” in pottery production, distinguishable based on different characteristic combinations of formal and technical decorative traits. These styles reflect the several communities existing inside a common, large ethnic group, linked to each other with tribal kinship ties. Thus, the micro-styles can be considered the result of traditions of production within potter communities that are socially acquired dispositions, the perception of what is possible in decorative, formal, and technical choices made at each stage of production.

Looking to the distribution of the ceramic micro-styles in ethnographical contexts, M. Dietrich and I. Herbich (1994) noted that many cut across relevant ethnic and/or sub-tribal boundaries, with a clear preference demonstrated by consumers for the pots produced by potters of their own group. This means that sometimes the differences in micro-styles can be related to other social dynamics: the one of ethnicity and the one that considers the two contexts, production and consumption, as a reflection of different social dynamics in the same human group. Thus, the relationship between ceramic styles and social boundaries is never entirely clear, in particular in the absence of other historical data concerning the society that produced those kinds of pottery differences. However, in archaeological research, the primary goal in studying formal ceramic variations across space is mostly to identify social groups, whose boundaries are considered to be marked by distinctive patterns



in the archaeological record. In this regard, unlike the European schools of archaeologists, the Anglo-American ones have continually refined various techniques for undertaking spatial analysis and interpreting distributional patterning, even if most of the New Archaeologists and Processual Archaeologists believe that distributional patterning in the archaeological record could not be automatically equated with ethnic or ethnolinguistic (ethnic/language) groups of the past (Trigger 1989; Binford 1965). In this regard, very important is the social scale of the entities whose boundaries research is exploring. Comparisons with ethnographic studies on “primitive” societies show, in fact, the determination of specific styles in ceramics identifying entities larger than villages, but smaller than regions, cultural areas, or ethnic groups. These communities, rarely identified by archaeologists, could create a particular patterning of social relationships, less understandable from the architecture or settlement patterns, that only pottery analysis might be able to determine.

Finally, despite the difficulties in the determination of social groups, in particular related to ethnolinguistic differences, the search for social boundaries in ceramics patterning inside a community, in a micro-scale dimension, and inside larger cultural areas, on a macro-regional scale, could be, if properly conducted, a very productive scientific research area.

CERAMICS AND ECONOMY

Another important aspect of ceramics is its capacity to reflect the economy of a society, mostly in relationship to food production systems

and the type of economic organization of human groups. The first important data that archaeologists could obtain from ceramics is the nature of the nutritional system of a community, in particular concerning the main economy of subsistence practiced by the people, if agriculture or herding. After the Neolithic Period, from the Chalcolithic and Early Bronze Age periods, these different economic forms of subsistence tend to be mixed in settled communities, but different ecological areas can determine different kinds of economies or the percentage of one economy above another. In this regard, the wares related to cooking or storing activities can be useful in the definition of these production activities. In particular, storage and cooking ware, if analyzed from a functional point of view, could give important data about not only what kind of food was cooked and preserved for consumption but also its production. For example, in the Chalcolithic Period some specialized ceramic types are connected to the production or conservation of specific products. This is the case with torpedo jars, interpreted as vessels for the transport of olive oil, an important product discovered in the southern Levant in this period, which will be very important in the economies of communities on both sides of the Jordan River during the Early Bronze Age and beyond. Another specific product are the so-called churns, probably related to butter preservation but also production. In fact, the same kind of vessels can also be part of the transformation process typical of certain foods or beverages, such as the fermentation process of wine, the decantation process, including the separation of olive oil from water,

or more active processes such as the straining phase in the production of butter, cheese, and yogurt. In this last case, the identification of a vessel used for such activities could be made by the presence of a particular characteristic, such as a perforated strainer. Sometimes the identification of the food produced, cooked, or preserved inside ceramics is much more difficult to determine, in particular in the case of a multifunctional vessel, such as hole-mouth jars, very common in the Early Bronze Age in the southern Levant. This kind of pottery is attested for use in several kinds of activities and can be included sometimes in storage vessels, sometimes in cooking ware. The simple ware can also be used to understand major consumption activities and related products, but in this case, the potential is much less useful than in the case of social-context identification, through the analysis of technology and style.

These last types of analysis are in any case very effective in determining the presence of imported ceramics that, from an economics point of view, could be an indicator of a commercial relationship. Products, in fact, travel in containers and are usually distributed inside specific vessels produced by potters in the place where the products were originally made. In archaeology, it is well known how strong the role of trade could be inside the economy of a community. The establishment of new commercial routes could open a society to other groups, often with different levels of development. This process can stimulate internal evolution in a community, especially in relation to the economy, with the growth of a certain product, the trade of which could permit the birth of an



elite segment inside the society able to organize the overproduction to export the product itself. This is called the “secondary urbanization process” in the ancient Near East. The use of ceramics to identify the commercial relationship between different cultures and communities is thus a very important tool for distinguishing the economic dynamics behind the spread of the proto-urban and then fully urbanized societies. The presence of clearly imported vessels could be evidence of both the presence of foreign people within a settlement as well as the proof of a commercial relationship among distant and different areas. The subtle distinction between the two can be answered, thanks to the analysis of pottery types and archaeological contexts.

In fact, commercial products are normally contained in storage jars or containers, while foreign pottery of simple ware used for consumption could be related to the presence of a foreign group of people.

To conclude, one of the most important aspects to be considered concerning the economy and ceramics is that the demand for a new product in a community can produce an increase in the requirement for provisioning the group with an adequate supply of vessels. This means that each new product produced by the community requires the creation of new pottery shapes. Conversely, each new vessel identified in an archaeological sequence could indicate the addition of a new system of storage, new ways of processing food, or, as already noticed in the previous paragraph, the presentation of cooked food as an emergent social expression. This concept has been stressed as a “supply–

and–demand process” (Brown 1989). In this theory, the mediations between the supply and the demand in a society produce the variables of production and consumption, leading to the creation of new wares.

Sourcing Clay

Gloria London
(glondon18@gmail.com)

Pottery consists of microscopic clay particles that derive from a wide variety of rocks. Over millions of millennia, the parent rocks decompose into clay due to chemical action and weathering. The resulting accumulations of white, gray, red, or brown firing clays are distributed throughout Jordan. If the deposits remained where the original rock stood, they form a primary deposit of residual clays. Alternatively, clays traveled considerable distances by air or water activity and eventually became mixed with rocks, minerals, and organic matter. Primary clays, such as kaolin, accommodate thin-walled, decorated, and wheel-thrown pottery. Secondary deposits characterize most clays region-wide and are ideal for shaping thick-walled jugs, jars, cookware, etc., made by coiling or with other techniques. After being shaped, clay fired in a kiln or pit becomes rock hard, but highly breakable, which led to the steady demand for new pots.

Pottery made in different geographic regions differs mineralogically and chemically, depending on the rocks from which the clay derived. For example, sandstone characterizes southern Jordan, versus the northern volcanic outcrops, and the wide-spread distribution of sedimentary rocks. In geological terms, clay resources abound in Jordan. Despite the abundance, however, a clay deposit suitable for some potters might not accommodate others depending on their manufacture technique.

After mining clay from the earth, the potter processed it into a malleable, soft, material, termed the clay body. It consisted of the microscopic clay

particles plus the rocks or minerals that entered the clay either prior to its deposition or afterwards were added by the potter. To the unaided eye, the rocks and minerals usually resemble light- or dark-colored specks, rounded, angular or irregular in form. When viewed under a microscope the rocks can be identified to precisely determine the constituents of the clay body for the purpose of learning the source of the clay.

After identifying the rock fragments such as calcite, quartz, basalt, etc. and knowing that clays varied regionally depending on the geological make-up of the bedrock, the question remains how potters processed their clay body. Were the rock or other inclusions (also termed non-plastics, tempering material, or grits) mined with the clay or added to it? Did potters bring sandstone, calcite, or other material from elsewhere to add to their locally mined clay? Potters manipulated raw clay by adding to or subtracting from it. First they removed the larger rocks that normally are mined together with the clay. Sometimes they added specific rocks or minerals, organic materials, or grog to improve the quality or performance of a clay. For example, grog refers to tiny fragments of intentionally crushed pottery. It has been added to raw clay since Neolithic times. Grog can refire without damage and is the choice additive of modern potters. In contrast, calcite and limestone inclusions, depending on their size, can decompose when fired. Organic materials, such as cattails, dung, seeds, or straw enhance clay plasticity, reduce shrinkage during drying and firing well, and create a lighter weight pot than rock inclusions.



To determine the origin of a clay body requires an assessment of clay preparation prior to use. Petrographic analysis can reveal how the inclusions arrived in the clay. Rocks with angular edges, resulting from intentional crushing, were introduced to the clay body, especially if they were sifted to remove fragments above a certain size. People could sift raw materials through a basket or a piece of leather with slits cut into it. Grog fragments, rounded or angular, were always an intentional additive. Organic materials can fall into clay, but large quantities of seeds or dung were a deliberate addition. Potters sometimes removed the rocks that were native to the clay before they added specific inclusions which were often smaller and thought to benefit the manufacture, firing, or performance of a pot. The elimination of rocks or minerals native to the clay can be achieved by dry sifting or by slaking in water. When raw clay is poured into a vat of water the rocks sink to the bottom and the fine clay particles rise to the top. Beneath the clay slurry the accumulated layer of rocks can be discarded. The process can be repeated to remove even smaller rock fragments but requires large quantities of water.

To add any prepared crushed rock, grog, or organic substance to clay required laborious efforts to assure an overall even distribution. Poor mixing created a clay body that was difficult to shape, dry, or fire successfully. Rather than alter the clay, potters might adapt their manufacturing technique to accommodate the available raw material. Traditional potters today, who build cookware or water jugs and jars by hand, often use the clay as found in nature after removing only the largest

rocks. Another strategy of traditional potters worldwide calls for mixing two clays together to benefit from the qualities inherent in each.

Mineralogical and chemical tests can determine the origin of clays. With a microscope, geologists identify the rocks and minerals before point-counting the different grains and measuring their sizes and shapes. The prevalence of sedimentary rock formations in the region makes it difficult to pinpoint their derivative clays based on the mineralogical components alone. One solution involves the heavy mineral analyses of the rare elements. Another approach involves assessing the chemical elements through X-ray diffraction and instrumental neutron activation analysis (INAA). Each clay has its own “signature” concentration of elements which allows it to be traced to its parent rock.

Choosing an appropriate test to address the provenance of a pot depends on the type of pottery and the question being addressed. Petrographic analysis of cookware (or other coarse pots) excavated at a site can demonstrate the presence of one or multiple sources. When compared with similar pots excavated elsewhere, the findings address where pottery was made in any given time period, as well as local, regional, interregional, or long-distance trade. Fine wares tend to require chemical analyses.

Clay is a natural resource, free for all unless it lays on land controlled by an individual or entity. Until the early 20th century traditional potters would present a landowner with one of every ten pots produced from the clay mined on his property.

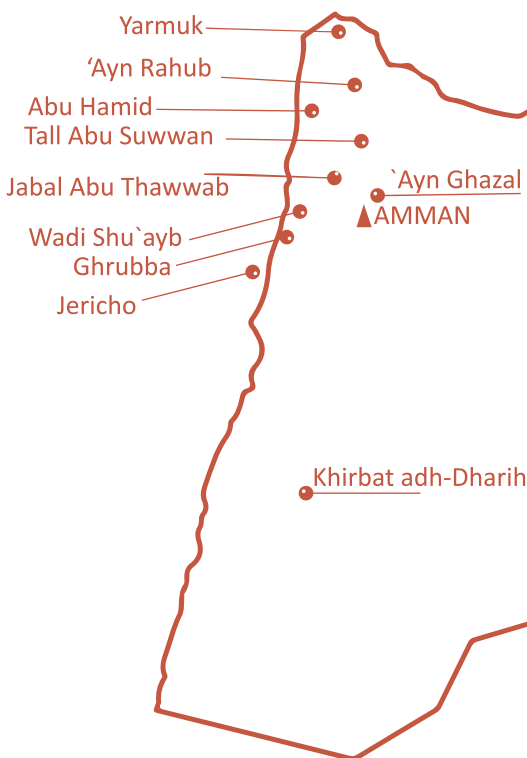
PART 2

POTTERY BY ARCHAEOLOGICAL PERIOD

The Pottery Neolithic Period

Zeidan Kafafi
(zeidan.kafafi@gmail.com)

MAP OF JORDAN The Pottery Neolithic Period 10,000–4,500 BC



The pottery of the Pottery Neolithic (PN) in Jordan might be dated to two different subperiods: the Late Neolithic 1 (ca. 5600–5000 BC) and the Late Neolithic 2 (ca. 5000–4500 BC), uncalibrated dates. The table below shows that the Late Neolithic 1 can be classified into three main groups: the Jericho IX (PNA), the Yarmoukian, and the Ghrubba. Meanwhile, the Late Neolithic II includes Wadi Rabah and perhaps Jericho VIII (PNB), since most scholars consider these types of utensils and ware to be dated to the period ranging from 4500 to 4000 BC and to represent the earliest phase of the Chalcolithic Period.

The Late Neolithic (Pottery Neolithic) Period is characterized by more highly developed stone and pottery industries than previously known. The Late Neolithic pottery utensils were found in pits dug into either earlier courtyards or in storage pits and on the floors of houses.

THE LATE NEOLITHIC I POTTERY ASSEMBLAGES

The first discovery of Pottery Neolithic pottery vessels was made in 1976 by Thomas Raikes at the site Dhra' (Raikes 1980: 40, 50–61). The site is located ca. 15 km north of the most famous Early Bronze Age site of Bab adh-Dhra'. The site was then sounded by Chrystal Bennet in 1979 (Bennett 1980:30). This kind of pottery was later found at other sites such as 'Ayn Ghazal (Kafafi 1995), Wadi Shu'ayb (Simmons, *et al.*), and Khirbat adh-Dharih (Bossut and Kafafi 2005).

There is a great similarity of the surface treatment between the PNA,



Yarmoukian, and the Ghrubba Wares. However, the PNA and the Ghrubba vessel repertoires are characterized by having painted decorations, the Yarmoukian pots have incised and painted motifs. Below, we present a discussion for each fabric.

A. JERICHO POTTERY NEOLITHIC A/IX (CA. 5600–5000 BC)

The largest assemblage of Jericho PNA pottery came from two sites: Khirbat adh-Dharih (Bossut and Kafafi 2005) and Dhra' (Bennett 1980). Moreover, well-stratified PNA pottery sherds were excavated at 'Ayn Ghazal (Kafafi 1990; 1995) and Wadi Shu'ayb (Simmons, *et al.* 1989; 2001).

Technique: handmade (either coiled or strapped.) Surface Treatment: plain, red-painted (triangles, bands), slipped (creamy), and highly burnished.

Forms:

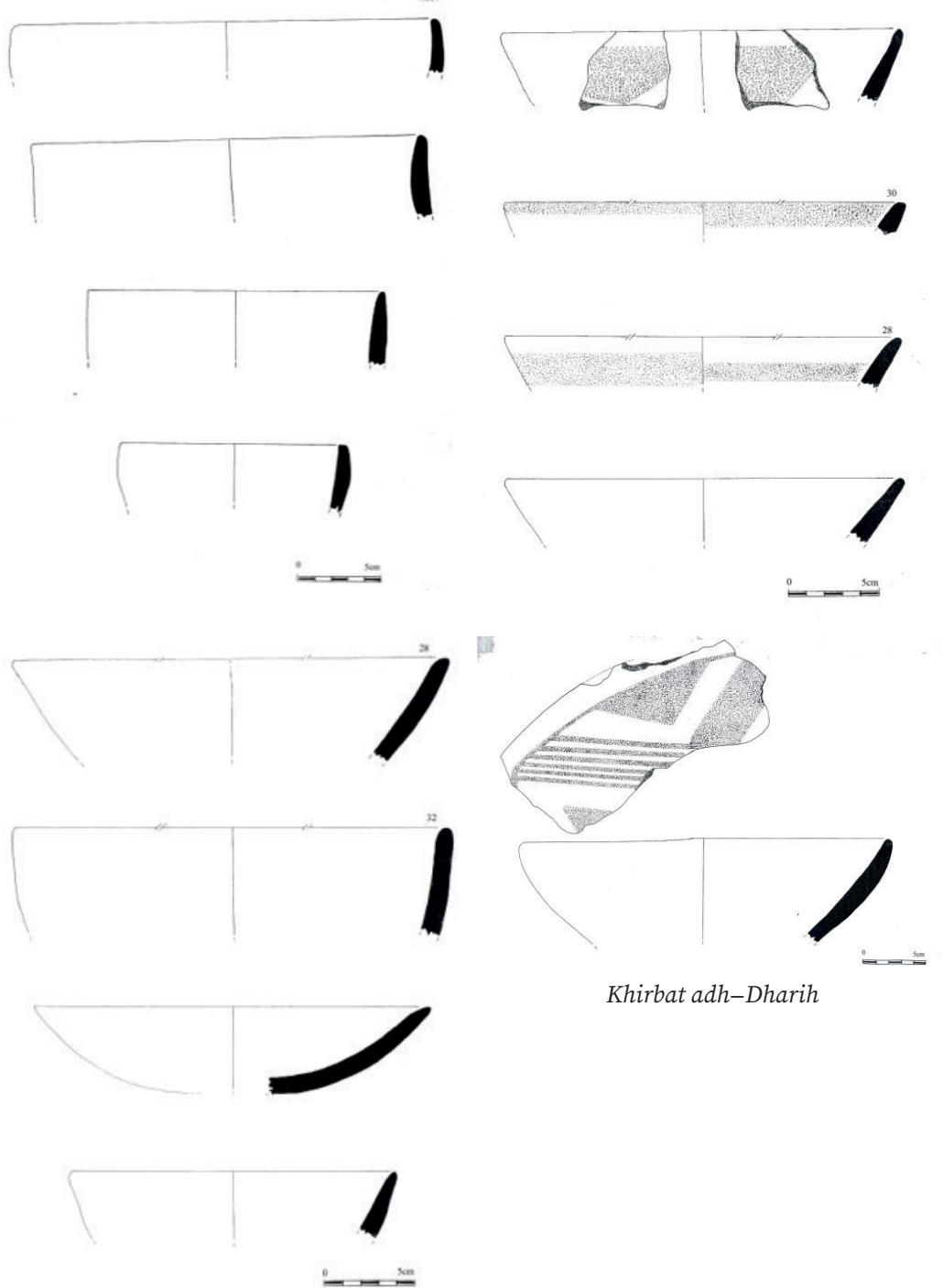
a. Cups.





Khirbat adh-Dharih

b. Bowls: simple and deep (both red painted).



Khirbat adh-Dharih



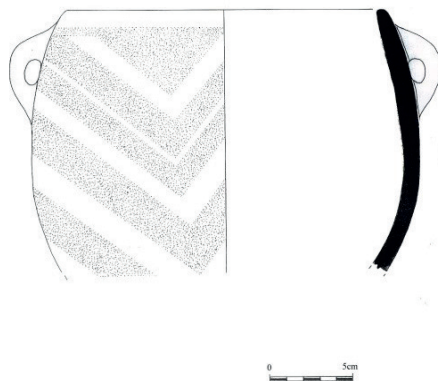
c. Jars: small, necked, and holemouth



Jericho



Khirbat adh-Dharih



Khirbat adh-Dharih

D. Handles: knob, lug, loop, and ledge.



Khirbat adh-Dharih

E. Bases: flat and rounded. Khirbat adh-Dharih



Khirbat adh-Dharih

B. YARMOUKIAN POTTERY CA. 5600–5000 BC

The first Yarmoukian pottery sherd occurred in Jericho (Sellin and Watzinger 1913: Pl. 21: F3); this was followed by others at Megiddo (Tall Mutsalem) in the 1930s (Loud 1948: pls. 1–3).



In Jordan, the first appearance of the Yarmoukian pottery vessels was at the site of Jabal Abu Thawwab (Kafafi 1988; Obeidat 1995) then at the sites 'Ayn Ghazal (Rollefson and Simmons 1986; Kafafi 1990); 'Ayn Rahub (Kafafi 1989), Wadi Shu'ayb (Simmons et al. 1989; 2001), and recently at Tall Abu Suwwan (Al-Nahar and Kafafi 2015).

Techniques: handmade (coiling), basketry.

Ware (Fabric): friable-coarse, fine, dark-faced burnished.

Inclusions/temper: straw, mineral (basalt, limestone and quartz).

Surface Treatment: plain, slipped, slipped and burnished, incised (herringbone), notched, incised and painted, painted (red, brown).

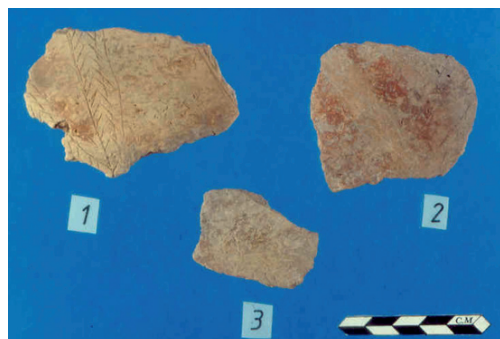
Forms:

a. Cups.

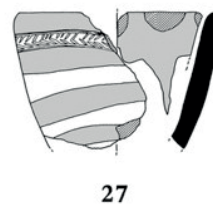
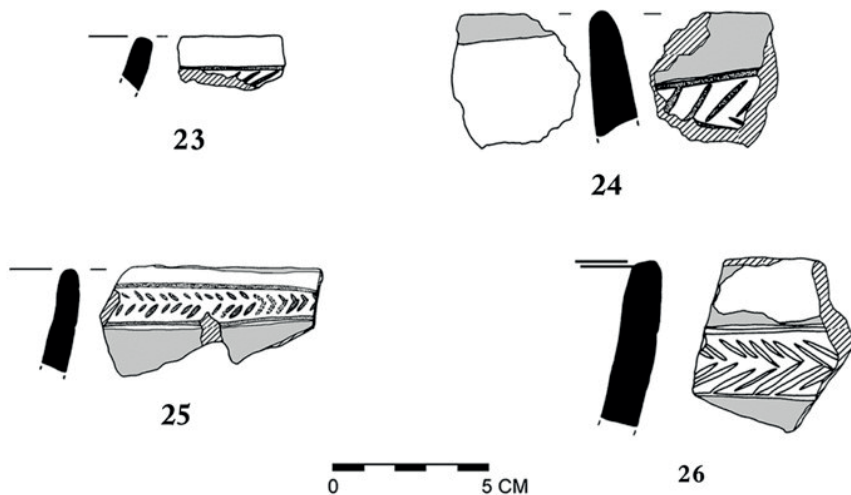
b. Bowls:

1. Simple.

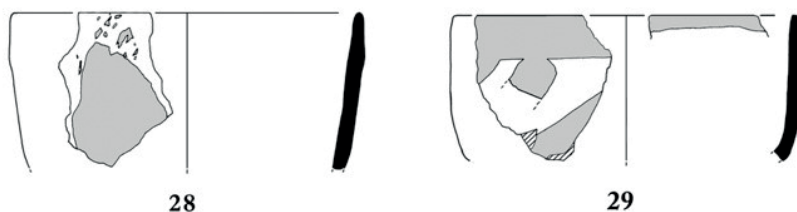
2. Deep.



'Ayn Ghazal

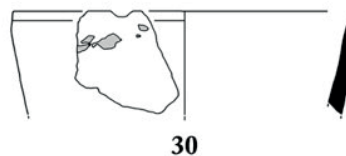


27



28

29



30

0 5 CM



Pottery Cups and Bowls from Tall Abu Suwwan (Al-Nahar and Kafafi 2015)

c. Jars:

1. Necked.



Sha'ar Hagolan (Palestine)

2. Holemouth.



Abu Thawwab

Handles: knob, ledge, lug, and loop.
Bases: disk, flat-ring, flat, rounded.

C. GHRUBBA POTTERY (CA. 5500–5000 BC)

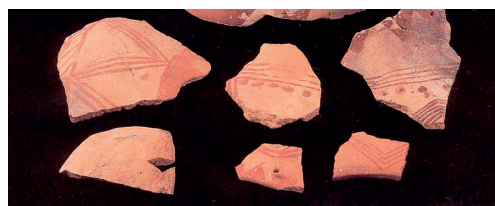
James Mellaart sounded in 1953 the site of Ghrubba located on the southern bank of Wadi Nimrin, approximately 2 km west of the police station in the town Shuna South (Mellaart 1956). In this sounding Mellaart encountered red and brown painted pottery sherds, which he assigned to the Pottery Neolithic Period. During the last decades more assemblages of this type were found in Jordan, such as at: Abu Hamid (basal levels), Ghrubba (levels 5–15, Abu Thawwab (mixed with the Yarmoukian), and 'Ayn Ghazal (excavated in the Yarmoukian levels) (Kafafi 2011).

Technique: all Ghrubba pottery vessels are handmade.

Ware (fabric): coarse, usually hardly fired.

Inclusions: straw, grits.

Surface treatment: plain, painted on both exterior and interior surfaces, red or brownish group of lines, triangles and dots, burnished, mat impressions on bases.



Forms:

a. Cups: painted band along the rim with another pattern below it.

b. Bowls: straight sides, curved profile, flat bases, pedestalled.



Ghrubba



Ghrubba



Abu Hamid



Abu Thawwab



Abu Hamid



Abu Thawwab



Abu Thawwab



Abu Hamid



Abu Hamid

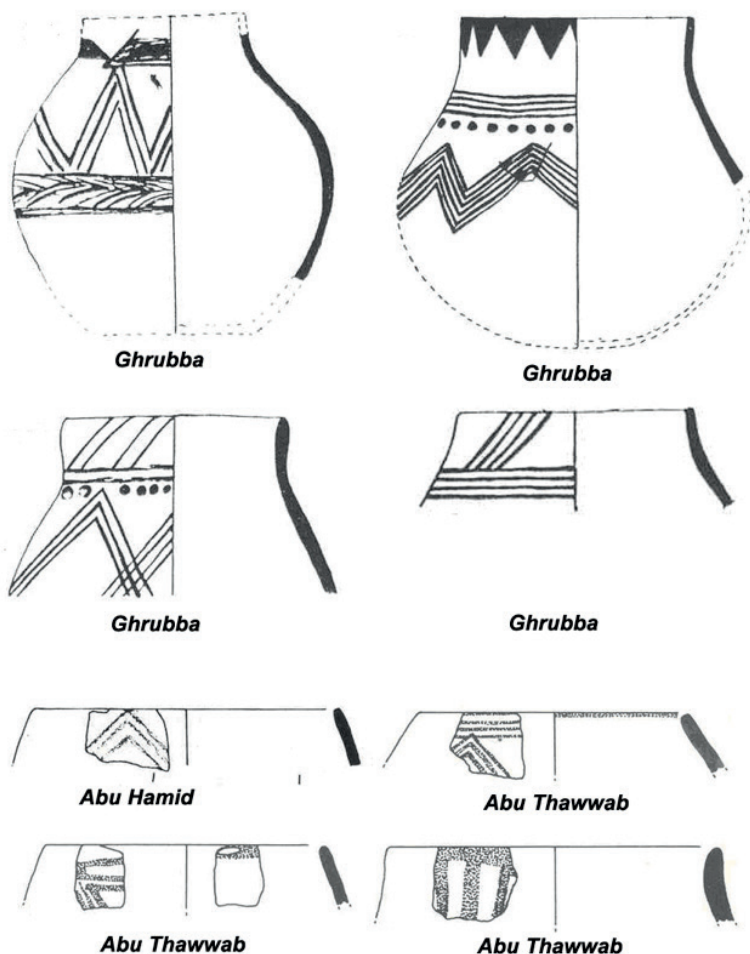


Abu Thawwab

(After Kafafi 2011)



c. Jars: holemouth: knob, lug and ledge handles, painted.
Necked: straight-necked and bow-rim jars.



(after Kafafi 2011)

d. Spoons.

Handles: knob, lug, ledge, and loop.

Bases: disk (cups), ring (cups), flat (bowls and small jars), rounded (bowls and jars), pedestalled (bowls).

D. POTTERY NEOLITHIC/EARLY CHALCOLITHIC POTTERY (CA. 5000–4500 BC)

A. Wadi Rabah Pottery

The site of Wadi Rabah was sounded during the 1950s by J. Kaplan (1958) who identified the excavated material as "Wadi Rabah Culture."

During the 1980s several archaeological sites in Jordan (Abu Hamid, Abu Thawwab, 'Ayn Ghazal, and Wadi Ziqlab (Tabaqat al-Buma) yielded small assemblages of this type of pottery.

Technique: all pottery is handmade.

Surface treatment: smoothed, slipped (red and black), burnished (common), notched, incised, combed, matting, painted, applied motifs.





Wadi Rabah Sherds from Abu Hamid

Ware (fabric): coarse, medium, thin.

Inclusions: mineral.

Forms:

a. Bowls:

1. Deep bowls:

a) Small deep carinated: thin walls, pointed or rounded rims, rounded bases, black slip and burnished, few red slip.

b) Large deep carinated: red slip and burnished.

c) Spouted deep bowls: very few rounded walls.

d) Flaring rim deep bowls.

2. Shallow bowls:

a) Shallow incurved: rounded wall, red or black slip, burnished, notched

b) Shallow rounded open bowl, rounded walls, handle red slipped, burnished.

c) Shallow carinated bowls: thin walls

d) Shallow bowls with straight walls.

b. Basins/Large bowls: Undecorated, decorated.

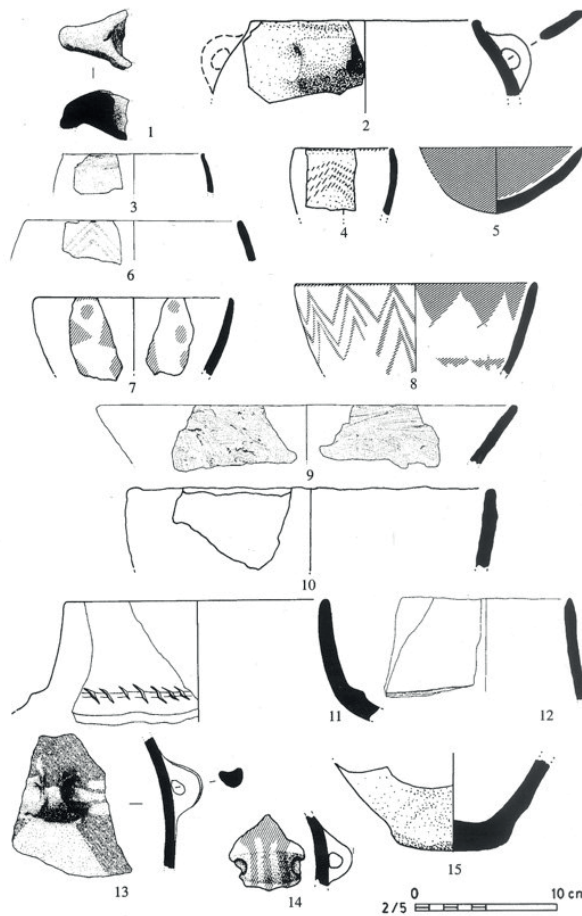
c. Chalices: massive, hollow base, sides widening at the bottom, red-slipped and burnished. Flat and thick rims.

d. Stands.

e. Pithoi:

1. Holemouth.

2. Open pithoi/large deep bowls.



Wadi Rabah Pottery from Tall Abu Hamid/Middle Levels (after Lovell, Dollfus and Kafafi 2004: 267)



f. Jars:

1. Holemouth: simple, rounded or pointed rims. Handleless, red or black slip, some burnished.
2. Necked: bow-rim, red or black slip, burnished.



Abu Hamid/ Middle Levels (Photo by Yusef Zu'bi)

g. Handles: lug, pierced knob, ledge, loop.

h. Bases: flat, disk, stand, convex, ring, mat-impressed.

i. Spoons.

E. JERICHO POTTERY NEOLITHIC B/VIII (CA. 4500–4000 BC)

Yosef Garfinkel considered the Pottery Neolithic B pottery to represent the Early Chalcolithic period (Garfinkel 1999: 104). However, scholars are still disagree as to whether this kind of pottery should belong either to the Late Neolithic 2 or the Early Chalcolithic. During the second half of the last century several pottery vessel assemblages were encountered at sites in the Jordan Valley (Tall ash-Shuna North, Tabaqat Fahl (Pella), Abu Habil, Abu Hamid and Tulaylat Ghassul), the south of Jordan (Dhira', Tall Wadi Faynan), and in the high mountain ranges (Sahab). Below, we present a brief study discussing this type of pottery.

Technique: handmade (coiling).

Surface Treatments: slipped, painted, incised, notched, smoothed, mat-impressed.

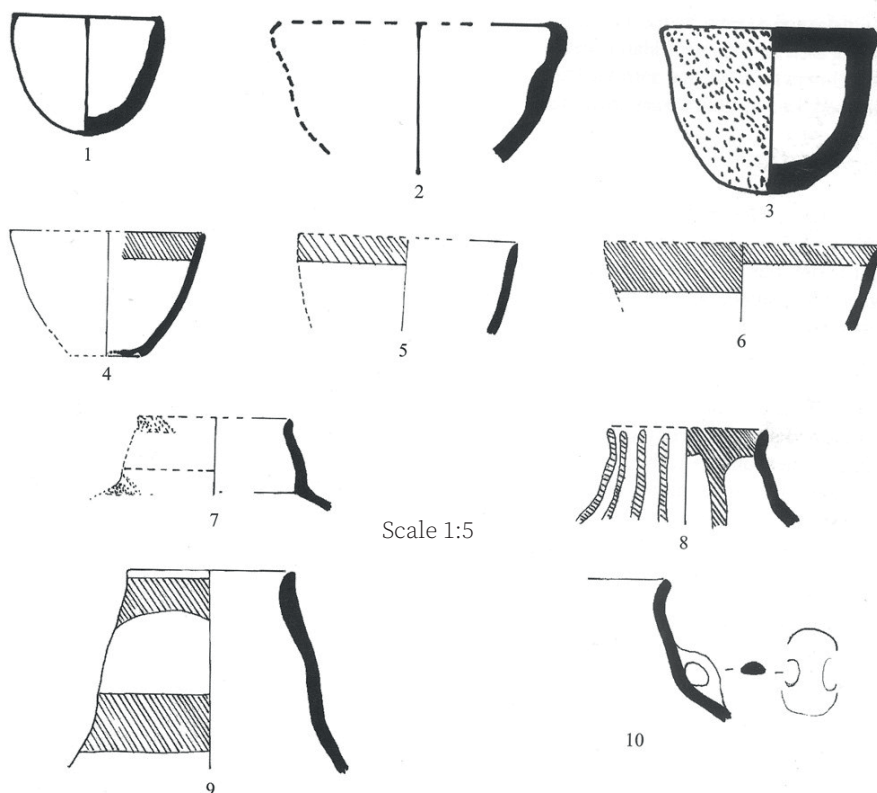
Ware (fabric): coarse, medium.

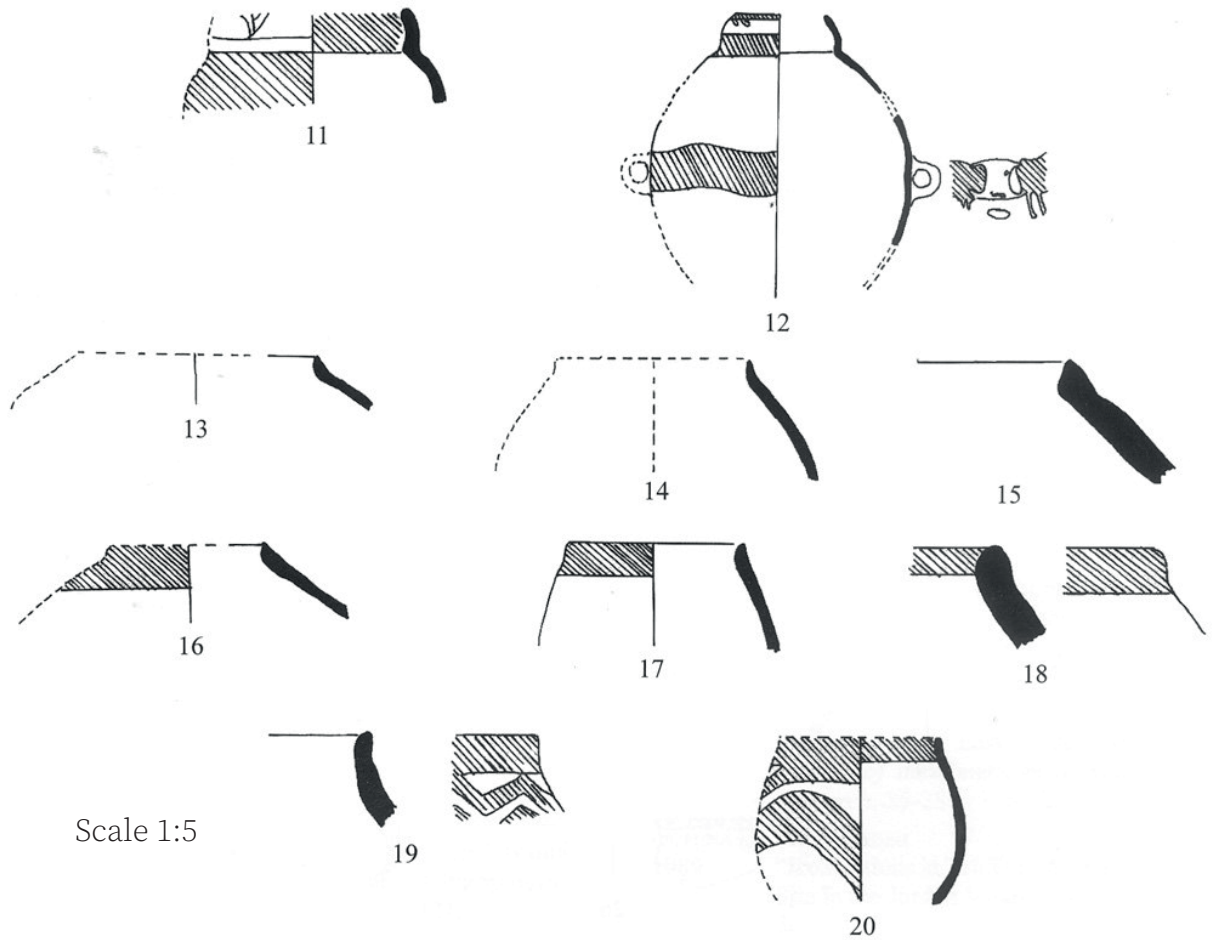
Inclusions: mineral (limestone, basalt)

Forms:

a. Cups: (red band on the rim)

b. Bowls: simple, deep, carinated, curved walls, pedestalled





(after Kafafi 2006)

PNB Pottery Pots from several sites in the Jordan Valley
(after Kafafi 2006: 78–79)

c. Chalices.

d. Kraters.

e. Jars:

1. Holemouth.
2. Spouted holemouth.
3. Necked.

f. Spoons.

Handles: knob, lug, ledge, and loop (strapped).

Bases: flat, flat mat-impressed, disk, trumpet, ring, rounded.

The Chalcolithic Period

Moawiyah Ibrahim
(moawiyahi@gmail.com)

JORDAN MAP
Sites in Pottery of Jordan
Manual
Chalcolithic Period
4,500-3,600 BC



With the beginning of the fourth millennium BC, new types of pottery tools and utensils emerged.

The continued growth of agricultural villages led to a surplus in agricultural production, resulting in the manufacture of large pottery vessels similar to those found at Tulaylat al-Ghassul at the northeastern corner of the Dead Sea. Pottery was also found in Tall Abu Hamid, which was used to store this surplus, in addition to the site of Tabaqat Fahl (Pella) and Sahab to the southeast of Amman, where the archaeological excavations found that the site was the largest settlement during the Chalcolithic period. In archaeological discoveries, the housing units and caves varied in their relationship with the Ghassulian civilization. These discoveries included flint and various pottery utensils and basaltic utensils (Ibrahim 1972, 23; 1974, 55–61, 1975, 69–82).

Pottery of this period has been widely found in Beersheba, Tulaylat al-Ghassul, Arad in the Negev, Beisan Stratum 18, the Umm Qatafa caves west of the Dead Sea, northern Fara'a Hill, Tall Abu Matar south of Beersheba, and Megiddo Stratum 19, in northern Palestine. The most important discoveries of pottery tools are large jars used for burials. The most important features attributed to this period are the conical vessels, which resemble animal horns. Some of these cones are decorated with colored ribbons, while some are distinguished by their short length and pointed base. Different incense burners and cups were also found. Sizes of pottery jars

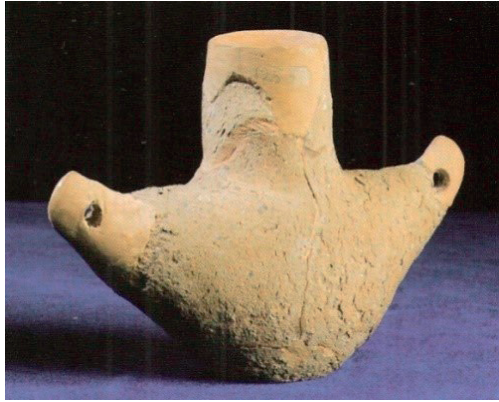
varied, including small and medium-sized jars without necks and huge jars that are large in size and characterized by rope decoration, which are strips of clay ropes added to the outside of the jar and fixed by pressing on them with the thumb to support the jar. Jar heights reached 1.5 meters and were most often used for storage purposes. Jars are also decorated by horizontal, parallel or wavy line threading. Decorations were made when the paste was soft, that is, before being fired and roasted, or making sunken decorations on the body of the jar with a fingernail or a stick of reed to give it a crescent shape. Spoons, ladles, and milk churns found at the site of Tulaylat al-Ghassul and Ghoraba were among the most important tools that characterize this period. The wheel was used in manufacturing utensils and pottery vessels, especially small cups where spinning effects of the wheel were noticed (Kafafi 1990, Bourke: 2008, 131).



Two spoons from Tulaylat al-Ghassul site (Kerner 2004 :78)



Two conical cups from Tulaylat al-Ghassul – (Kerner 2004: 78)



Churn from Tulaylat al-Ghassul (Kerner 2004 :79)



Vessels from Tall Abu Hamid



Storage of the surplus production from the fourth millennium BC



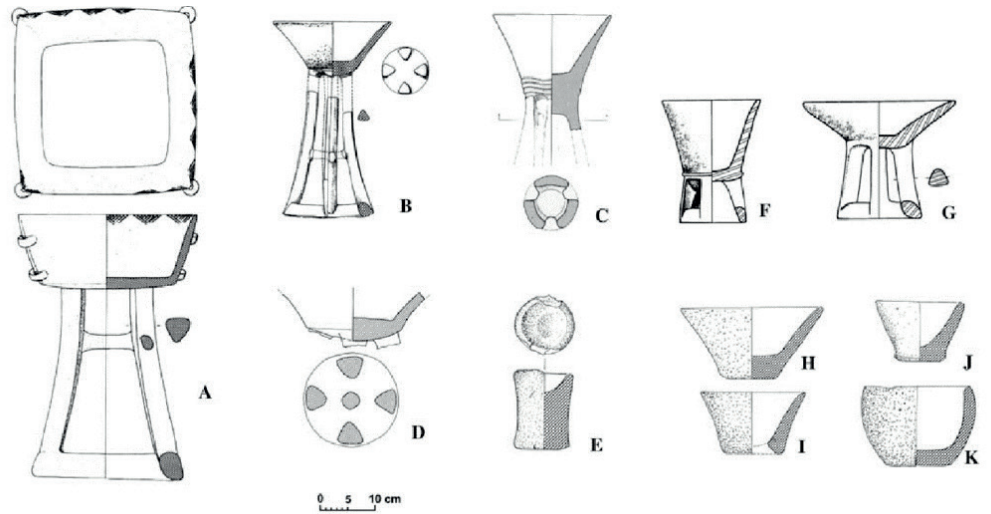
Storage Jars from Tall Abu Hamid



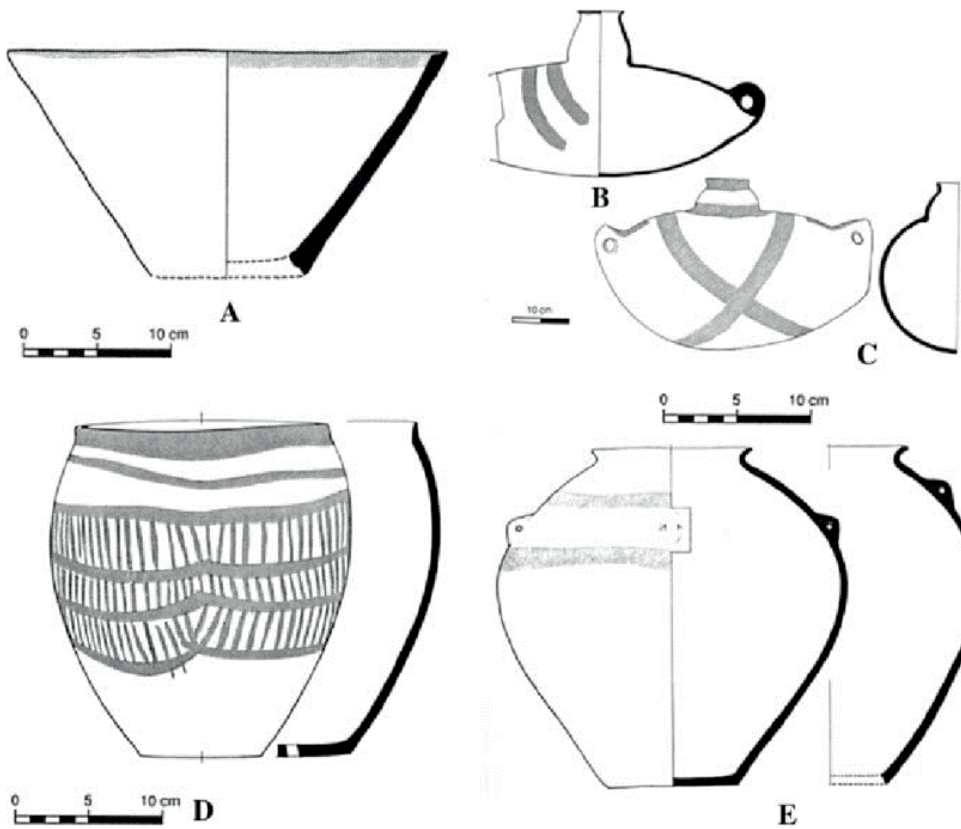
Storage Vessels from Tall Abu Hamid

These vessels appeared and spread to the Beersheba region, where small V-shaped bowls were found decorated with wide red lines around the neck, along with closed cups and bowls. Spindle-like vessels, cooking pots, and small and large jars were discovered.

Pottery vessels in the Beersheba region are distinguished by the so-called cream ware. These often appear in the shape of a vase with a small neck and a swollen body surrounded by a set of ear-like handles. Most of the vessels were handmade, although there are traces of the wheel on some plates, and the pottery is often easy to break because of being mixed with sand (Ibrahim 2010, Amiran 1969: 28).



Basalt vessels: This vessel (upper left) was discovered in a tomb. It is a unique square vessel from Givat. Such early vessels appear at sites from the Chalcolithic period.



Drawings of pottery from Bir al-Safadi near Beersheba.

The Early Bronze Age

Suzanne Richard
(richard@gannon.edu)
Marta D'Andrea
(marta.dandrea@uniroma1.it)

The Early Bronze Age in the southern Levant is traditionally described as a first experiment in urbanism that sees the rise (EB I–II), highpoint (EB III), and fall (EB IV) of urban centers—the longest continuous culture in the southern Levant (almost 2,000 years) until the Islamic era. In the new higher chronology, EB IA is now dated to ca. 3800–3400 calBC, EB IB to ca. 3400–3100 calBC. This longer period of time extends the critical development toward more complex village societies that evolved into the urban settlements of EB II. The revision has shortened EB II to ca. 3100–2850 calBC, but this was a crucial stage in the Early Bronze Age development of Jordan. EB III now dates to 2850–2500 calBC, which makes the EB IV period now 500 years long (ca. 2550–1920 calBC). The latter period, previously called a “dark age,” is now seen as a rural period that includes central sites and villages, some specialized, along with a range of pastoral activities. The new chronology has changed connections with neighboring Syria and Egypt (for specific information see the list of bibliographical references).

EB I

The EB I pottery of Jordan is characterized by continuing conservatism, seen by means of traits derived from the previous Chalcolithic tradition, and innovations that typify the period's new developments. Another characteristic is regionalism of pottery types, styles, and wares. In most regional areas of Jordan, multi-phase settlements with long stratigraphic sequences illuminate the development of pottery types and styles during this period.



EB IA

EB IA pottery is represented by stratified assemblages from Jabal Abu Thawwab, Tall al-Handaquq, Tall Umm Hammad, Jabal al-Mutawwaq, Tall Iktanu(?), Tall al-Hammam, Murayghat, the tell and the cemetery at Bab adh-Dhra', and Wadi Fidan 4.

In general, the pottery from this period tends to be quite coarse and mostly handmade, with a variety of vessel shapes in plain or red-slipped wares. They include different types of simple bowls of various sizes (Fig. 1: 1–3), high-loop-handled juglets (Fig. 1: 4), and various types of small and medium-size jars with two lug handles called amphoriskoi (Fig. 1: 5). “Holemouth” jars (Fig. 2: 1) and cooking pots, called this because they have no neck, are ubiquitous in the region and are mostly characterized by simple or upright rims in this phase. Necked storage jars and pithoi with everted rims are also widespread, both wide-mouthed (2: 2) and with restricted necks (2: 3). Matt-impressed bases (Fig. 2: 1) are found and ledge handles are frequent and either of the plain type (2: 2) or with thumb impressions on the o

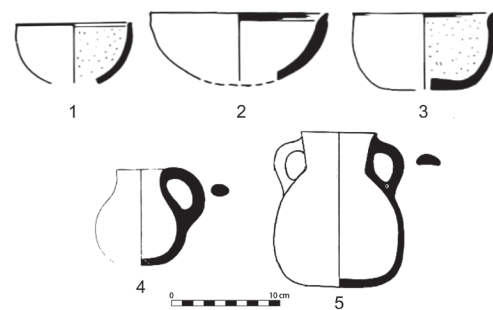
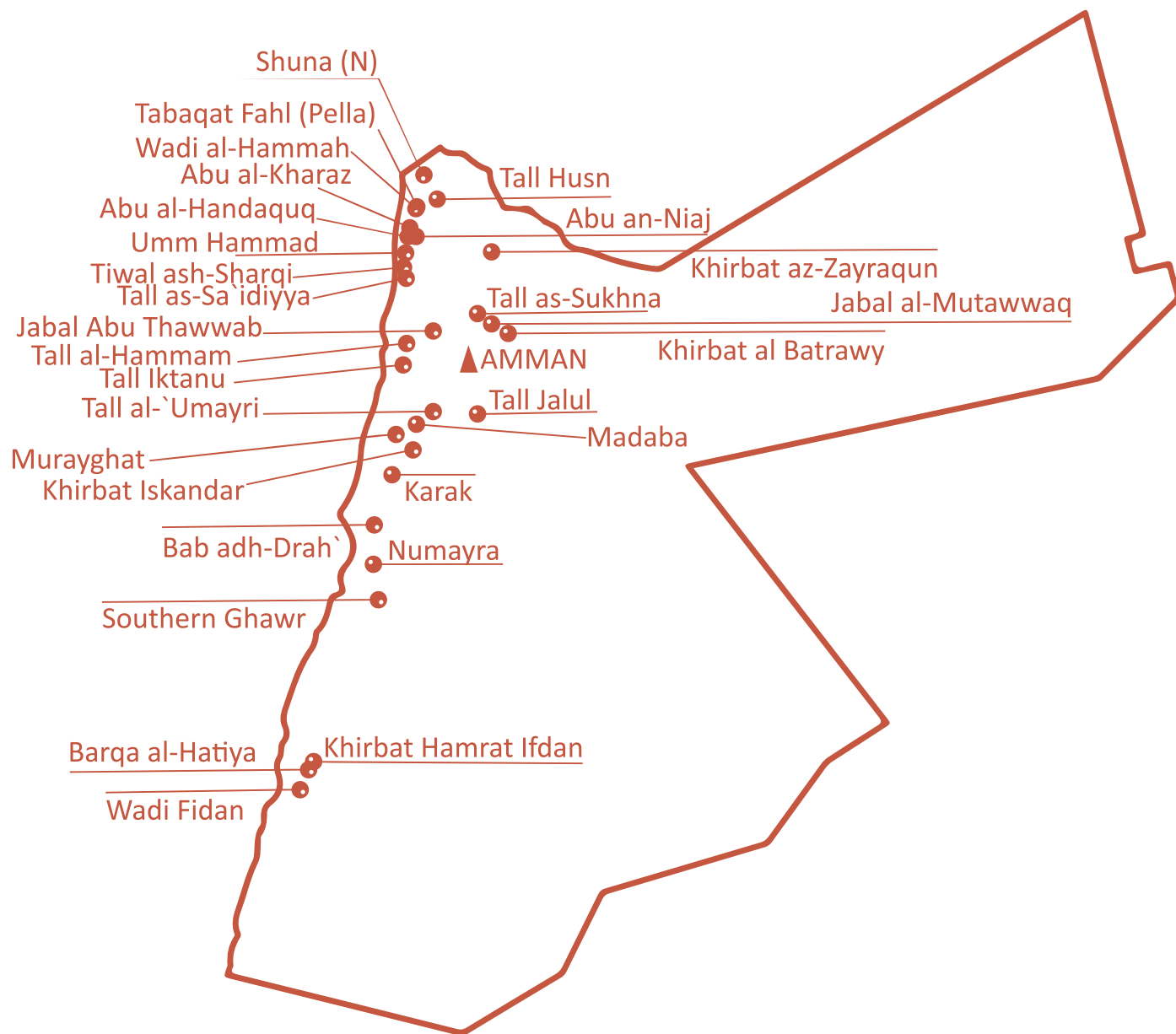


Figure 1 – Early Bronze IA; cups and bowls (1–3) from Tall Umm Hammad (after Helms 1986, fig. 10: 2, 4, 7); high-loop-handled juglet (4) and amphoriskos (5) from Bab adh-Dhra' tombs (after Schaub and Rast 1989, fig. 12: 4, 13).



JORDAN MAP
Major Sites
Early Bronze Ages
3,600-2,000 BC

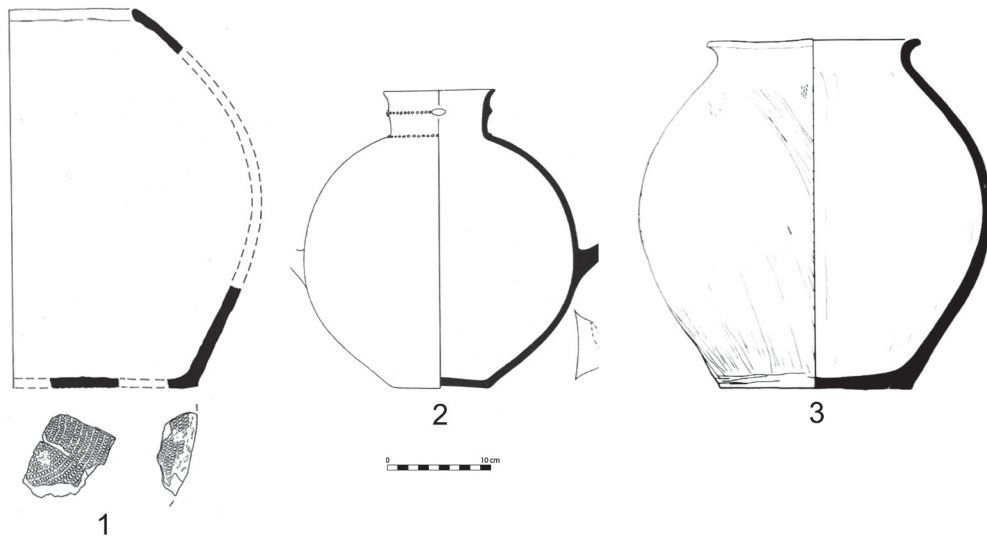


Figure 2 – Early Bronze IA; holemouth jar (1) with matt-impressed base from Khirbat adh-Dharih (courtesy of F. Villeneuve; © Yarmouk University, ArScAn, and IFPO); necked jars (2–3) from Tomb A 43 at Bab adh-Dhra' and the original source is Rast - Schaub 1989, fig. 134: 12, 16. Nos 4-5 are from MPP.

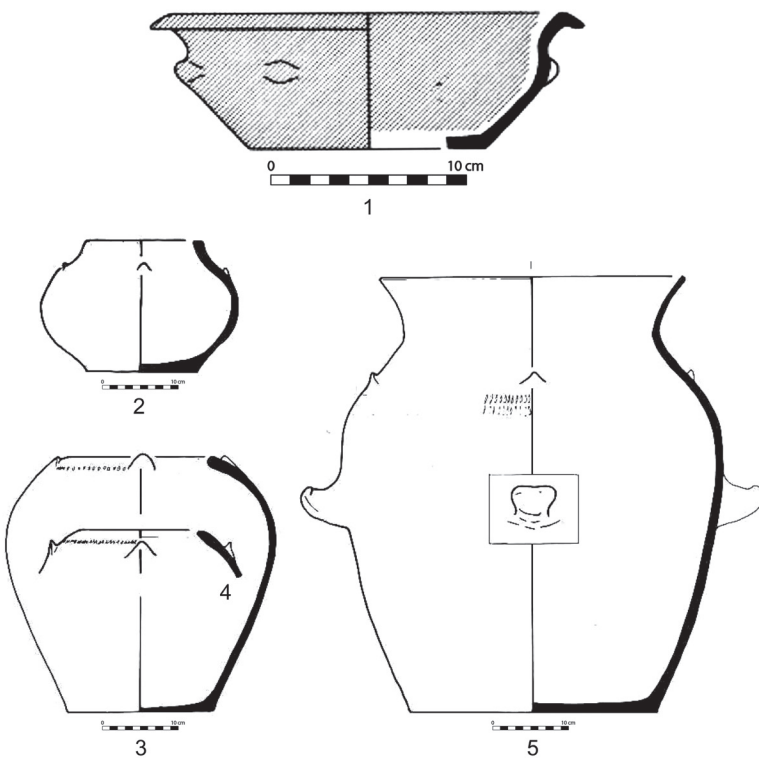


Figure 3 – Early Bronze IA; pottery from Tall Umm Hammad, Grey Burnished Ware bowl (1), "Jawa-type" vessels (2–4), and jar with ledge handles (5; after Helms 1987, figs 5: 1, 2, 6: 1, 8, 11: 1).

More localized developments find various classes of carinated bowls, either flat-based (Fig. 3: 1) or with fenestrated, pedestalled base; they have dark-colored surfaces and thick, highly burnished slip, often bearing plastic decorations such as knobs, conical projections, and ropes (Grey Burnished Ware). Likewise, there are distinctive holemouth (Fig. 3: 2) and necked jars (Fig. 3: 3–4) with multiple pushed-up lugs (called "Jawa-type vessels") (Fig. 3: 4–5), and necked jars with a peculiar type of down-turned handles (Fig. 3: 6). A particular type of deep bowl with everted rim decorated by a row of punctate incisions below the rim (Fig. 4) is typical only of the region of Bab adh-Dhra' and the southern Ghawr.

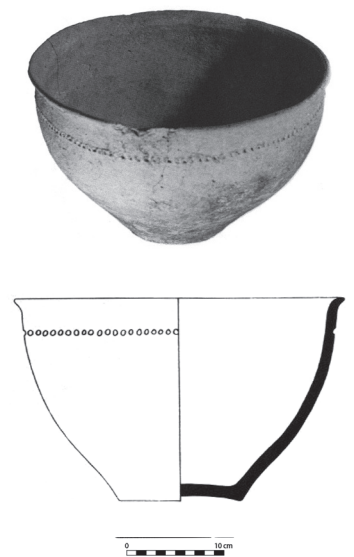


Figure 4 – Deep bowl with punctuate decorations from tomb at Bab adh-Dhra' (after Schaub and Rast 1989, fig. 20).



EB IB

The EB IB pottery is documented by the stratified deposits of Tall Umm Hammad, Jabal al-Mutawwaq, Tall Abu al-Kharaz, Tall Iktanu, Tall al-Hammam, Bab adh-Dhra', and from a tomb at Tiwal ash-Sharqi, a dolmen at Tall al-'Umayri and a tomb at Khirbat Iskandar.

This proto-urban phase was marked by improved technology and increased standardization. In general, there is typological continuity between EB IA and IB, but in this phase we may notice the appearance of red-slipped carinated platter bowls (Fig. 5: 1), the spread of high-loop-handled cups (Fig. 5: 2) and juglets (Fig. 5: 3–4–5), and handled jars with pillar-spout (Fig. 6: 1) and spouted vats (Fig. 6: 2), and the appearance of new styles.

Carinated bowls with projections may be related to the tradition of the previous period (Grey Burnished Ware), but in a poor-quality derivative ware class ("Crackled Ware"). Very distinctive vessels of the later EB I phase are holemouth and necked storage vessels coated with a white slip decorated with intersecting bands of red paint (a style called Band Slip Ware or Grain Wash Ware) (Fig. 7).

More localized developments can be observed in this phase too, e.g., very distinctive bowl, vat, jug, and jar types with typical plastic decorations, known as "Umm Hammad Ware" (Fig. 8: 1–3). Another distinctive type is the "Line-Group Painted Ware," characterized by groups of painted red-to-brown lines believed to imitate basketry; it is found on deep bowls, bottles, and amphoriskoi (Fig. 8: 4–5). A very distinctive duck-bill ledge handle appears, especially at Bab adh-Dhra' (Fig. 8: 6).

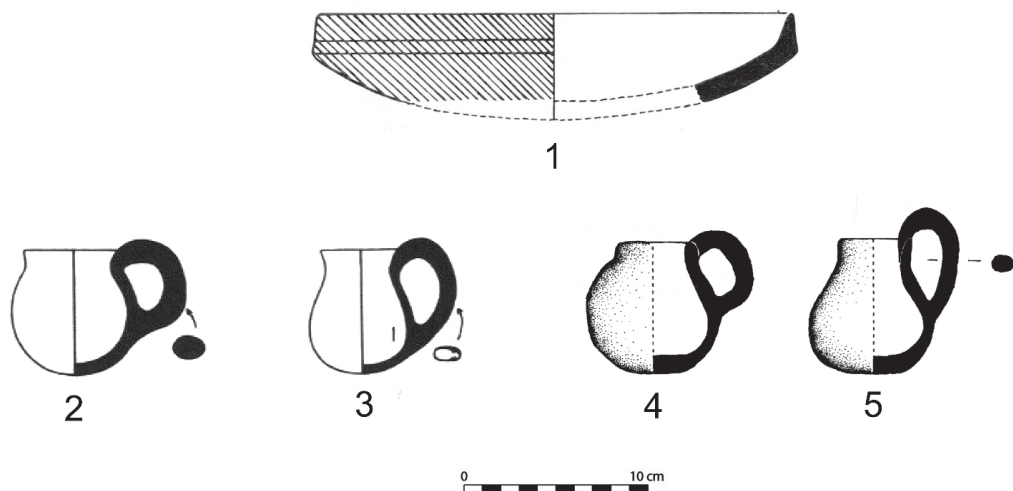


Figure 5 - Early Bronze IB; carinated platter (1) from Tall Abu al-Kharaz (after Fischer 2000, fig. 12.1:6) and high-loop-handled vessels from Bab adh-Dhra' (2 and 3, Schaub and Rast, 1989, fig. 134: 12, 16) and Tall al-'Umayri (4 and 5, courtesy of Douglas Clark and MPP).

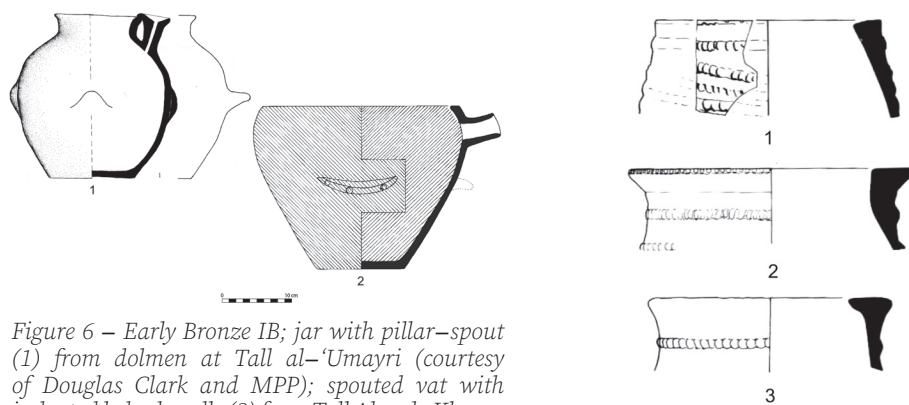


Figure 6 - Early Bronze IB; jar with pillar-spout (1) from dolmen at Tall al-'Umayri (courtesy of Douglas Clark and MPP); spouted vat with indented ledge handle (2) from Tall Abu al-Kharaz (after Fischer 2014, fig. 6: 4).

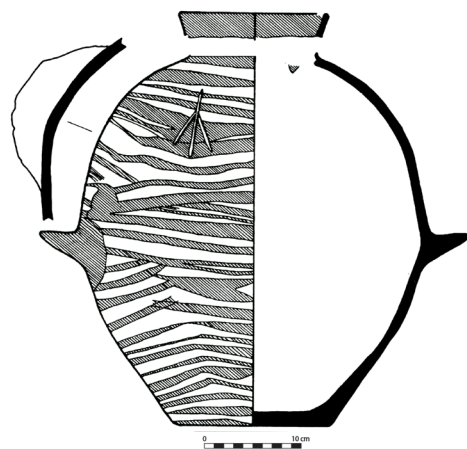


Figure 7 - Early Bronze IB; Grain Wash Ware storage jar from Tall Iktanu (after Prag 2000: fig. 5.4).



Figure 8 - Early Bronze IB; "Umm Hammad Ware" sherds (1–3) from Tall Umm Hammad (after Helms 1986, fig. 15: 6–8), Line-Group Painted Ware vessels (4–5) from Bab adh-Dhra' tombs and jar with "duckbill" ledge handles (6) from tomb at Bab adh-Dhra' (after Schaub and Rast 1989, figs 133: 2, 135: 2, 5).



EB II

With the change to emerging urbanism in the southern Levant, a more complex pottery technology emerges with the slow potter's wheel for use in vessel fashioning and finishing, as well as increasing standardization. EB II stratified pottery assemblages are those from Khirbat az-Zayraqun, Tabaqat Fahl (Pella), Tall Abu al-Kharaz, Tall as-Sa'idiyah, Tall as-Sukhna, Tall Umm Hammad, Khirbat al-Batrawy, Tall al-Hammam, Bab adh-Dhra', Barqa al-Hatiya, and Khirbat Hamrat Ifdan.

Among the hallmarks of EB II are various types of red-slipped and burnished carinated platters (Fig. 9), and high-loop-handled jugs and juglets, mostly flat-based (Fig. 10), though a tendency toward stumpy bases is observable already from this period on different types of decorated and plain jugs and juglets (Fig. 10: 5–7).

Quite often, though not exclusively, these vessels belong to a non-local ware quite likely produced in southern Lebanon called "Metallic Ware" due to the typical "clinky" sound that the vessels make when struck and which is easily recognizable also macroscopically (Fig. 10: 1–4). Very distinctive of EB II are also jugs and juglets with characteristic red-burnished and/or painted motifs composed of dotted triangles, which is called Abydos Ware (or Light-faced Painted Ware) (Fig. 10: 7), as typical vessels were first identified in Egypt, where they were imported from the Levantine EB II centers.

Large vats (Fig. 11), storage jars (Fig. 12: 3–4), and pithoi (Fig. 12: 5–6) with everted rim and narrow neck spread during this period, often with the use of seal impressions that reflect increasing centralized management

of agricultural products. Holemouth vessels, though with more elaborated rims, are still ubiquitous as jars, storage jars (Fig. 12: 1–2), and cooking pots; globular cookpots with everted rim, however, appear in the north. A variety of necked storage jar types is attested too (Fig. 12: 3–6). Besides the Pattern-Combed (Fig. 12: 5) and the Band slip (Fig. 12: 4) styles of the specialized products, rope mouldings are fairly common decorations (Fig. 12: 6).

There is also a variety of carinated bowls, platters, and platter bowls (Fig. 13), spouted bowls, jugs and juglets, amphoriskoi, and twin-vessels (Fig. 14), either red-slipped (though in softer fabrics), painted, or in plain ware. Occasionally, the first four-spouted lamps appear (Fig. 15).

Indented ledge handles (Figs 11: 2, 12: 2–3) are common in this period on both open and closed-shaped vessels, in particular those connected with food processing and storage.

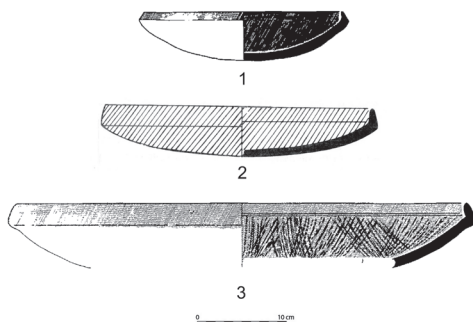


Figure 9 – Early Bronze II; carinated platters from Tall as-Sa'idiyah (1, 3, after Tubb 1988, fig. 32: 8, 21) and Tall Abu al-Kharaz (2, after Fischer 2014, fig. 12: 7).

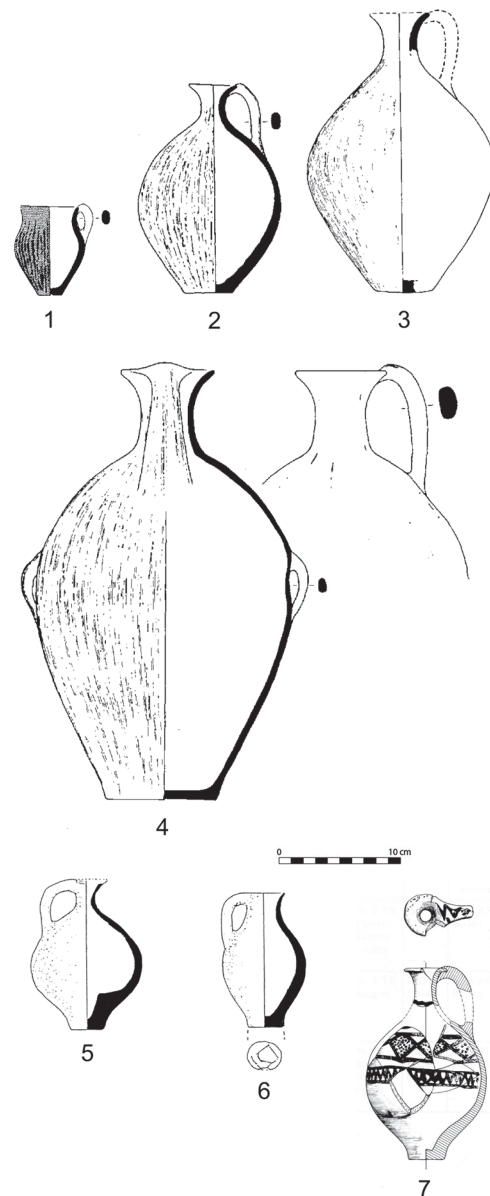


Figure 10 – Early Bronze II; high-loop-handled juglets (1) and jugs (2–4) from Tall as-Sa'idiyah (after Tubb 1988, figs. 32: 7, 35: 1, 5–6), juglets (5–6) from Quwaylibah (after Kafafi 2011, fig. 4: 2, 5), and Light-Faced Painted Ware (7) juglet from Khirbat az-Zayraqun (after Genz 2002, pl. 99: 1).

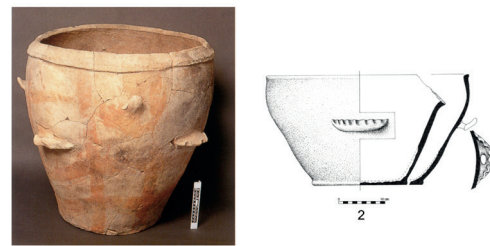


Figure 11 – Early Bronze II; vats with ledge handles from Tall as-Sa'idiyah (1, after Tubb 1988, pl. 4: a) and Barqa al-Hatiya (2, after Fritz 1994, fig. 4: 7)

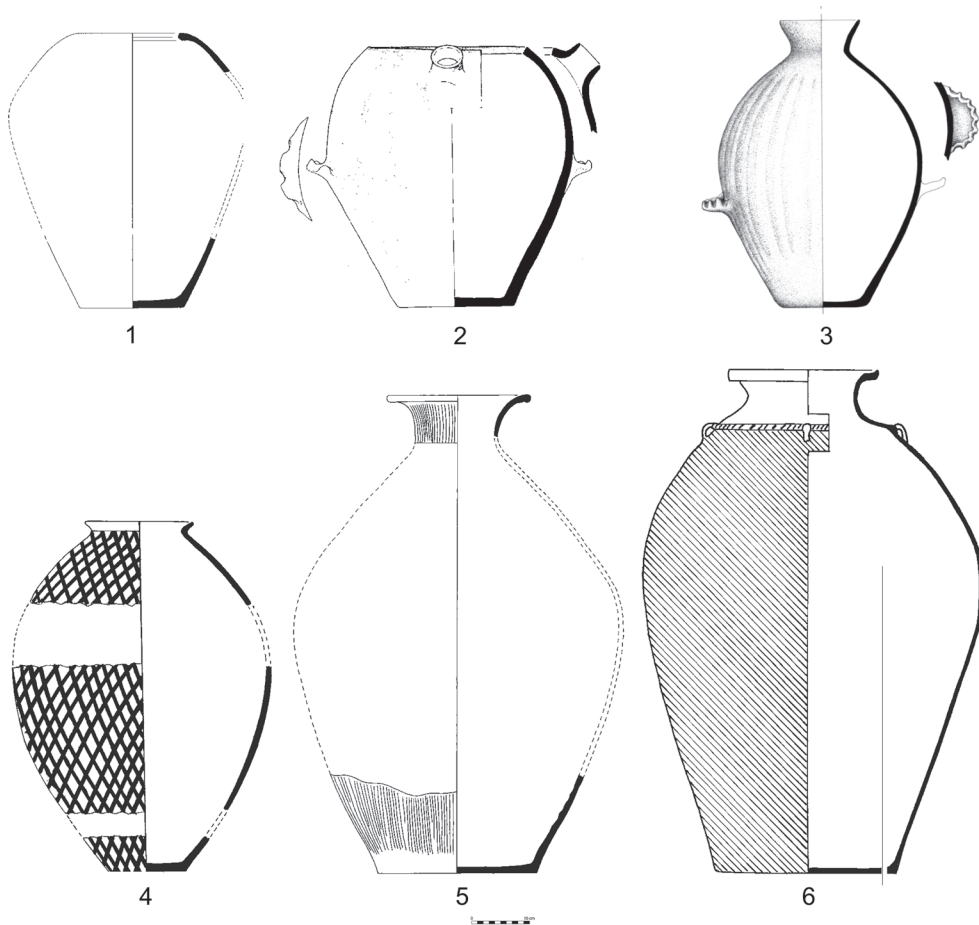


Figure 12 – Early Bronze II; holemouth jars (1–2) from Tall Abu al-Kharaz (after Fischer 2014, fig. 18: 6); necked storage jar (3) from Barqa al-Hatiya (after Fritz 1994, fig. 6: 2), Band Slip Ware storage jar (4), combed storage jar (5), and Metallic Ware pithos (6) from Tall Abu al-Kharaz (after Fischer 2014, figs 14: 8, 18: 4–5).



Figure 14 – Early Bronze II; pottery assemblage from Tall as-Sa'idiya (after Tubb 1998, fig. 18).

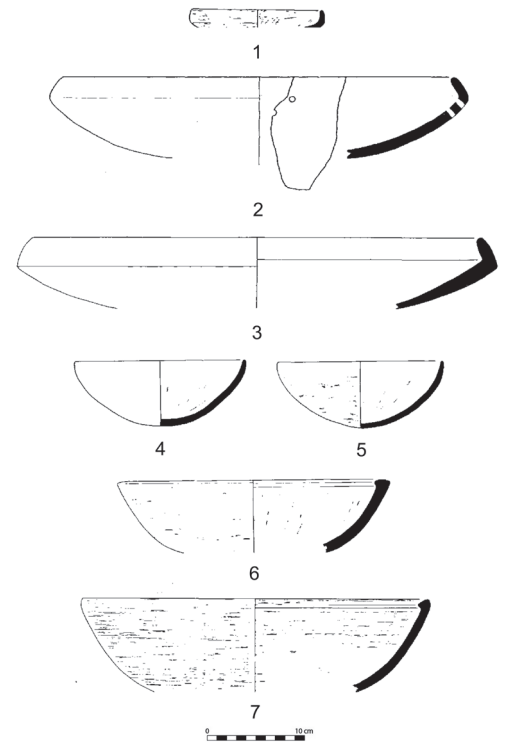


Figure 13 – Early Bronze II; miscellaneous carinated bowls (1), platter-bowls (2–3), and bowls (4–5) and deep bowls (6–7) from Tall as-Sa'idiyah (after Tubb 1988, figs 32: 14, 17–18, 22, 35: 8–10).

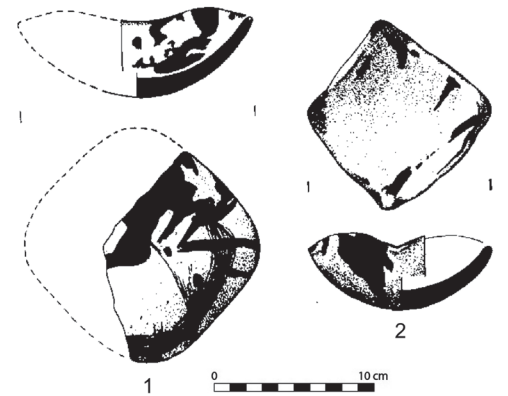


Figure 15 – Early Bronze II; early four-spouted lamps from Tall as-Sa'idiya (after Tubb 1988, fig. 32: 5–6).



EB III

Building upon the previous discussion of EB II forms, we will discuss typologically evolved forms and some of the best-known examples of the EB III pottery repertoire, while highlighting also certain ceramic types that are key to the later assemblages. It is important to note the difficulty in distinguishing changes in the long, continuous ceramic tradition that has in the past been reflected in the term EB II–III pottery, and there are few sites in Jordan with clear typological/chronological distinctions within EB III. The examples cited represent tomb and stratified materials from some major sites in Jordan, e.g., Khirbat az-Zayraqun and Tall Shuna in the north; Jordan Valley sites such as Tall al-Hammam, Pella/Tall Husn, Batrawy; Central plateau sites, such as ‘Umayri, Madaba, and Khirbat Iskandar; and southern sites, such as, for example, Bab adh-Dhra’, Numayra, Khirbat Hamrat Ifdan.

EB III

Open forms range from simple hemispherical small bowls (Fig. 16: 1) to deep bowls with thickened rims (Fig. 16: 2), including deep spouted vats, usually with an internally thickened or hammer rim, as well as handles (loop or ledge) to enable pouring (Fig. 17: 1).

Small shallow bowl lamps with burning spouts at four corners and/or with developing spouts are found, as examples from Khirbat Iskandar, Bab adh-Dhra’, and Khirbat Hamrat Ifdan (Fig. 17: 2) show. The sharply carinated shallow platter-bowls with upright triangular rim continue from EB II, but a new type with concavity below the rim appears later in the

period (Fig. 18: 2); and the trend in EB III is for flat-based platter-bowls with thickened, inverted, hammer, upright, and incurved rims (Fig. 18: 1).

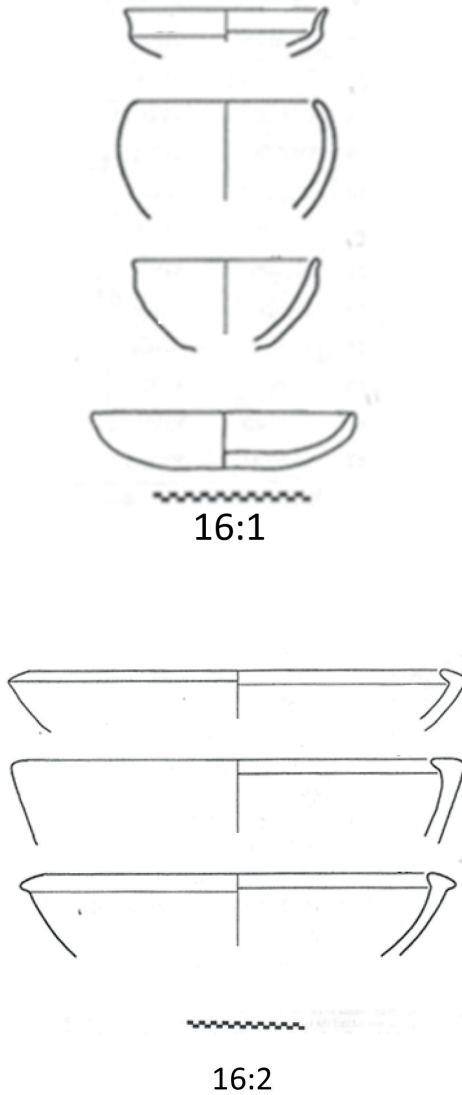


Figure 16 – (1) EB III bowls from Bab adh-Dhra’ (after Rast and Schaub 2003, Fig. 11.10: 13–16, (2) Fig. 11.10: 3–5).

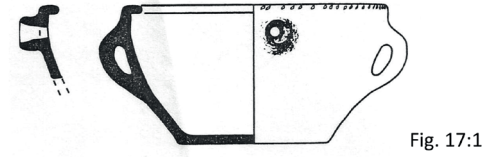


Fig. 17:1

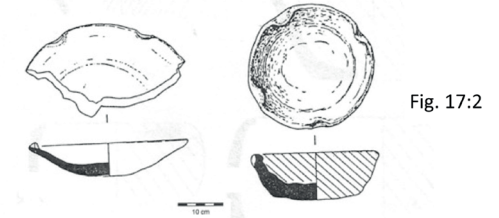


Fig. 17:2

Figure 17 – (1) EB III vat from Khirbat az-Zayraqun (after Genz 2000, fig. 15.1: 3); (2) early four-spouted lamp from Khirbat Hamrat Ifdan (after Adams 2000, Fig. 21.6: 5–6).

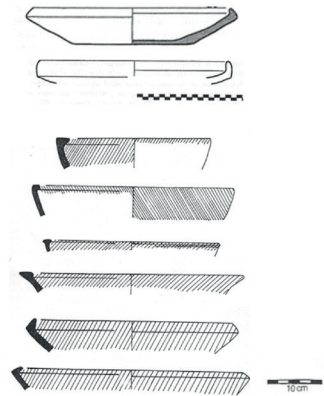


Fig 18:1

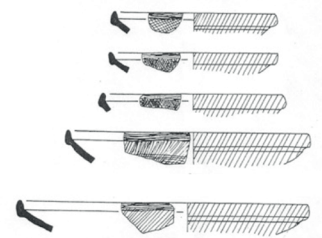


Fig 18: 2

Figure 18 – (1) EB III flat-based inverted rim platters from Bab adh-Dhra’ (after Rast and Schaub 2003, Fig. 11.11: 15–16, 10; platters from Umayri (after Harrison 2000, Fig. 19.2: 11–15); (2) platters with concavity (after Harrison 2000, Fig. 19.2: 30–35).



Closed forms, most particularly holemouth jars and bowls, are ubiquitous in the period (and throughout the EBA). A lack of neck distinguishes the type, as the vessel sides curve in at the shoulders, ending in a direct rim. The form serves as a storage vessel (Fig. 19: 1), a spouted vessel (“teapot”), and a ledge-handled cookpot (Fig. 19: 2), the latter evident in its blackened color and heavy temper (calcite), which serves to withstand the heat of a fireplace. The classic EB III “teapot” is globular, with wavy ledge handles and small flat base (Fig. 19: 3–4); band painting continues from EB II. Rims for holemouths are direct, either simple or bulbous.

Closed forms like graceful high-shouldered one-handled necked vessels continue from EB II, but the jug appears in a variety of short and narrow stump and pointed bases, often in red-polished rather than metallic ware/paint (Fig. 20: 1). The wide-mouthed pitchers are no longer round-based as in EB II, appearing in both short and tall neck varieties (Fig. 20: 2), the latter anticipating the EB IV flask-pitcher. Large jugs (bottle amphoriskoi) and smaller versions (Fig. 20: 3) continue, as well as a new hybrid with both loop and ledge handles. Storage jars usually (but not always) have wavy ledge handles (Fig. 21: 1), but pithoi are ovoid now with tall flaring necks and profiled rims and usually without handles (Fig. 21: 2). The type is characteristic of EB III, as is pattern-combing, rope molding at the neck, multiple rope molding, and red-painted bands, along with potters’ marks/seal impressions on shoulders indicating continued centralized commerce. Storejars with multiple lug handles, as well as loop handles,

continue from EB II (Fig. 21: 3). A range of earlier ledge-handle types continues, but new types are recognizable by their wavy appearance or their symmetrical pushed-up form.



Fig. 19:1



Fig. 19:3-4



Fig. 19:2



Figure 19 – (1) EB III holemouth storejar from Khirbat Iskandar (AP 808 unpublished, courtesy S. Richard); (2) cookpot from Khirbat Iskandar (AP 269 unpublished, courtesy S. Richard); (3) teapot from Khirbat Iskandar (AP 748 unpublished, courtesy of S. Richard); (4) teapot from Khirbat Iskandar (after Richard 1982, Pl. LXXXIX).

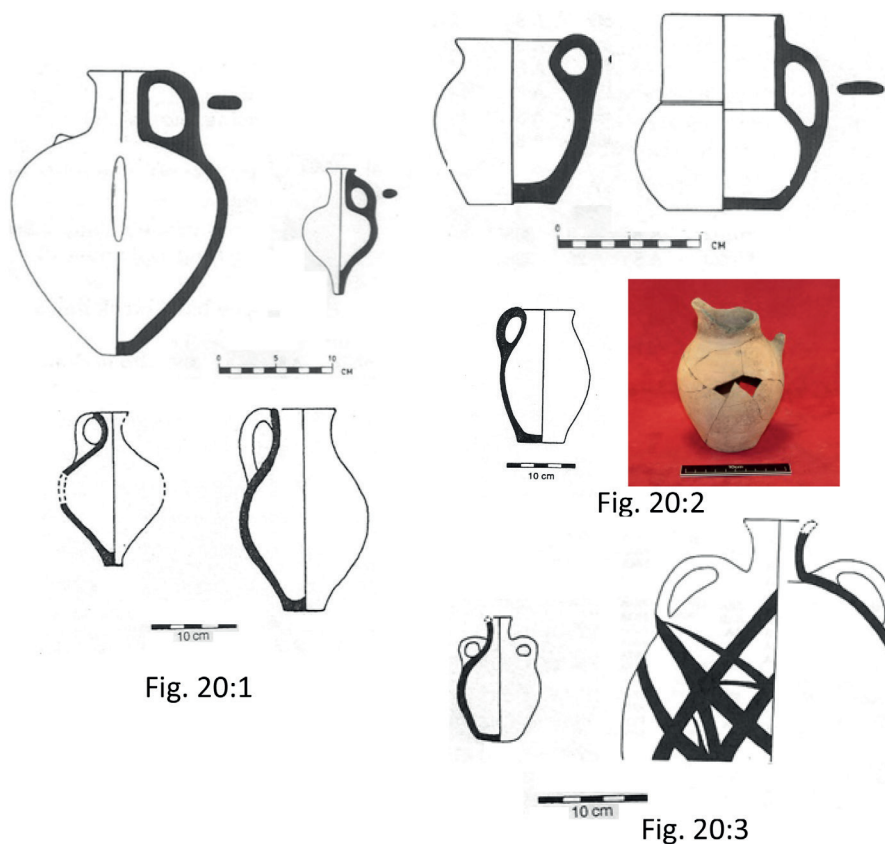


Fig. 20:2

Fig. 20:3

Figure 20 – (1) EB III jugs from Bab adh–Dhra' (upper after Schaub and Rast 1989: Fig. 202: 1, 39), lower from Umayri (after Harrison 2000, Fig. 19.3: 2–3); (2) pitchers from Bab adh–Dhra' (upper after Schaub and Rast 1989: Fig. 232: 3 and 250: 3); lower from Khirbat az–Zayraqun (after Genz 2000: Fig. 15.2: 2), photo from Khirbat Iskandar (AP 270 unpublished, courtesy S. Richard); (3) amphoriskoi from Umayri (after Harrison 2000: Fig. 19.3: 6, 8).

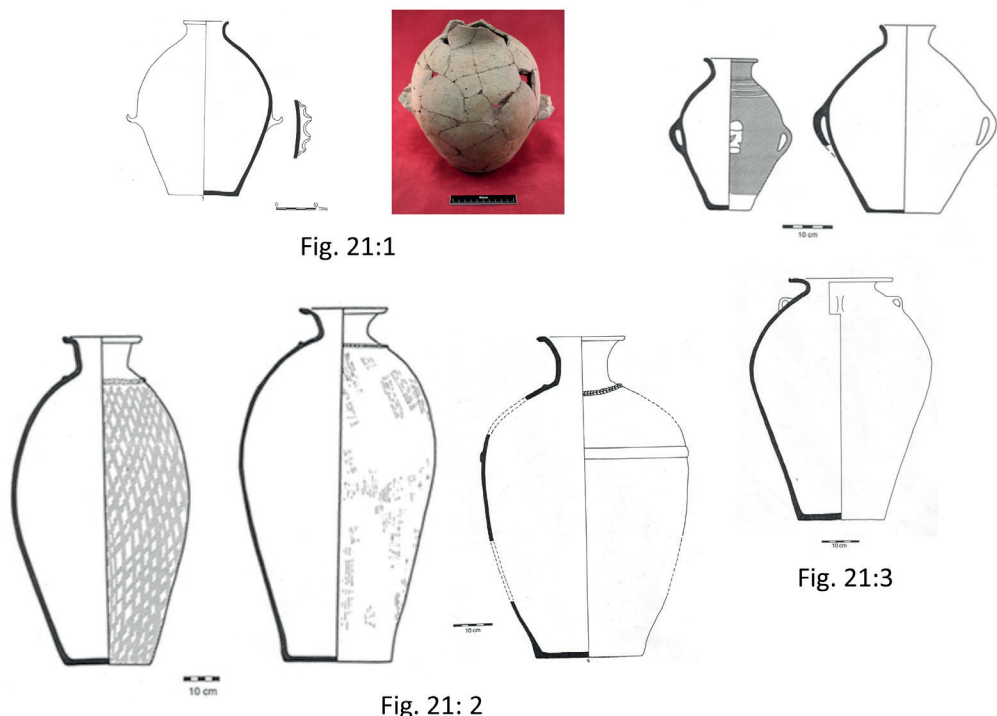


Fig. 21:1

Fig. 21:3

Fig. 21: 2

Figure 21 – (1) EB III storejar from Umayri (after Harrison 2000: Fig. 19.4: 2), photo from Khirbat Iskandar (AP 268 unpublished, courtesy S. Richard); (2) pithoi from Khirbat az–Zayraqun (after Genz 2000: Fig. 15.3: 3, 2), from Umayri (after Harrison 2000: Fig. 19.5: 3); (3) loop–handled storejars from Zayraqun (after Genz 2000: Fig. 15.2: 3–4, lug–handled storejar from Umayri (after Harrison 2000: Fig. 19.4: 5).



LATE EB III

Virtually all the above types continue, but some late markers at stratified sites attest to the introduction of distinctive forms toward the end of EB III. In the “open forms,” exaggerated inverted thickened rims on platter-bowls also show an increase in size to very large platters (50 cm plus). Most show inverted rims, e.g., rolled, rolled-pointed, flattened or hammer-like, along with the platter with concavity mentioned above. More carinated cups, imitative of the Khirbat Karak tradition, appear, also votive (V-shaped) cups, and handled cup-bowls. Notable is a conforming trend toward a ledge handle with three pushed-up flaps, hearkening the envelope ledge-handle of EB IV.

EB IV

The stratified tell sites in Jordan, e.g., Khirbat Iskandar, Batrawy, ‘Umayri, Bab adh-Dhra’, Kh. Hamrat Ifdan, Tall Handaquq South, Iktanu, Tall al-Hammam, and Tall Umm Hammad, witnessed cultural continuity, recovery, and resilience in their multiple occupational phases following EB III. There are new settlement sites (e.g., Abu an-Niaj). The pottery is regional (with overlap), with notable distinctions between the north (trickle red paint, envelope ledge handles) and south (red slip/burnish and rilled-rim platter-bowls, vestigial and knob handles). Agreement is lacking on whether two or three distinct ceramic phases exist.

EARLY EB IV

Khirbat Iskandar Phase 1 is the best example of an early (incipient) EB IV horizon dominated by strong continuity of EB III forms, e.g., platters with rolled rims with degenerate red

slip and burnish, globular “teapots” mixed with clear EB IV elements, such as envelope ledge, and small bowls with bead rim.

MIDDLE EB IV

The true hybrid nature of the EB IV repertoire is present in this phase: forms derived from EB III traditions along with new incised decorations, finer wares, and new types, particularly cups and teapots (characteristics also of the Syrian “caliciform” ware). In the open category, EB III traditions diminish and the platter-bowl with pushed-down, rilled-rim and wide flat base is a signature type in the south (Fig. 22: 1); in the north the preference is for bowls with bevelled or everted rim along with piecrust applique/ledges, often in trickle paint (Fig. 22: 2). Carinated bowls, as well as platters, reflect the use of a tournette, as seen in the variety of worked rims, thinned and/or rilled (Fig. 22: 3). Vats with or without spouts, usually with ledge handles, exhibit thickened rims (flattened, hammer, pushed down) (Fig. 23).

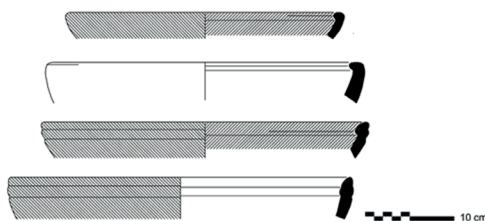


Fig 22: 1

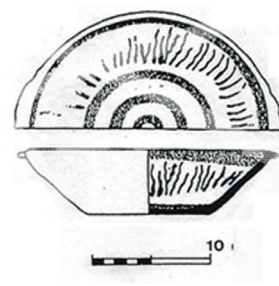


Fig 22: 2



Fig 22: 3

Figure 22 – (1) EB IV platters with thickened rims from Khirbat Iskandar (after Richard, et al. 2010, Pl. 10: 16–20), photo (AP 343 unpublished, courtesy S. Richard); (2) EB IV trickle paint from Wadi al-Hammah (after Wightman 1988, Fig. 12: 9), ledge-handled platter-bowl from Tall Umm Hammad (after Helms 1986: Fig. 17: 12); (3) carinated bowls from Khirbat Iskandar, photos (AP 305, 334 unpublished, courtesy S. Richard).



Small cups/cup-bowls still appear, often with incision (wavy or straight) in the south, along with bead rims and cyma profile; in the north bowls with simple rim appear either plain or in trickle paint (Fig. 24: 1). The bowl lamp, with four well-formed spouts, characterizes EB IV generally (Fig. 24: 2).

Closed forms such as holemouth jars are again ubiquitous in the period, often decorated with rope molding or herringbone incisions/stabs and unusual interior thickened/recessed or flattened rims in the north, while in the south rims are simple or bulbous, often with interior lip (Fig. 25: 1). Cooking pots continue the EB III holemouth tradition or the Syrian necked type with piecrust rim (Fig. 25:3). Teapots occur in the traditional holemouth or low-necked variety (Fig. 25: 3).

As for necked vessels, the squat, flat-based jug and hourglass pitcher, both of which have a strap handle, replace the EB III stump base jug (Fig. 26: 1). A particular regional style known from the Amman cemeteries is the hybrid jug, often with potter's mark on the handle (Fig. 26: 2). Jar and bottle amphoriskoi proliferate everywhere, distinguished by the same decorative differences between north and south mentioned earlier (Fig. 26: 3). Jar shapes of all sizes find distinctions such as folded envelope ledge handles in the northern style, rounded shapes with flared neck (Fig. 27: 1) and trickle paint, whereas we find ledge handles and jars without handles in the south, with everted necks luted on secondarily, as well as flared rims with exaggerated flared and tapered edge (Fig. 27: 2).

LATE EB IV

There is a great deal of continuity of types into the last phase along with the notable disappearance of many EBA traditions. Some new forms and typological hallmarks appear to anticipate MBA forms, e.g., the new straight-sided cookpot (Fig. 28: 1), the numerous highly carinated forms, particularly cups and small bowls of the cyma-profile variety, as well as band and wavy combing (Fig. 28: 2), showing increased use of the tournette in their carinated profiles, and at Iskandar a particular type of rilled-rim platter bowl with bevelled interior rim (Fig. 28: 3) appears. There is also the appearance of one-spouted lamps, which herald the characteristic MBA lamp form.

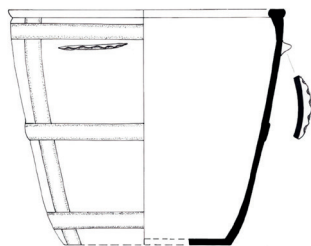


Figure 23 – EB IV vat from Khirbat Iskandar, photo (AP 342 unpublished, courtesy S. Richard), drawing (after Richard 2000, Fig. 3: 1).

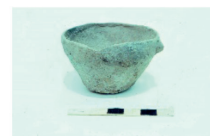
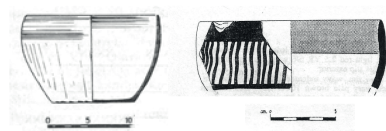
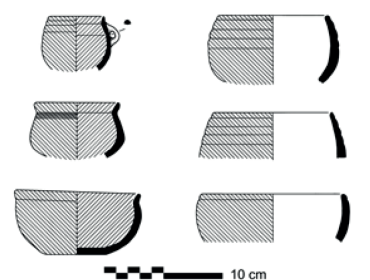


Fig. 24: 2



Figure 24 – (1) EB IV cups/cup-bowls from Khirbat Iskandar (after Richard, et al. 2010, Fig. 10.3: 1–6), photos (APs 395, 238, 999, 216 unpublished, courtesy S. Richard); simple and trickle-painted cup-bowls (after Helms 1986, Fig. 17:13; and Palumbo 1990, Fig. 38:1); (2) four-spouted lamp from Khirbat Iskandar (after Richard, et al. 2010, Fig. 10.8: 16; photo AP 239 unpublished, courtesy S. Richard).

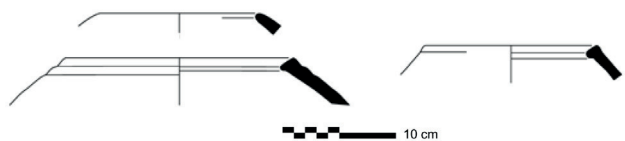


Fig. 25: 1



Fig. 25: 3



Fig. 25: 2



Fig. 26: 1



Fig. 26: 2

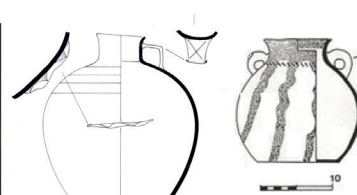


Fig. 26: 3

Figure 25 – (1) EB IV holemouth jars from Khirbat Iskandar (after Richard, et al. 2010, Pl. 6: 1–3); (2) holemouth cookpot from Khirbat Iskandar (after Richard and Boraas 1984, fig. 8), necked cookpot from Khirbat Iskandar (after Richard 1982, Fig. 4:3 and Pl. XCI); (3) cookpots, photos (AP 749 and AP 336 unpublished, courtesy S. Richard).

Figure 26 – (1) EB IV jug from Khirbat Iskandar, photo (AP 40 unpublished, courtesy S. Richard), trickle-paint from Wadi al-Hammah (after Wightman 1988, Fig. 8: 11); (2) hybrid vessel from Khirbat Iskandar (AP 360 unpublished, courtesy S. Richard); (3) trickle-paint amphoriskos from Wadi al-Hammah (after Wightman 1988, Fig. 9: 9), bottle amphoriskos from Khirbat Iskandar, photo (AP 231 unpublished, courtesy S. Richard).

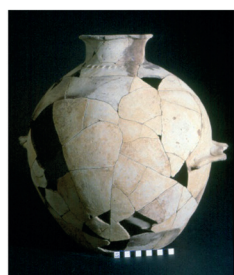


Fig. 27: 1



Fig. 27: 2



Figure 27 – (1) EB IV northern storejar import, from Khirbat Iskandar, photo (AP 365), photo pithos (AP 362), photo small jar (APP 367), all unpublished, courtesy of S. Richard.



Fig. 28: 1

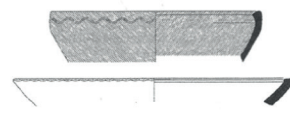


Fig. 28: 3

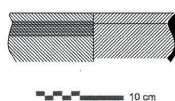


Fig. 28: 2

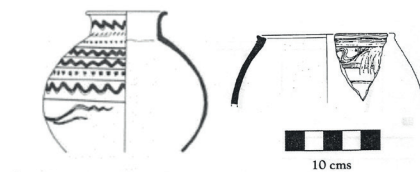
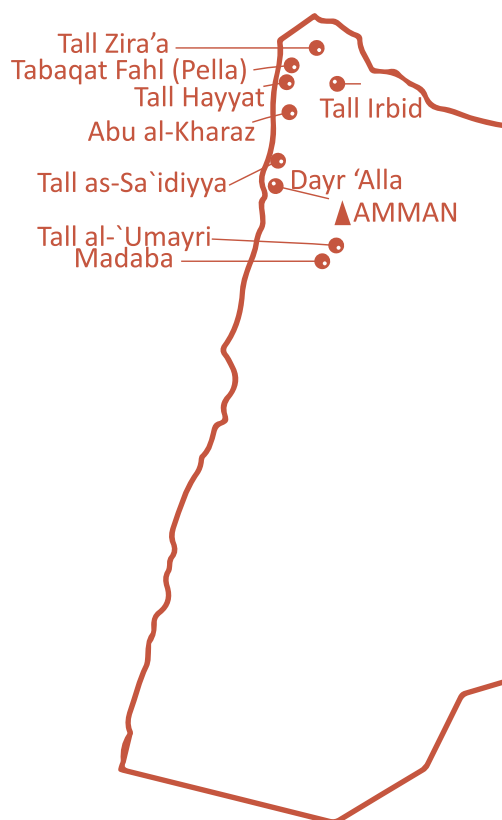


Figure 28 – (1) cookpot from 'Aro'er (after Olávarri 1969, Fig. 5:12); (2) cyma-profile cup-bowls from Khirbat Iskandar, photos (AP 780 and AP 1004 unpublished, courtesy S. Richard), drawing (after Richard, et al. 2010, Fig. 12.6: 17), and straight/wavy band combing from Tall Umm Hammad (after Helms 1986, Fig. 18: 8) and Khirbat Hamrat Ifdan (after Adams 2000, Fig. 21.9: 8.).

The Middle and Late Bronze Ages

Stephen Bourke
(stephen.bourke@sydney.edu.au)

JORDAN MAP
Major Sites
Middle–Late Bronze Ages
2,200–1,200 BC



Middle and Late Bronze Age ceramics are defined by clay fabrics (coarse and fine), manufacturing technology (handmade, slow-wheel finished, or fast-wheel thrown), surface treatment (untreated, slipped, slipped/burnished) and decorative mode (incised, impressed, plastic-added, or painted). As well, and perhaps more important, determining the function of vessels (cooking and storage, tableware, and special purpose) allows one to explore lifeways, date of production, and locate place of origin.

Early Middle Bronze Age (MBA) ceramics employ the slow-wheel, which alters in the second half of the MBA through the early Late Bronze Age (LBA) to a more frequent use of the fast wheel, which declines once more in the later LBA. Over the course of the MBA, ceramics are more frequently slipped and burnished, while a more frequent use of painted decoration occurs from the latest MBA and on throughout the LBA.

MAJOR CLASSES OF MBA AND LBA POTTERY

1. COARSE WARES

COOKING POTS (FIG. 1)

Cooking pots are very distinctive, mostly red-brown to dark brown in fabric color, with many stone grits (often basalt, limestone and quartz) and some chopped straw added to the clay matrix to protect the vessel from breaking (thermal shock) when placed upon a fire.

Early MBA cooking vessels were handmade, thick-walled and heavy,

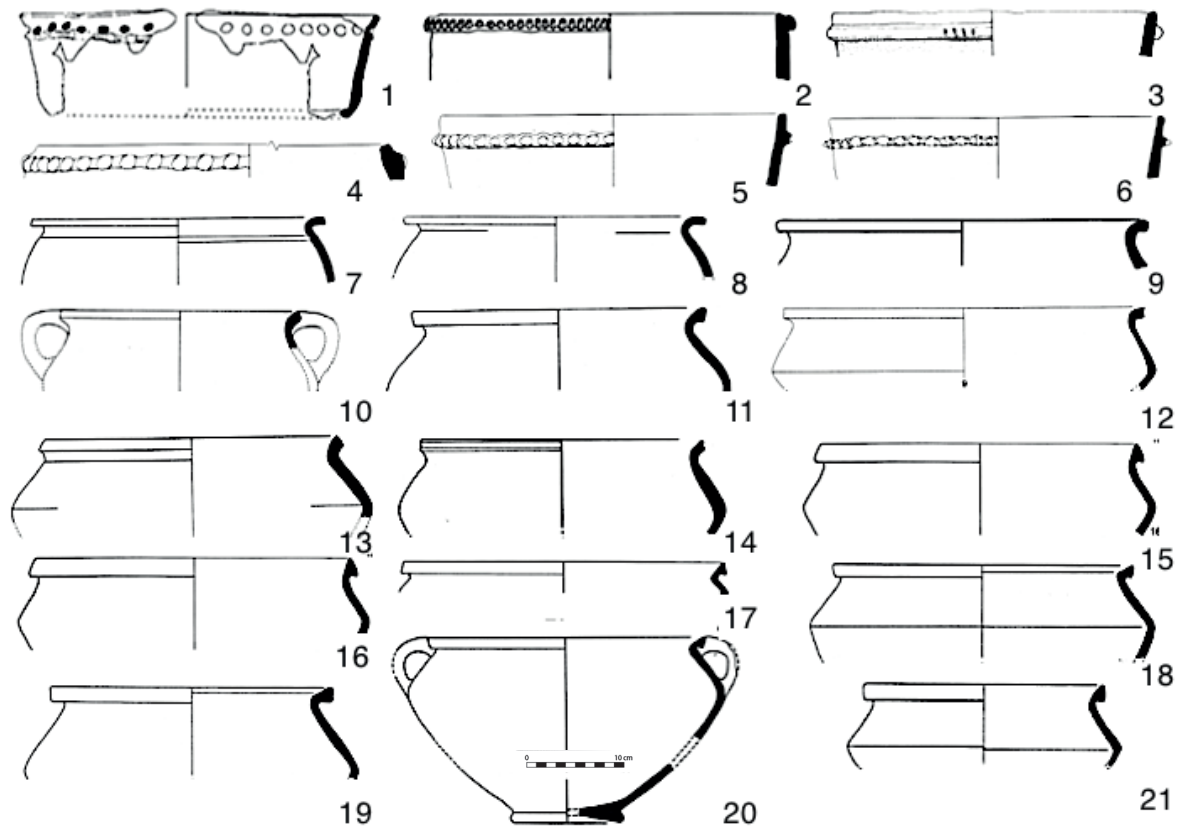
with large rim diameters (often 50–70 cm or more) and thick flat bases with simple upright flat-rounded rims. The exterior is often decorated with one or more added plastic bands of thumb-impressed clay around the body, arranged in a “pie-crust” appearance, positioned generally about 10 cm below the rim. Many pots have a ring of perforations just below the rim, presumably to let out steam.

These large vessels were likely used to cook stews and soups, helping to maintain health, as the act of boiling food for long periods rendered it safe, especially in the summer months. The size of early MBA cooking vessels was generally much larger than those made later in the MBA, perhaps implying a more communal mode of eating, with extended family units all taking meals together.

Later MBA cooking vessels were quite different in form, although the fabric color is much the same, with a slightly more refined version of the earlier MBA paste, necessary to facilitate shaping on a slow wheel. Vessels were much smaller (on average 35–50 cm rim diameters), featuring round bases and outflaring or sharply everted (outturned), rounded or bevelled rims. A slurry of the clay fabric was often applied as a thin slip, making the overall surface smoother, more moisture resistant and probably easier to clean.

LBA cooking pot forms show considerable continuity with their later MBA predecessors. Bodies become more sharply carinated around the mid-body, and bases are generally more rounded. Rims are ever more sharply outflaring or everted, often with a marked internal carination at

Figure 1 – Cooking Pots 1.1–1.6 Early MBA Straight-Sided Cooking Pots; 1.7–1.12 Late MBA Rounded Body Cooking Pots; 1.13–1.16 Early LBA Carinated Cooking Pots; 1.17–1.21 Late LBA Everted Triangular Rim Carinated Cooking Pots.



the neck/body join. Rim profiles are most commonly beveled and triangular in form, although some display a tooled bifurcation on the rim exterior. Towards the very end of the LBA a more upright, tooled rounded rim occurs, but it is never common. As well, a class of round-bodied cooking jugs appears at this time, which becomes increasingly common in the succeeding Iron Age. The jug form was probably employed in yogurt production and may hint at the introduction of new cuisines, if not necessarily new peoples.

STORAGE JARS (FIG. 2)

Storage jars are common in all households, employed to store grain, oils and liquids of various sorts, and were probably reused many times. Fabrics vary in color from light brown through brick red, and have a variety of lime, basalt and quartz grits. They hold perhaps 20–30 liters of grain, oil or wine. Occasionally, much larger short-necked, flat-based storage jars (pithoi), of around 40–80-liter capacity, were employed for fixed storage of dry and wet goods, as these thicker-walled and

wider-necked vessels could not easily be moved.

Storage jars generally have tall narrow necks with rim diameters of around 15 cm and ovoid (egg-shaped) bodies, standing between 60–80 cm high. Early MBA storage jars have flat or slightly convex flattened bases, while later MBA storage jars have smoothly rounded bases. Storage jar rims vary in form, but early MBA forms are normally upright with thickened, rounded rims, or occasionally with corrugated (thin sharp ridged) necks below outturned triangular rims. Later MBA storage jar rim profiles vary somewhat, but most are upright and thickened, rounded in form, but occasionally they can be outturned/ everted, and beveled (tooled) square to triangular in profile.

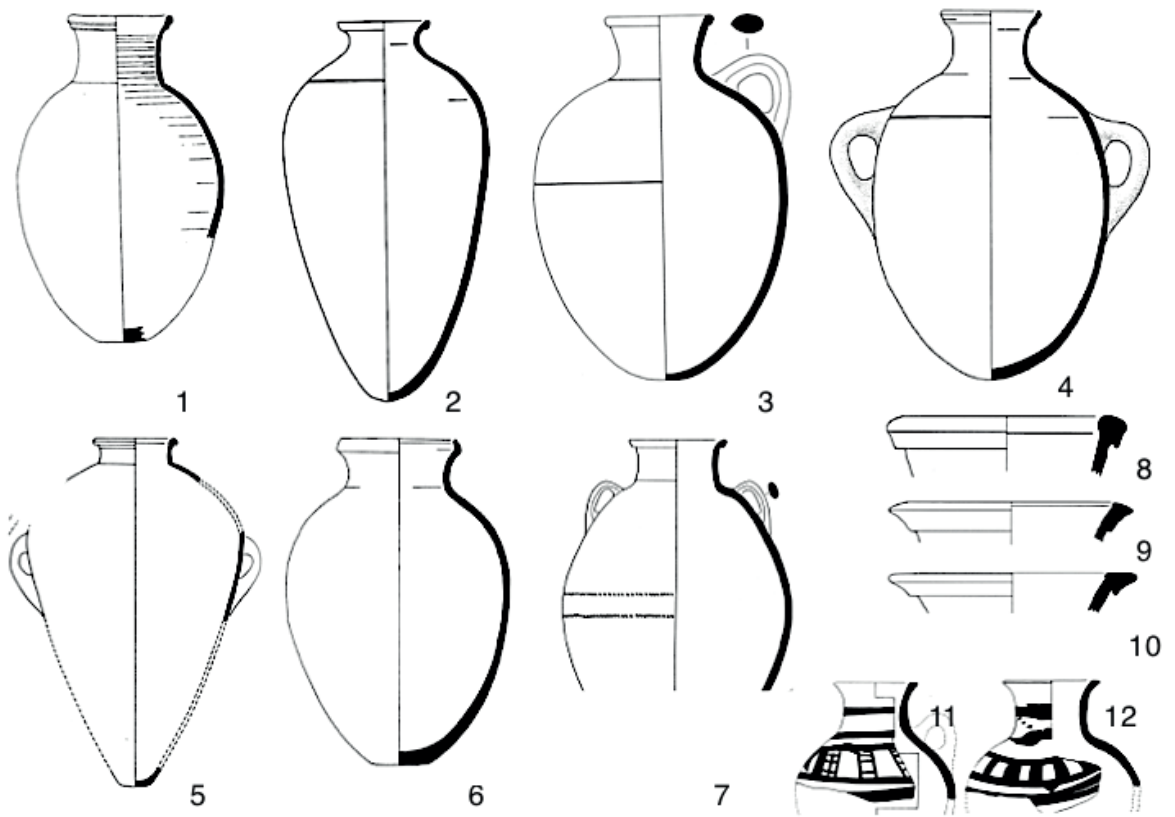
Early MBA storage jars occasionally have comb-incised multiple bands of wavy-line decoration around the upper body, while some later MBA storage jars are self-slipped, with multiple horizontal red-painted bands around the rim/neck and upper body. While early MBA storage jars can have heavy thickened bases, later MBA storage jars are wheel made and much finer overall.

Early MBA storage jars rarely had handles, but one- and two-handled jars (amphorae) are frequent in the later MBA, when inter-regional trade in commodities became more common and quantities/weights standardized.

The later MBA so-called “pie-crust” transport amphorae become ever more standardized in manufacture and size, suggesting specialized production and distribution from major centers. Handles were frequently incised with simple geometric motifs that may identify individual manufacturing centers. On rare occasions storage jar handles will bear stamp-seal impressions, mostly from scarab seals of Egyptian Hyksos-era kings, perhaps indicating either ownership or more probably destination.

LBA storage jars were little altered from their later MBA predecessors, although handleless forms become very rare in the LBA. Fabrics are more normally buff to brown in color, with the brick-red fabrics of the later MBA much less common in the LBA. Paste is less well mixed over time, with large lime and occasional basalt grits ever more common. The tall narrow-

Figure 2 – Storage Jars 2.1 Early MBA Flat-Based Rounded Storage Jar; 2.2 Early MBA Ovoid Storage Jar; 2.3 Late MBA Handled Rounded Storage Jar; 2.4 Late MBA Round Amphoroid Storage Jar; 2.5 Early LBA Piriform Storage Jar 2.6 Late LBA Offset Triangular Rim Storage Jar; 2.7 LBA Carinated Shoulder Rounded Storage Jar; 2.8–2.10 MB–LB Storage Jar Rim Development; 2.11–12 Late LBA Painted Storage Jars.



necked, thickened, outflaring rounded rim forms are maintained. Slips and the horizontal line-painted decoration becomes ever more “slap-dash” in the later LBA.

One class of LBA large storage jars, midway in size between pithoi and standard storage amphorae, have been termed “collared-rim jars” or “collared pithoi.” These thick-walled jars, with a “stretched ovoid” body form, point-rounded base, and tall narrow thickened upright (“collared”) rims, had twice the capacity of the more normal storage jars. Often claimed as a quasi-ethnic marker of newly sedentarized peoples, they likely functioned as grain and water storage vessels. Their distribution is mostly correlated with small upland settlements, newly founded in the later LBA in semi-arid, marginal zones.

2. FINE WARES

BOWLS (FIG. 3)

Within the broad category of bowls, there are three main subclasses—shallow platter bowls, hemispherical

rounded bowls, and sharply carinated (often high pedestalled) drinking vessels.

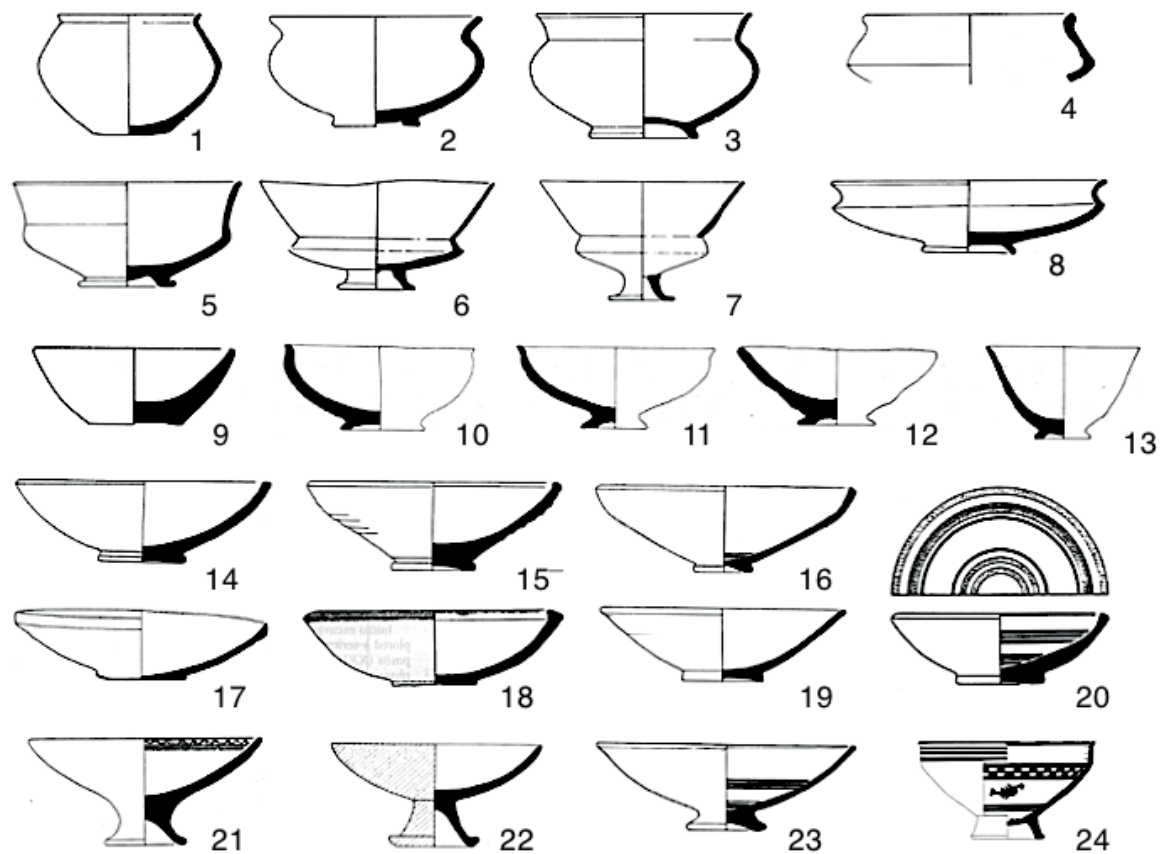
In the early MBA, shallow platter bowls normally have a broad flattened base and outturned swollen, rounded or beveled triangular rims. In the later MBA, as well as flattened bases, bowls can have concave disk or low-ring bases and either simple rounded, swollen outturned rounded, or beveled triangular rims. Bowls are mostly undecorated, but some have a red slip, and a few were painted with simple horizontal bands on and below the rim. In the LBA, trumpet-based shallow platter bowls (fruit stands) become more common. These are often red- or white-slipped, with concentric circular painted designs in red-brown on white, common early in LBA, although decoration is increasingly confined to bands near the rim as the LBA unfolds. These “fruit stands” very likely served the dual purpose of display and food container.

Early MBA hemispherical, rounded deep bowls have flattened bases and simple upright rounded rims. Concave disk and low-ring bases occur from the

later MBA, when bowls are occasionally red-slipped and burnished. In the LBA, deep hemispherical bowls with rounded base and pinched upright simple rims become more common. Often matt red-slipped, they sometimes display a flattened lower body above the base, where wooden paddles appear to have been employed to remove excess clay. This body treatment is often suggested to be an “Egyptianizing” feature in pot manufacture and may reflect a growing Egyptian intrusion into local lifeways in the second half of the LBA.

MBA carinated bowls display a distinct carination (bend) at the mid-body, a sharply everted short neck, and either a rounded or beveled flat rim form. Early MBA carinated bowls are “heavy,” with flat or shallow disc bases, and seem to have been used for a variety of solid and liquid foods. Later MBA carinated forms are finer and lighter, more sharply carinated at mid-body or higher, with a larger capacity. Later MBA forms are often white slipped and wheel burnished, and most have a high-ring base, although more globular body-forms tend to have flat bases, and some rare examples have

Figure 3 – Bowls 3.1–3.4 Early MBA Carinated Bowls; 3.5–3.7 Later MBA Carinated Form Development; 3.8 MBA Shallow Carinated Bowl; 3.9–3.11 MBA Simple Bowls; 3.12–3.13 LBA Simple Bowls; 3.14–3.19 MBA Platter Bowls; 3.20 Painted MBA Platter Bowl; 3.21–3.23 LBA Pedestal Bowls; 3.24 Late LBA Painted Pedestal Bowl.



“hooped” circular base supports. These “pedestaled” carinated forms seem likely to have been drinking cups, and can be thought of as carinated goblets. In the LBA, carinated bowl forms continue, with low ring-based forms predominating, with the high “goblet” forms of the later MBA becoming increasingly rare. Over the course of the LBA, carinations become less sharp/more rounded and occur farther down the mid- to lower body. By the end of the LBA, forms are once more slow-wheel made, heavy and coarse, with slips thin and burnish rare. Single bands of red-paint below rims on upper bodies were more common in the later LBA.

KRATERS

Kraters are an important element in later MBA tableware assemblages (named from the Greek mixing bowl), which may be considered a subclass of vertically-sided carinated deep bowls. Kraters can be quite large (up to 50–60 cm in diameter), with vertical upper and rounded lower bodies and a sharp carination at the change in body form. In the LBA they often have multiple handles set equidistant around the rim.

Kraters were used to mix various liquids at table, normally water and wine, but no doubt supplemented with honey, spices and other flavorings. The form is rare in the early MBA but becomes more common in the later MBA, perhaps reflecting changing cuisine choices or a generally more prosperous table. Krater bases are normally simple and flattened in the early MBA, while in the later MBA, in addition to flat-based forms, many display a thick disc or low ring base. Early MBA rim forms can be simple upright and rounded in form, while later MBA rims are more often broad, flattened and hammer-shaped in profile.

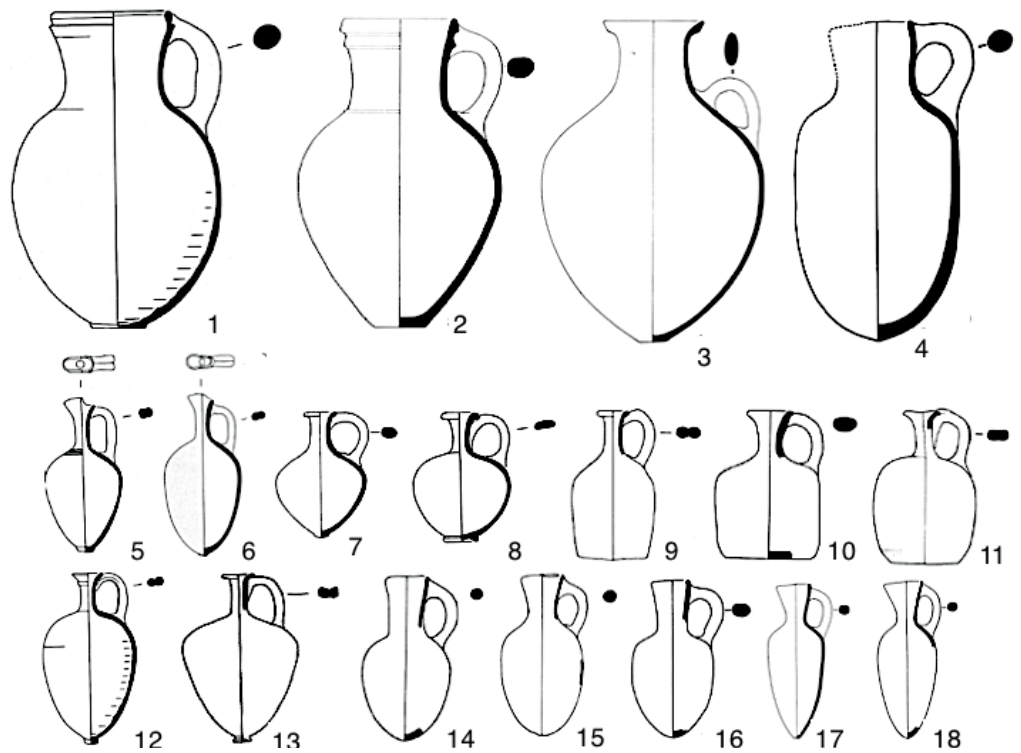
Early MBA kraters are generally undecorated, but later MBA kraters were commonly white slipped and decorated with bands of horizontal and vertical red-brown paint. Early LBA krater forms continue late MBA norms, although the upper body tends to be more outflaring, with simple rounded rim profiles. Early LBA krater decoration maintains later MBA norms, with the white-slipped upper body often decorated in red-brown painted frieze-panels, flanked by framed wavy line and occasional checkerboard

patterns. Later LBA krater forms become very “heavy”, with the mid-body carination softening and bases reverting to simple disc and low-ring forms. Painted decoration still occurs in darker brown on a chalky white slip, with the “sacred tree” motif occasionally rendered alongside the more standard pendant straight and wavy lines.

JUGS AND JUGLETS (FIG. 4)

Jugs and juglets were the two main tableware liquid-dispensing forms. The larger jug forms held up to two liters, and in the MBA are dominated by one-handled, round-bodied, flat-based forms, some with simple rims, others with pronounced spouts, all used to pour water, wine and other liquids at table. LBA jug forms still include the simple round-rimmed, round-bodied, flat-based shape, but these are joined by a new, much larger carinated jug form, displaying a broad nearly horizontal shoulder, a sharply carinated mid-lower body, and a low ring base with one small round handle (and occasionally two) positioned at the shoulder/body join. The form is often white slipped and highly burnished (by hand and wheel), and occasionally

Figure 4 – Jugs and Juglets 4.1–4.2 Early MBA Jugs; 4.3 Late MBA Jug; 4.4 LBA Dipper Jug 4.5–4.6 Early MBA Trefoil Piriform Juglets; 4.7 Early MBA Piriform Juglet 4.8 Late MBA Globular Juglet; 4.9–4.11 Late MBA Cylindrical Juglets; 4.12–13 Late MBA Piriform Juglets; 4.14–4.16 Early LBA Dipper Juglets; 4.17–4.18 Late LBA Dipper Juglets.



decorated in red–brown monochrome or red/black bichrome painted decoration. This sharply carinated large jug/amphora form has MBA predecessors in coastal/west Syria, and seems likely to imitate metal jug forms.

Juglets are much smaller and probably held more precious/rare commodities, such as fine oils, perfumes and exotic spices. Early MBA juglet forms include fine red–slip vertical burnished piriform–bodied relatively narrow–necked shapes, with internally stepped, occasionally trefoil-shaped, rims and complex tooled low to medium ring–bases. In the later MBA the squat barrel–shaped cylindrical juglet form appears, with a thin “pencil” neck, outflaring rounded rim and a flattened round base. As well, the “dipper” juglet form, with a stretched piriform body, round base, and pinched rim, occurs throughout the MBA and well into the LBA. The neck–to–body ratio increases over the course of the LBA, along with an ever–more–slimline, elongated body form and a much more pointed base. Dipper juglets were employed to decant liquids (thus the label “dipper”) from larger storage vessels, and were often paired with oil–filled storage jars in burials.

CHOCOLATE ON WHITE WARE (FIG. 5)

At the very end of the MBA, a distinctive Jordanian fine tableware termed “Chocolate on White” were appears in local assemblages. It is known in a dark red–painted version in the latest MBA horizons in the Jordan Valley, but is more widely distributed across the southern Levant in the normative dark–chocolate brown (hence the name) painted format. Rare bichrome variants are known and may reflect some influence from the predominantly Cypriot, long misidentified, “Palestinian Bichrome ware.”

Chocolate on White (CoW) ware is perhaps the most accomplished Jordanian Bronze Age ceramic, very probably produced in the east Jordan Valley margins around Pella. Forms are made on a fast wheel, slipped in brilliant white to light yellow–buff, highly burnished by hand and wheel, and carefully decorated in dark–red or chocolate–brown paint, with linear bands, solid pendant triangles and framed wavy–line motifs the most common. Forms include the rare carinated krater, the more common large and small carinated jugs, shallow

platters and carinated bowls, rare large amphoroid jars, carinated one–handled tankards, and cylindrical juglets. Together, these predominantly liquid–preparation–dispensing and drinking vessels (barring the platters and cylindrical juglets), form a coherent and distinctive tableware set. The visually distinctive Chocolate on White ware may have served to showcase an indigenous cultural allegiance in a time of increasing foreign influence.

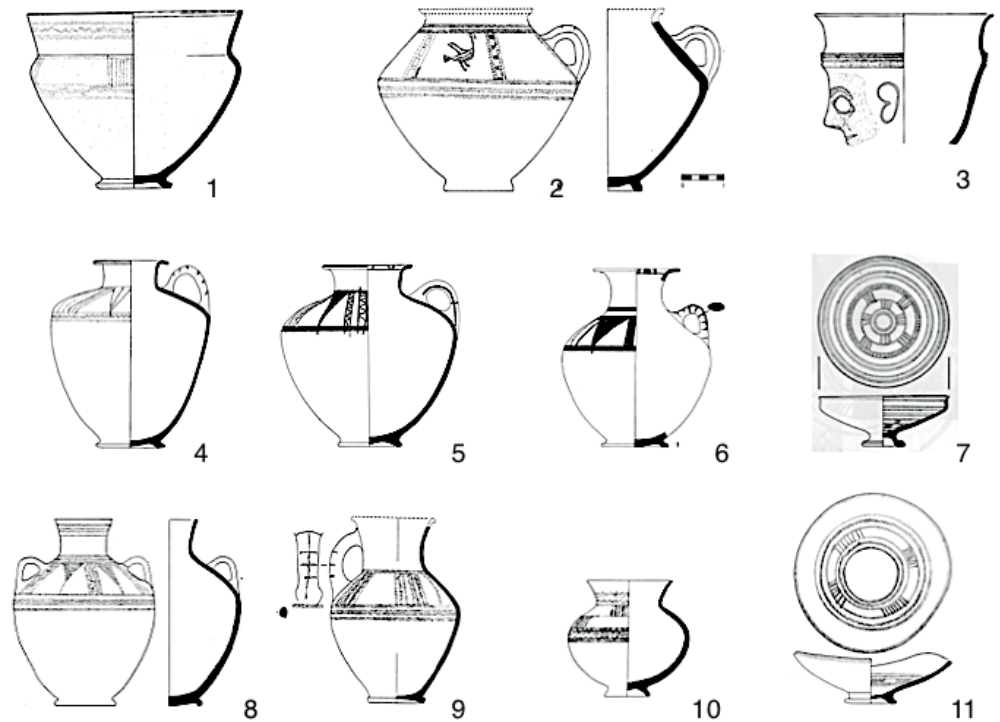
3. IMPORTED VESSELS (FIG. 6)

Rare MBA imports come largely from Cyprus and Egypt and mostly occur in Jordan Valley sites in the later MBA. LBA imports are far more numerous and widespread across Jordan and are probably a good indicator of increasing overland and maritime trade with the Aegean, Egypt, and the Hejaz.

EGYPTIAN IMPORTS

MBA Egyptian imports are predominantly the distinctive Tell al–Yahudiyeh ware, featuring a dense black–fired fabric and white lime–filled incised punctate and geometric incised/infilled decoration. Most Tell al–Yahudiyeh imports are small

Figure 5 – Chocolate on White (CoW) Ware 5.1 Krater; 5.2 Biconical Amphoroid Jar; 5.3 Head Vase; 5.4–5.6 Early CoW Jugs; 5.7 Carinated Bowl; 5.8–5.9 Late CoW Jugs; 5.10 Globular Jar; 5.11 Platter Bowl.



piriform juglets, probably containing scented oils, although rare simple shallow hoop-based plates and larger jugs are known. In the LBA, rare Egyptian Blue Painted amphora, buff-ware pot stands, and red-slipped hemispherical bowls occur, mostly in the second half of the LBA, and largely in Jordan Valley assemblages.

CYPRIOT IMPORTS

MBA Cypriot imports are rare and mostly consist of handmade, round-bodied, thin-necked white painted globular juglets, with simple strap handles joining neck to shoulder, with the handle base pushed through body walls. Most imports belong to the Cypriot White Painted III–VI wares. They are normally matt white-slipped and painted with dark brown-to-black paint, in either cross-line or framed vertical wavy line patterns. Very occasionally a second distinctive Cypriot fabric, the so-called “Red on Black” ware, occurs in late MBA assemblages. Forms are normally small jugs or shallow platter bowls, with decoration featuring a matt black slip with red multiple-brush painted decoration.

LBA Cypriot imports are mostly jug and juglet forms, less frequently shallow hemispherical or carinated bowl forms. Round-bodied, stovepipe-necked jugs in Base Ring I and Base Ring II wares are quite common. These are handmade, dark-grey slipped and painted in white stripes with a multiple brush. Less common are the elongated Red Lustrous Wheel-made-ware “spindle bottles,” which featured fast-wheel manufacture and a high-gloss red-slipped, wheel-burnished finish. Quite small round-bodied, thin-necked juglets in Base Ring I feature multiple raised thin plastic bands across rounded bodies, said to imitate the incisions on opium poppies. Finally, the flat-based, globular-bodied, narrow-necked Black Lustrous Wheel-made ware juglets, slipped in glossy but friable black slip, occur in early LBA Jordan valley assemblages.

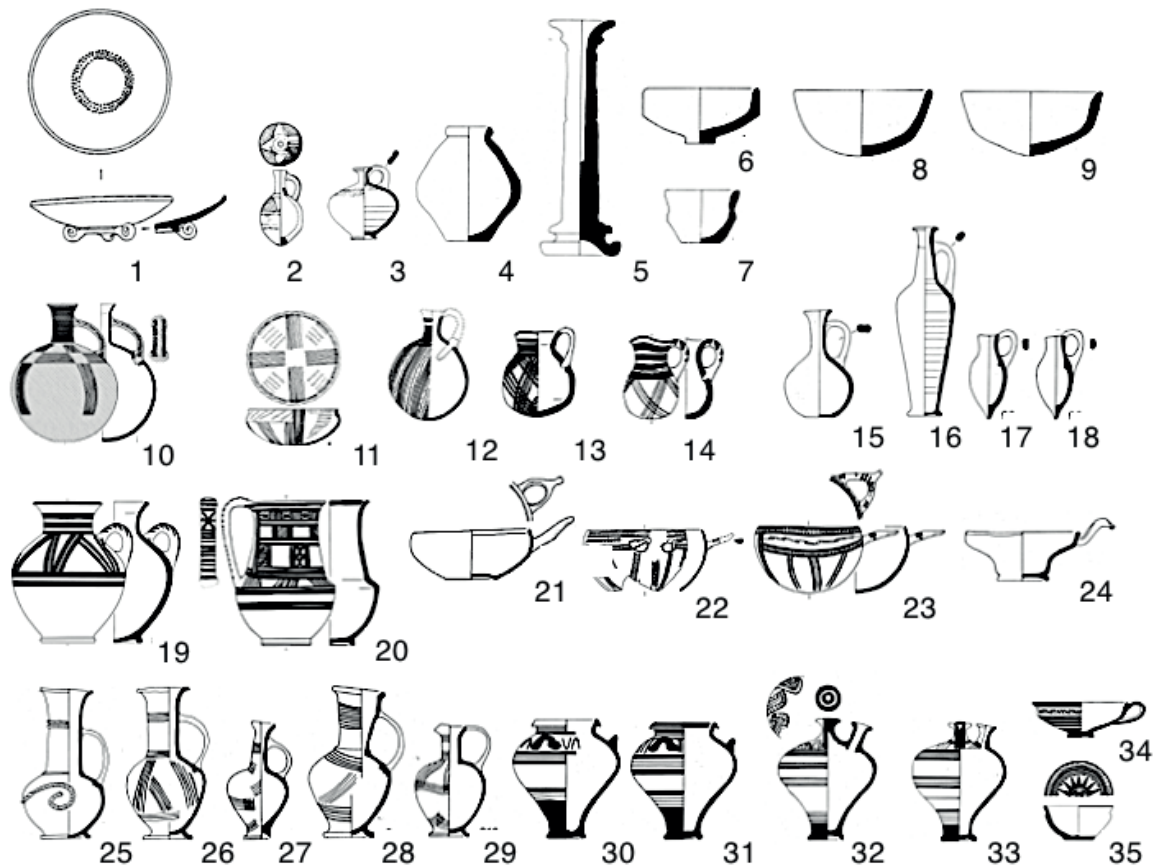
In later LBA levels, “White Shaved ware” dipper juglets, handmade, with stretched-piriform, grooved (“shaved”) bodies, occur along with jugs and juglets. Handmade simple hemispherical bowl forms in White Slip I and White Slip II ware, with distinctive wishbone handles pushed through the body fabric, decorated in

glossy white (WS I), and thin chalky matt white (WS II) slips, both painted with black “ladder” motifs, are fairly common throughout the LBA. Rarer red- to grey-slipped “Monochrome ware” shallow carinated open bowl forms, often replicated in Base Ring I ware, occur early in the LBA.

MYCENAEAN GREEK IMPORTS

Mycenaean imports are a feature of the LBA throughout the Levant, occurring predominantly in the later part of the LB I and the first half of the LB II, and are generally associated with contemporary Cypriot White Slip and Base Ring forms. Most of these Greek imports consist of small amphoroid, piriform-bodied, short-necked jars, or the so-called “stirrup jar,” with a bulbous piriform body, false neck and side stirrup-handles joining shoulder to neck, or the squat carinated cylindrical-bodied, short-necked, round-based pyxis form. Mycenaean fabrics are very finely levigated and pale buff through pinkish-orange in color, often including small greenish-gold micaceous grits. Painted decoration is normally executed as combinations of framed thick and thin horizontal lines, all highly burnished to a glossy finish.

Figure 6 – Imports A. Egyptian. 6.1 MBA Tell el Yahudiye Plate; 6.2–6.3 MBA Tell el Yahudiye Juglets; 6.4 LBA Coarseware Jar; 6.5 LBA Candlestick Stand; 6.6 LBA Carinated Bowl; 6.7 LBA Small Jar; 6.8–6.9 LBA Hemispherical Bowls; B. Cypriote. 6.10 MBA Red on Black Globular Jug; 6.11 MBA Red on Black Bowl; 6.12 MBA White Painted III–IV Pendant–Line Style Juglet; 6.13–6.14 MBA White Painted IV–VI Cross–Line Style Juglets; 6.15 LBA Black Lustrous Wheel–made Ware Juglet; 6.16 LBA Red Lustrous Wheel–made Ware Spindle Bottle; 6.17–18 LBA White Shaved Dipper Juglets; 6.19 LBA Bichrome Wheel–made Jug; 6.20 LBA Bichrome Wheel–made Tankard; 6.21 LBA Monochrome Bowl; 6.22 LBA White Slip I Milkbow; 6.23 LBA White Slip II Milkbow; 6.24 LBA Base Ring I Bowl; 6.25–26 LBA Base Ring I Jugs; 6.27–29 LBA Base Ring II Painted Jugs; C. Mycenaean. 6.30–31 LBA Amphoroid Jars; 6.32–33 LBA Stirrup Jars; 6.34 LBA Carinated Cup. D. Hejazi. 6.35 Qureyah Painted Small Bowl.



The various forms were likely to have held fine scented oils and perfumed unguents.

HEJAZ QURAYYAH PAINTED IMPORTS

For much of the past 50 years, Qurayyah Painted ware was assumed to be an Iron Age fabric, even though occasional pieces had been reported in Bronze Age assemblages in the central uplands. Very recent excavations at the type site of Qurayyah have now demonstrated that elements of the “Qurayyah Painted ware” assemblage are to be dated within the LBA. Qurayyah Painted ware forms imported into Jordan are restricted to small flat-based, carinated outflaring-rim bowls, which may have served as drinking vessels. The Qurayyah fabric is normally fired orangey-pink in color, slipped in thick burnished buff to orange, and decorated with complex geometric painted motifs, generally executed in dark purple-brown paint. A modest but consistent presence in Jordanian upland central and southern later LBA period assemblages probably marks the beginning of regular trading

interaction between the Hejaz and upland east Jordan.

4. MISCELLANEOUS AND CULTIC/ RITUAL VESSELS (FIG. 7)

MBA miscellaneous vessel forms include lamps, potstands and miniature vessels, with the last-named normally associated with foundation deposits or votive cult practices. In the LBA, a variety of special-purpose forms were associated with civic temple rituals, including hollow-ring kernoi, large and small fenestrated conical cult stands, asymmetrical kidney-shaped hook-handled bowls, pipe-shaped incense holders, and animal-headed libation cups. More generic dual-use forms include trumpet-based shallow triangular-rimmed chalices, carinated globular-bodied goblets, and one-handled carinated tankard forms.

LAMPS

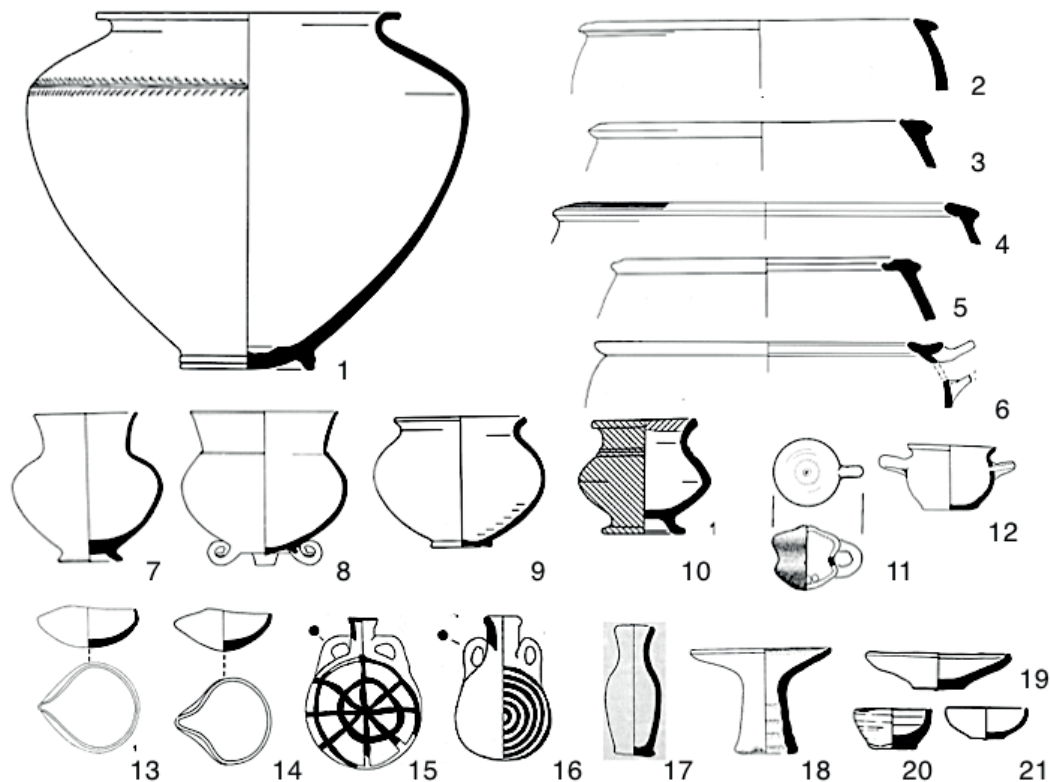
Early MBA “saucer lamps” had a shallow rounded saucer-bowl form, with a convex-rounded base and thin upright rounded rims. Spouts were formed through “pinching” the rim at one point and are normally quite

small. Later MBA lamps are larger and deeper bodied, often with slightly outflaring rounded rims. Spouts were more pronounced, and now often bear traces of burning from wicks. Early LBA lamps were quite similar to late MBA forms, although flanged, everted rims were more evident and spouts even more pronounced. Towards the end of the LBA, deep-bodied lamps frequently display a string-cut, slightly elevated flat base, with bodies tilted upwards at a slight angle. A rare subtype of lamp, the so-called “cup and saucer” form, consists of a normal saucer lamp with a small cup inserted into its central region. This form is normally associated with Egypt, and its presence in local Jordan Valley assemblages may indicate specific cult influence from Egypt.

POT STANDS

Pot stands were rare occurrences in MBA assemblages, normally most frequent early in the period, and reference Syrian forms. They display a simple upright cylindrical body (occasionally fenestrated), with a tooled triangular-profile base and simple upright rounded rim. Pot stands were

Figure 7 – Miscellaneous Forms.
 7.1 MBA Krater; 7.2–3 Early MBA
 Krater Rim Forms; 7.4–5 Late MBA
 Krater Rim Forms; 7.6 Late MBA
 Spouted Krater Rim Form; 7.7
 Early MBA Carinated Jar; 7.8 Late
 MBA Hoop-Footed Jar; 7.9 MBA
 Globular Jar; 7.10 LBA Carinated
 Squat Jar; 7.11 LBA Rattle; 7.12
 LBA Feeder Bowl; 7.13 MBA
 Lamp; 7.14 LBA Lamp; 7.15–16
 LBA Lentoid Pilgrim Flasks; 7.17
 MBA Miniature Bottle; 7.18 MBA
 MBA Miniature Funnel; 7.19 MBA
 Miniature Platter Bowl; 7.20 MBA
 Miniature Carinated Bowl; 7.21
 MBA Miniature Rounded Bowl.



employed to hold small and medium sized round-bodied vessels (jugs and small jars), presumably as part of tableware settings.

MINIATURE VESSELS

Miniature vessels occur in a wide variety of shapes, although most frequently as funnels, bottles, and small platter bowls. These miniatures are often quite coarsely fashioned in normative pale buff fabric, wheel-made with string-cut flat bases, ranging in size from 5 to 15 cm overall. They are normally found as part of later MBA foundation offering deposits associated with major civic buildings, or with funerary rituals, either carried out beside altars or standing stones, or (in very rare LBA examples) set into the rocky roofs of chamber tombs, located in cemeteries outside of city walls.

CULTIC VESSELS

The cultic paraphernalia of civic temples becomes ever more varied over the course of the LBA, perhaps reflecting the growing variety and complexity of cult practices. Although

featuring in civic cult ritual, these forms are often quite coarsely manufactured, perhaps as many were intended for only a single use, after which they were ritually broken and deposited in temple pit-fills.

Forms include large conical fenestrated cultic stands, often painted with friezes of geometric motifs, but occasionally with human and animal figures. The stands seem to have been employed to support very large platter bowls, used presumably for incense and other burnt offerings. Hollow-ring kanoi, with multiple openings around the ring, each normally topped with miniature vessels but occasionally with human and animal heads, were used to ritually blend different liquid offerings (oils, milk, water, fruit juices, honey) to form a single combined liquid offering, perhaps as part of annual “first-fruits” offering rituals. The “hollow-pipe and hand-cup” vessel form was probably used for burning incense, and perhaps served to deploy the smoke/vapors during pollution-cleansing rituals. The kidney-shaped bowl may have been used as a liquid (blood?) collection vessel, perhaps during animal sacrifice

rituals.

CONCLUSION

Middle and Late Bronze Age pottery forms were among the most varied and attractive ceramics produced in Bronze Age Jordan. The forms, functions and decorative modes of the MBA–LBA ceramic assemblages owe little to Early Bronze Age predecessors, and although there is a measure of “debased” continuity into the early phases of the Iron Age, the MBA–LBA period assemblages, broadly speaking, are distinctive across a thousand years of production.

The Iron Age and Persian Period

Larry G. Herr
(lherr@burmanu.ca)

Archaeologists like to break long periods into sub-periods. Generally, the Iron Age is divided into the following shorter date ranges:

- Iron Age IA (about 1200–1150 BC)
- Iron Age IB (about 1150–1000 BC)
- Iron Age IIA (about 1000–900 BC)
- Iron Age IIB (about 900–700 BC)
- Iron Age IIC (about 700–539 BC)
- Persian Period (539–330 BC)

We will look at the types of pottery assemblages found on archaeological excavations in Jordan from each one of these sub-periods. However, we provide just a sampling here of the most frequent types; many other less frequent types exist, as well. (See end of chapter for citations.)

IRON IA

This period included a few settlements that saw the transition from the Late Bronze Age to the Iron Age, such as Umayri Stratum 12, the major deposit from this period so far excavated in Jordan. Lifestyles in Jordan at this time tended to be oriented toward rural activities in small villages that included emphases on agriculture and herding of sheep and goats. The pottery assemblage of these people was, due to this social and economic world, somewhat limited in the variety of ceramic types.

The primary types of bowls included medium-sized carinated bowls [1] and larger, more open bowls with an inward thickened rim, triangular or oval [2]. Very large bowls are called kraters and were often semi-closed with varieties of “hammer” rims that had thickened

protrusions on both outer and inner sides [3]. Chalices were carinated bowls usually on top of high stem bases [4].

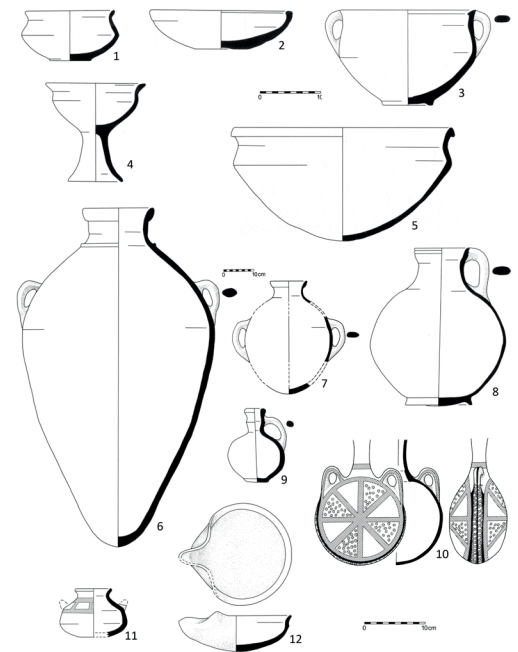


Figure 1 – Iron IA

One of the most interesting vessel types at all periods was the cooking pot with its rather crude-looking “ware” (clay mixture) made to withstand the heat expansion and contraction caused by placing the vessels directly in cooking fires. Cooking pots had a reddish-brown color and a round base so they would not tip over as the coals disintegrated in the fire and changed their ability to support the pots. The rims at the very beginning of the Iron IA period were everted and then turned up with a slightly thickened flange or a flanged triangular rim [5]. They were clear descendants of the triangular Late Bronze Age rims.

The closed forms were dominated by a very large type of storage vessel with two to four handles called a

JORDAN MAP

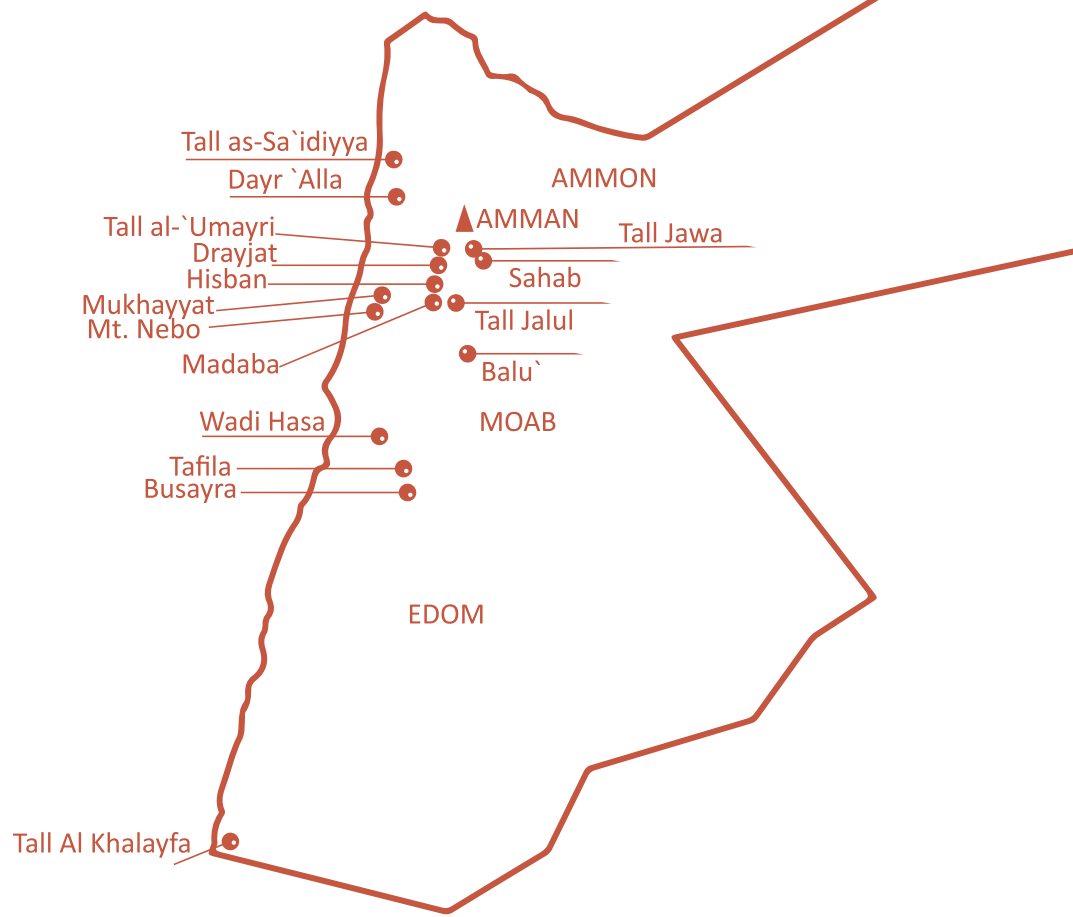
Sites in Pottery of Jordan Manual

Iron Age & Persian Period
1,200–332 BC

“pithos” (plural “pithoi”) [6]. Often standing about a meter high, pithoi constituted the ancient household pantry, storing such items as barley, wheat, lentils, chickpeas, and, if sealed in some way, probably liquids, such as wine, olive oil, and water. Well over 50 of these large vessels were found in one room at `Umayri and one still had burned barley grains in the base. In this early period the necks were high, with the triangular or oval rims flaring out and a collar (or ridge) at the join of the neck with the shoulder. These are called “collared pithoi,” or more traditionally, but inaccurately, “collared-rim store jars.”

“Jars” were not as large as pithoi and usually had two handles [7]. (Note the difference in scale for the drawings of the pithos and jar [6–7]). Jars may have stored the same items as pithoi, with the addition of beer made by throwing bread scraps into water and letting the yeast in the bread form enough alcohol to kill bacteria and viruses in the often dirty water. Jars could also be used to fetch water at the well, though smaller jugs, often shaped like small jars but with just one handle, could be used, as well [8]. It is often difficult to tell jars from jugs when only the rim is present. Generally, smaller diameters indicate jugs, but that is not always the case. Both jars and jugs had thickened rims and upright to flaring necks at this time.

The smallest type of vessel was the juglet, used to dip food materials out of large storage vessels or to contain valuable oils and other pricey liquids



used sparingly [9]. Lentoid flasks were usually painted, often with pie shaped painted patterns [10] or concentric circles or spirals. A squat form of juglet, often painted, was a small Greek-looking vessel called a pyxis [11].

Lamps were small, shallow bowls with part of the rim pinched into a nozzle to hold a flax wick. The rims of most lamps had a horizontal flange circling the top, except for the nozzle area [12].

IRON IB

The primary pottery vessels changed little from Iron Age IA, but a few new forms were added to the assemblage. The overall shape of closed vessels now tended to have more upright necks and rims.

The small carinated [1] and larger shallow bowls with interior thickened rims [2] continued throughout the Iron I period, but bowls with everted rims

began to appear, probably a bi-form of the carinated bowl. Large kraters [13] became more complex in their rims, but had the same overall shape of a large mouth and an even larger globular shape to the body.

Cooking pots were made with the same type of expandable ware as those of Iron IA, but now had more upright rims, sometimes appearing with ridges or grooves on the thickened rim [14]. Similarly, the necks of the large collared pithoi at `Umayri became shorter and more upright [15]. A few of these pithoi rims have been found at Balu` and in surveys south of the Wadi al-Hasa in the region of Busayra and Tafila. A similar development occurred in smaller jars and jugs, now sometimes having a ridge on the neck, especially at sites in the Jordan Valley [16]. One type of popular jug had a rim that turned out and then up again, forming a kind of lip, possibly advancing its pouring ability [17]. Juglets were similar to Iron

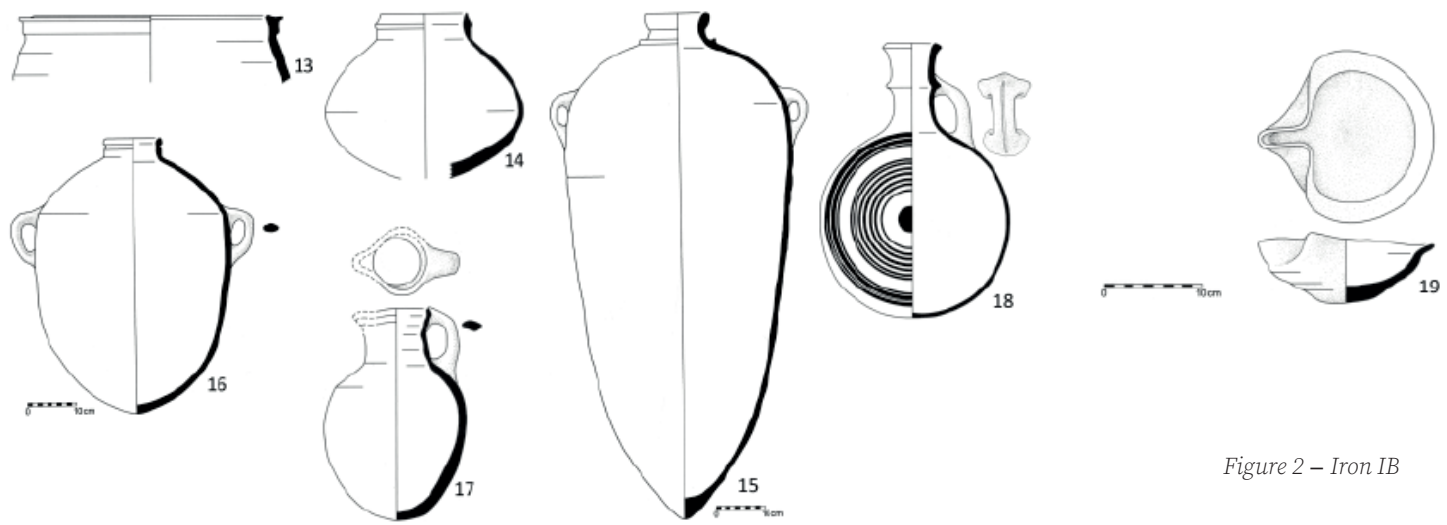


Figure 2 – Iron IB

IA types, and remained somewhat rare. The decoration on flasks now seems to have been limited to concentric circles [18].

Lamps were similar to those of Iron IA, but the horizontal flange was often somewhat longer [19].

IRON IIA

The best assemblage of Iron IIA pottery was found at Hisban in Stratum 18B and ʿUmayri Stratum 10, including the final stages of the carinated bowl [1] and the shallow bowl with interior thickened rim [2]. But it was a time of hemispherical bowls [20], shallow bowls with a flat top and interior and/or exterior thickened rims [21], and shallow bowls whose bodies turned up vertically toward a simple rim [22]. One of the best-known aspects of Iron IIA bowls from across the Jordan River was their hand burnishing. So far, I have seen only one example in 50 years of digging in central Jordan on the plateau.

Kraters tended to have everted rims [23], while a prominent new form began with a thickened hole-mouth rim [24]. Carinated chalices continued [4], but two new drinking vessels began to appear: a mug with a globular body [25] and a tripod cup with a low carination [26]. Although very rare in Jordan, the “scoop” began to appear at this time [27].

Cooking pots were again made of the same ware types and rounded bases

as earlier, but showed a slight inward slope to the rims. There was also a pronounced movement toward simple rims with an exterior ridge beneath. Called “ridged-rim cooking pots” these became especially frequent in Iron IIB and continued more rarely into Iron IIC, as well [28]. They were prominent throughout Jordan and were also found to the west.

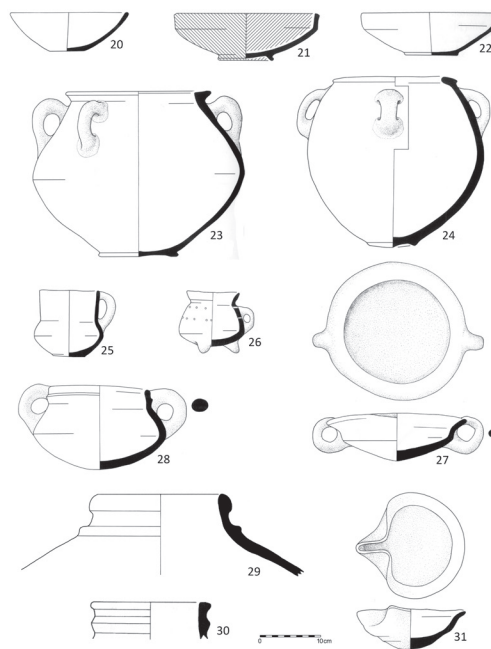


Figure 3 – Iron IIA

Although collared pithoi ceased to be made west of the Jordan, a nice upper portion was found in Stratum 9 at ʿUmayri [29]. It advanced the upright stance of Stratum 10 examples by turning the neck and rim inward and

placing the collar ridge fairly high, almost on the neck. Most jars and jugs from this period had upright necks and rims, though a few bent slightly outward or inward [30].

Lamps still carried the strong horizontal flange [31].

IRON IIB

With the Iron IIB period we begin to see the most significant developmental trend in Iron Age ceramics in Jordan. It is the movement toward five territorial assemblages.

1) The northern group centered around Irbid follows many aspects of the Amman group to the south, but adds forms from the north (Syria) and the west.

2) The north-central group centers around Amman and is characterized by a variety of bowls with a highly burnished rusty-red slip; the overriding presence of ridged cooking pots; and the continuation of collared pithoi. Some archaeologists identify it with the Ammonite kingdom, because it seems to correspond well with their projected borders based on ancient texts.

3) The south-central group, in the area from Madaba in the north to the Wadi al-Hasa in the south, was more intensively settled in this period than ever before. Its pottery was characterized by a light brown (“buff”) slip that was highly burnished and even colourfully painted with white and/or dark brown/black lines.



Some archaeologists identify the group with the Moabite kingdom, because the borders of the pottery seem to correspond with the Moabite borders talked about in the Mesha Inscription (or “Moabite Stone”) and the biblical text.

4) The southern group, also called “Edomite” after the kingdom or chiefdom known from ancient texts, was centered at modern Busayra. It may have included some of the pottery at Busayra, the capital of the Edomite kingdom, where a large palace with Assyrian connections has been found. The Edomite group developed more slowly than the others and was more limited in scope and quantity of sites.

5) The sites in the Jordan valley tend to display a mix of the regional assemblages of the Irbid, Amman, and Madaba, with forms from west of the Jordan River, as well. We may consider it a genuine ceramic polymorph, and, for that reason, it is not as well defined as the other territories on the plateau. However, there are many excavated sites in the Valley.

The pottery of Iron IIB is best known in the region just south of Amman, especially at `Umayri, Tall Jawa, Hisban, and, somewhat less prominently, Sahab, all within about 12 km of each other. We will analyze the pottery by studying this assemblage and then show how the other regions differ or are similar.

Most bowls were well made with a thick, lustrous reddish-brown slip that was highly burnished inside and out, but less decorated forms also occur. There is a group of bowls with distinctive new rim forms that began at this time. Most frequent, perhaps, was a globular bowl with an upright simple

rim [32]. But almost as frequent was a form with in-turned rim at 90° [33]. Another type continued from Iron IIA and had several subtypes characterized by rims that were thickened on the inside, outside, or both and were flattened on the top [34]. It had a slight bend in the upper body like a modest carination. One distinctive form, already begun in Iron IIA, rose from the base and turned vertically upward to a simple, or slightly pointed rim [35].

The last two forms were widespread, also occurring west of the Jordan, where the last type was sometimes decorated with a shiny red slip. The globular bowls appear frequently in the Moab region where they could be painted with white or brown horizontal lines. Because the assemblage of Moab seems to have been a bit more limited in varieties of types than the Ammonite one, this bowl had a higher percentage of occurrences in Moab than in the Amman region. Moab also had the other distinctive forms, but with slight differences to that of the Amman region and fewer relative quantities. Dayr `Alla in the Jordan Valley also had these forms, but in much smaller ratios because of the occurrence of western bowl types there. The same is true for the north region, but there were other bowl types related to Syria.

The Iron IIB period saw the beginnings of a very shallow bowl we call a “plate.” They had three types of rims: simple [36], squared, and down-curving. They were represented in the north, as well.

Already begun in Iron IIA, the dominant type of krater sported a distinctive “holemouth” rim that was thickened and burnished on the exterior of the rim and sometimes the

upper body [37]. After the thickening, the bodies curved down into a large bowl shape. Other types of krater rims also occurred, but much more rarely. The holemouth kraters also occurred in Moab, but often with no burnishing. Like the bowls, they were often decorated with painted horizontal lines. Other regions did not seem to have this form, or, like the Jordan Valley, had the type only rarely.

The ridged rims of cooking pots that began in Iron IIA continued into Iron IIB and utterly dominated cooking pot rim forms all over Jordan, but they were more strongly in-turned than the Iron IIA examples, almost or at a 45-degree angle [38]. The color of the ware was usually a deep reddish brown.

Although collared pithoi were long gone from west of the Jordan River by Iron IIB times, they still continued in large numbers in the Amman region. By Iron IIB they were virtually holemouth vessels with strongly inward-leaning necks, which were almost a continuation of the shoulder [39]. However, when the rim sherds extend down far enough, the bump at the transition from the shoulder to the neck (or a bit higher at times) kept the idea of a vestigial collar well represented. A few such pithoi have been found elsewhere, but only in regions close to Amman, such as Sahab, `Umayri, Tall Jawa, Hisban, Madaba, Mukhayyat, and Jalul. They do not seem to have existed farther south or north.

Otherwise, storage of supplies seems to have been kept in smaller jars with upright necks, a variety of thickened rims [40], and ridged necks as in the Iron IIA example above



[30]. Some were small jars often called amphorae (singular amphora) [41] or smaller examples called amphoriskoi (singular amphoriskos) [42]. These could have painted bands. Jugs and juglets were similar to earlier periods [43], but could have painted horizontal lines in Moabite territory. The flasks were often undecorated and one side could be larger than the other, presumably to hold more liquid [44].

Lamps were very similar to earlier varieties [45], though the flanged rim seems to become larger.

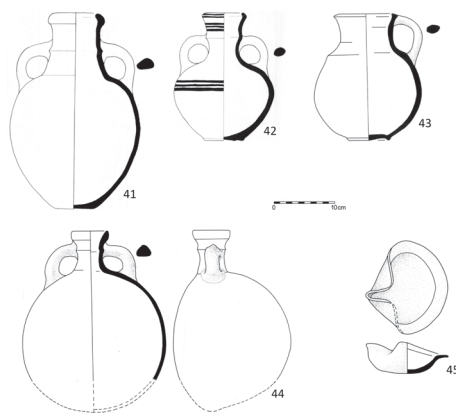


Figure 5 – Iron IIB (cont.)

IRON IIC

The Iron IIC period was one of the high points of settlement in Jordan from north to south. It was also the time when distinct cultures existed in the territorial kingdoms of the highlands, with rich varieties of ceramic expressions (Herr 1997). The region with the most finds is again that of Amman and its immediate south. Because the Amman region has produced a prodigious amount of published pottery, we now understand its assemblage better than the others. We will again use it as a starting point. By this time the ceramic assemblage of the region has become easily recognizable with significant differences from the surrounding regions.

Bowls were not as highly slipped and burnished as the Iron IIB forms, but they could sometimes sport a decorative type of burnish made with a manganese tool that produced a series of gray spirals around the bowl after firing. Bowls could also be painted with horizontal lines.

One striking phenomenon of the Iron IIC bowls of the Amman region was the development of “black-burnished ware,” in which most bowl types could

be fired to a black color in the kiln. These were usually nicely burnished and present an impressive shiny “look.” They are considered a special type of ware by most researchers, and ancient householders may have bought them as “classy” types of dishes. Black-burnished ware seems to have been limited to the Amman region, but it apparently could be traded. One example was found at Batash.

The most ubiquitous type of bowl is called the “instep bowl” [46]. The simple rim was pushed inward, forming an interior “step.” Broken rims of this type of bowl are found by the thousands on tell sites of this period, probably because the ware was not very thick and the “step” caused a weakness. There was a variety of production qualities for these bowls, as well, ranging from fine wares, nicely slipped and burnished, to rather crude, unslipped and unburnished examples.

Other typical bowl types included a fine deep bowl made of thin ware with a simple rim and a small horizontal ridge below the rim [47]. These could range from medium-size bowls to small cups. Another type had an everted rim with grooves in the body immediately below the rim [48].

The typical bowls of Iron IIB mentioned above [32–34] continued into Iron IIC but gradually disappeared, that most were gone by the Persian Period. The globular bowl [32] continued to be strongly represented in the Moab region during Iron IIC, but it tended to have more painted horizontal lines than those in the Amman region. The krater pictured here was patterned after this bowl form [58].

The same types of Iron IIB plates increased in number during Iron IIC times [49], including those with a

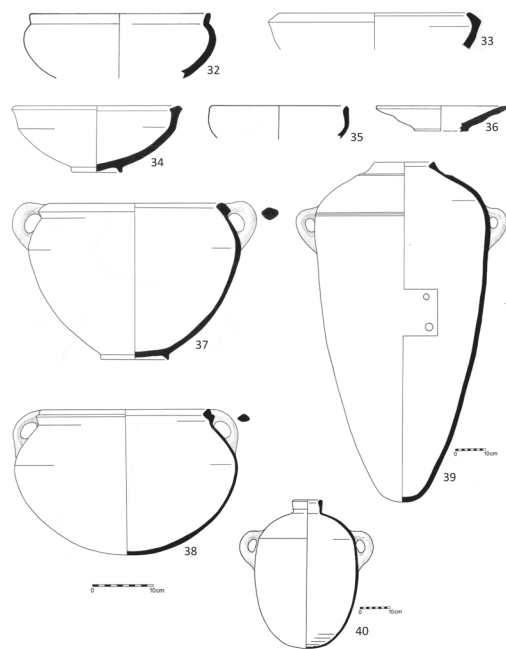


Figure 4 – Iron IIB



squared rim [50] and those that turned down slightly [51]. However, a new, very fine form appeared for the first time [52] during Iron IIC. Made of very thin ware (thickened somewhat in the illustration) often highly slipped and burnished, the rim turned up vertically for 8–12 mm and had one or two shallow grooves in the vertical section. Because of the thinness of the ware, this vessel is usually found in small pieces, but it had a striking look and undoubtedly was considered an “elite” type of vessel.

The Ammonite assemblage had several minor bowl-like ceramic forms that appeared infrequently in the Moab region and even more rarely elsewhere. These included a very thick bowl in a dark ware and sometimes slipped in a dark gray color. The vessel shape and color seem to copy small basalt stone mortars used for grinding food materials [53]. This example also suggests a grinding function by the chevron-shaped punctures in the bowl’s interior.

There also were two cup-like vessels. One, the tripod cup [54], had three small feet, an in-curved lip, and relatively sharp bends in the upper and lower body. The other cup-like vessel was virtually the same as the Iron IIA form and was called a “mug.” Like today’s coffee mugs, they sported a handle, relatively thick ware, a globular lower body, and an upright upper body [55—this example is from Iron IIA, but is exactly like those of Iron IIC]. These vessels were not very frequent, but they occurred regularly enough to make them a part of the assemblage. Both vessels also occurred in the Moab region. Edomite bowls from Busayra had unique forms and were heavily painted [56].

Kraters continued the holemouth form [57], as in Iron IIB. A globular bowl

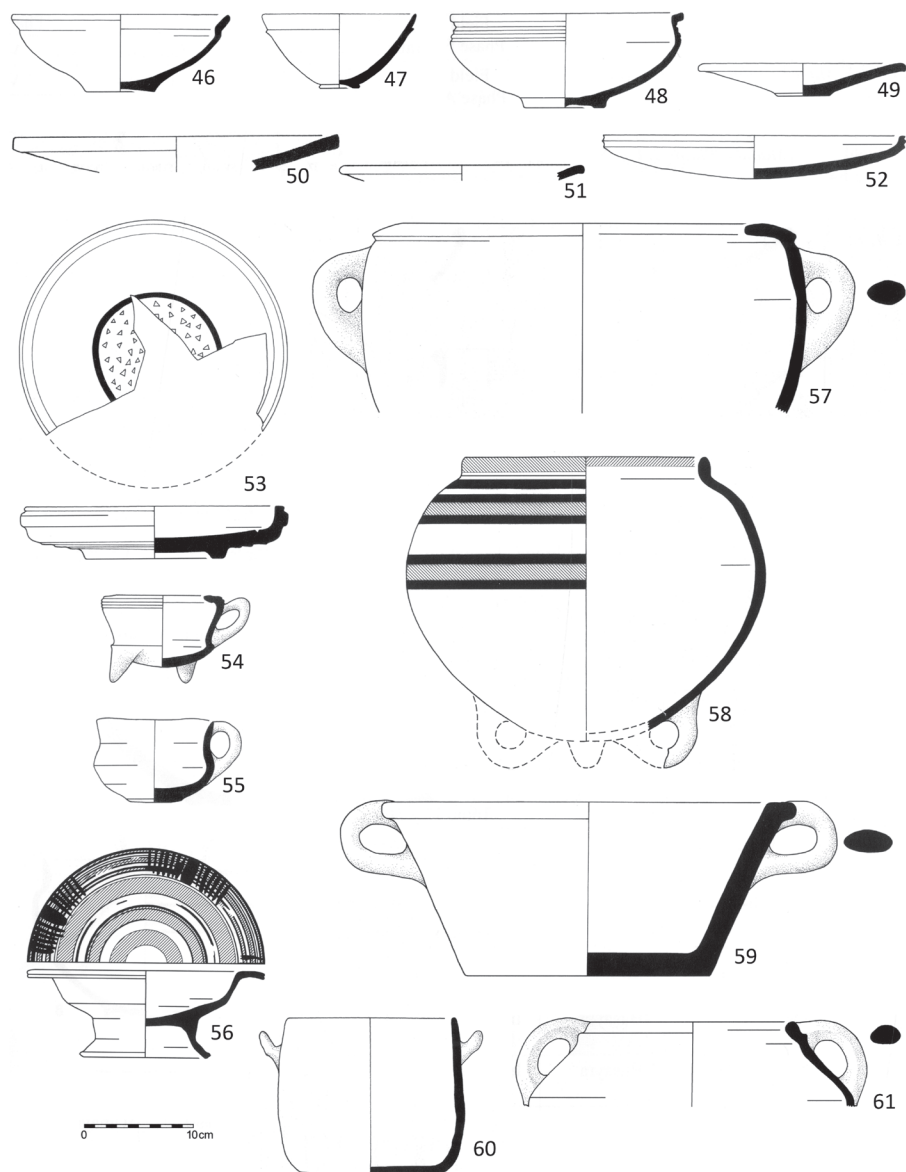


Figure 6 – Iron IIC

from the Moab region is so large it can be called a krater [58]. It had a series of multicolored painted stripes and three handles for a base that allowed it to sit level securely. A new large vessel called a “vat” began to appear in limited numbers during this period [59]. It was made of very thick ware and had a flat base, a flaring sidewall, and an everted rim, and it was often coated with a white slip. It occurred almost uniquely in the Ammonite region.

Primarily occurring in the territory of Edom was a crudely handmade series of vessels called “Negevite ware,” often associated with “Midianites.” It occurs in both southern Jordan and to the

west, across the Araba. We provide one example [60], but there were several other types.

The ridged cooking pot continued throughout Jordan, but it could lean inward even more than the Iron IIB forms [61]. Moab potters developed a distinctive thickened, squared rim that turned up at the end of its mostly horizontal shoulder [62]. This rim has even been found infrequently at several sites in the Jordan Valley. The Ammonite region developed its own distinctive form. The holemouth rim displayed a “bulbous” form [63], thickened and rounded, that could be somewhat pointed at the top at



times, especially late in the period. Whereas the ridged rim decreased in popularity in the Amman and Moab regions, it became virtually the only form in Edom, where it is often called, erroneously in my view, the “Edomite cooking pot.”

The collared pithos continued into this period, but the neck now leaned so far inwards that it was a holemouth form with a bulbous rim [64]. But the original collar was still present in vestigial form as a wave, bump, or groove just below the rim. Like earlier collared pithoi, this vestigial collar could be doubled at times, as in our illustration. This type of pithos is ubiquitous in the Amman region with thousands of rim sherds discovered at `Umayri alone. A second type of pithos had a top like a holemouth krater, but instead of the body turning inward to the base as it did with kraters, it bulged outward and then descended gradually toward the base about a meter beneath the rim [65]. If only the rim is present, it is impossible to know whether the original vessel was a krater or a pithos. Our illustrated example also has a potter’s mark and finger impressions.

The necks on jars from the Amman region almost always leaned inward toward triangular, thickened rims [66]. Some of these jars had very small rim diameters, as in this example; the rest of the jar was shaped like a “sausage.” Sometimes the necks had several shallow waves [67]. Jugs can be separated from jars at this time not only by the presence of just one handle but also by their upright necks leading to triangular, thickened rims [68]. A distinctive type of jug appeared in the southern part of Edom, especially at Aqaba (Khalayfah) [69]. An Assyrian type of vessel, a “bottle,” has been

found in tombs in the Amman area [70]. Juglets come in several forms.

Lamps tended to be very shallow with somewhat larger flanges than those of earlier periods, and with bases that often arched upward [71].

The pottery of the Jordan Valley sites had several of these forms from the Amman region, but not nearly in the same percentages as the plateau sites. There was a mixture of forms from across the Jordan River and the north, as well. Perhaps most interesting was the infrequent but persistent Moabite cooking pot at several valley sites, including Mazar and as far north as Sa`idiyya. They have also recently been found at Mukhayyat (near Mt. Nebo). Perhaps there was a trade route that skirted to the west of Ammonite territory and descended into the valley.

THE PERSIAN PERIOD

The Persian Period was fairly distinct west of the Jordan River, but on the Jordanian plateau there was very little sign of a break in the ceramic assemblages. One hallmark from the west was a large thick bowl called a “mortarium,” but it was almost non-existent in Jordan on the plateau. Another hallmark was the presence of Greek Attic ware, especially along the Mediterranean coast. Because Jordan is removed from the coast, however, we have found fewer than ten pieces of broken Attic ware at `Umayri, and it is similarly rare at other sites. Instead, the Iron IIC pottery carries on unabated, even though there were several inscriptions and seals that were part of the bureaucracy of the Babylonian and Persian Empires. Indeed, there were no signs whatsoever of destructions that might signal the changeover from

the Babylonian Empire to that of the Persians.

Most of the settlements in Jordan slowly disappeared during the course of the Persian period and did not return in any number until the second half of the Hellenistic Period. It is certain that early Hellenistic sites existed; one may have been a fort near `Umayri called Drayjat, excavated by the `Umayri team in 1989.

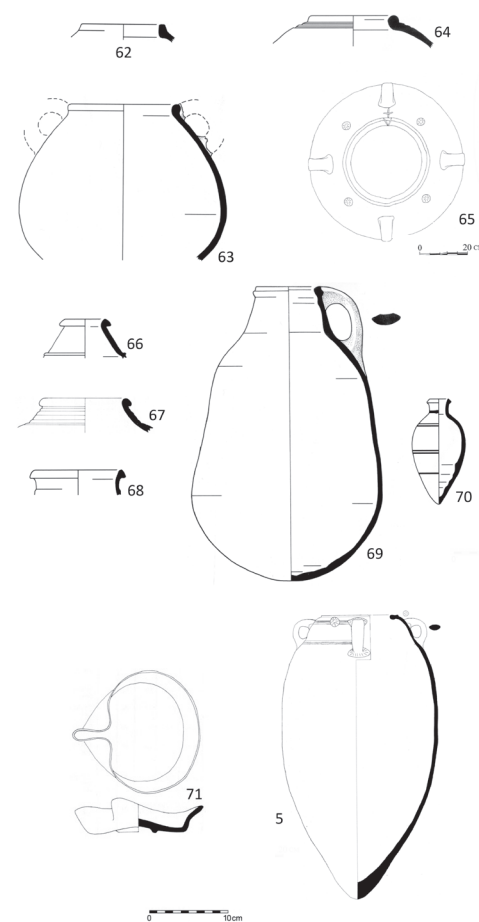


Figure 7 – Iron IIB (cont.)



ILLUSTRATIONS

	Vessel	Provenance	Gitin or MPP Volume Source	Original Source	Artist
Figure 1: Iron IA					
1	Bowl	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 1.3.1:1	Harding & Isserlin 1953, p. 43, Fig. 13:40	Marina Zeltser
2	Bowl	Baq`ah Valley	Drawing from Gitin Vol 1: Pl. 1.3.1:12	Baq`ah Valley, Fig. 49:5	Marina Zeltser
3	Krater	Baq`ah Valley	Drawing from Gitin Vol 1: Pl. 1.3.2:4	Baq`ah Valley, Fig. 51:25	Marina Zeltser
4	Chalice	Baq`ah Valley	Drawing from Gitin Vol 1: Pl. 1.3.2:4	Baq`ah Valley, Fig. 51:25	Marina Zeltser
5	Cooking Pot	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.3:1	MPP 6: Fig. 4.28:1	Marina Zeltser
6	Pithos	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.4:5	MPP 3: Fig. 4.14:1	Marina Zeltser
7	Jar	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.6:1	MPP 3: Fig. 4.26:4	Marina Zeltser
8	Jug	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.7:2	MPP 2: Fig. 3.4:8	Marina Zeltser
9	Juglet	Baq`ah Valley	Drawing from Gitin Vol 1: Pl. 1.3.7:11	Baq`ah Valley, Fig. 53:46	Marina Zeltser
10	Flask	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.8:1	MPP 3: Fig. 4.28:2	Marina Zeltser
11	Pyxis	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.8:8	MPP 4: Fig. 4.32:7	Marina Zeltser
12	Lamp	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.9:1	MPP 3: Fig. 4.28:1	Marina Zeltser
Figure 2: Iron IB					
13	Krater	Mudayna al–`Alia	Drawing from Gitin Vol 1: Pl. 1.3.1:8	Routledge 2000, p. 44: Fig. 6:5	Marina Zeltser
14	Cooking Pot	Mudayna al–Mu`arraja	Drawing from Gitin Vol 1: Pl. 1.3.3:8	Olivarri 1983, p. 176: Fig. 6:5	Marina Zeltser
15	Pithos	`Umayri	Drawing from Gitin Vol 1: Pl. 1.3.5:4	MPP 5: Fig. 6.2:1	Marina Zeltser
16	Jar	Dayr`Alla	Drawing from Gitin Vol 1: Pl. 1.3.6:9	Deir`Alla I, Fig. 62:30	Marina Zeltser



17	Jug	Baq`ah Valley	Drawing from Gitin Vol 1: Pl. 1.3.7:5		Marina Zeltser
18	Flask	Mazar	Drawing from Gitin Vol 1: Pl. 1.3.8:11	Yassine 1988, p. 122, Fig. 2:1	Marina Zeltser
19	Lamp	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 1.3.9:8	Piccirillo 1975, Pl. 66:Fig. X:1a–b	Marina Zeltser

Plate 3: Iron IIA

20	Bowl	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.1:1	Thompson 1986, p. 342, Fig. 5:7	Marina Zeltser
21	Bowl	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.1:6	Tubb 1988, p. 42, Fig. 19:4	Marina Zeltser
22	Bowl	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.1:3	Thompson 1986, p. 342, Fig. 5:8	Marina Zeltser
23	Krater	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.4:4	Thompson 1986, p. 340, Fig. 4:5	Marina Zeltser
24	Krater	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.4:2	Piccirillo 1975, Pl. 50:2	Marina Zeltser
25	Mug	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.3:1	Piccirillo 1975, Pl. 62:6	Marina Zeltser
26	Tripod Cup	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.3:3	Piccirillo 1975, Pl. 60:5	Marina Zeltser
27	Scoop	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.3:4	Tubb 1990, p. 30, Fig. 14:7	Marina Zeltser
28	Cooking Pot	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.6:2	Tubb 1990, p. 30, Fig. 14:6	Marina Zeltser
29	Pithos	`Umayri	Drawing from MPP 10: Fig. 7.14	Herr 2022	Larry Herr
30	Jar	Hisban	Drawing from Hisban 11: Fig. 2.20:5	Herr 2012	Larry Herr
31	Lamp	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.12:5	Piccirillo 1975, Pl. 66:1	Marina Zeltser

Figure 4: Iron IIB–1

32	Bowl	`Umayri	Drawing from MPP 7: Fig. 7.48:15	Herr 2017	Larry Herr
33	Bowl	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.2:14	Sa`idiya Tell, Fig. 2:1	Marina Zeltser



34	Bowl	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.2:10	Sa`idiya Tell, Fig. 10:18	Marina Zeltser
35	Bowl	`Umayri	Drawing from MPP 9: Fig. 7.11:8	Herr 2020	Larry Herr
36	Plate	`Umayri	Drawing from MPP 7: Fig. 7.49:20	Herr 2017	Larry Herr
37	Krater	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.5:1	Sa`idiya Tell, Fig. 12:15	Marina Zeltser
38	Cooking Pot	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.7:6	Sa`idiya Tell, Fig. 6:37	Marina Zeltser
39	Pithos	Tall Jawa	Drawing from Gitin Vol 1: Pl. 2.6.8:4	Daviau 1992, p. 151, Fig. 4:left	Marina Zeltser
40	Jar	Tall Jawa	Drawing from Gitin Vol 1: Pl. 2.6.9:8	Daviau 1993, p. 331, Fig. 5:6	Marina Zeltser

Figure 5: Iron IIB–2

41	Amphora	`Umayri	Drawing from MPP 1: Fig. 19.5:29	Herr 1989	Larry Herr
42	Amphoriskos	`Umayri	Drawing from MPP 1: Fig. 19.6:17	Herr 1989	Larry Herr
43	Jug	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.11:2	Sa`idiya Tell, Fig. 5:3	Marina Zeltser
44	Flask	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.12:2	Sa`idiya Tell, Fig. 11:17	Marina Zeltser
45	Lamp	Sa`idiya	Drawing from Gitin Vol 1: Pl. 2.6.12:7	Sa`idiya Tell, Fig. 5:13	Marina Zeltser

Figure 6: Iron IIC–1

46	Bowl	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.1:2	MPP 2: Fig. 8.8:3	Marina Zeltser
47	Bowl	Amman	Drawing from Gitin Vol 1: Pl. 3.6.1:3	Adoni Nur tomb: Harding and Tufnell 1953, Fig. 21:73	Marina Zeltser
48	Bowl	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.1:8	MPP 1: Fig. 19.8:12	Marina Zeltser
49	Plate	Tall Jawa	Drawing from Gitin Vol 1: Pl. 3.6.1:11	Reg. No. V 803	Marina Zeltser
50	Plate	`Umayri	Drawing from MPP 9: Fig. 7.10:10	Herr 2020	Larry Herr



51	Plate	`Umayri	Drawing from MPP 9: Fig. 7.11:13	Herr 2020	Larry Herr
52	Plate	Amman	Drawing from Gitin Vol 1: Pl. 3.6.1:10	Tomb: Harding and Tufnell 1953, Fig. 21:51	Marina Zeltser
53	Mortar	Tall Jawa	Drawing from Gitin Vol 1: Pl. 3.6.1:13	Daviau 1997b, p. 29, Fig. 8:14	Marina Zeltser
54	Tripod Cup	Amman	Drawing from Gitin Vol 1: Pl. 3.6.1:15	Harding 1951, p. 39, Fig. 1:11	Marina Zeltser
55	Mug	Madaba Tomb	Drawing from Gitin Vol 1: Pl. 2.6.3:2	Piccirillo 1975, Pl. 62:10	Marina Zeltser
56	Bowl	Busayra	Drawing from Gitin Vol 1: Pl. 3.6.5:8	Busayra, Fig. 9.5:3	Marina Zeltser
57	Krater	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.2:1	MPP 4: Fig. 3.32:13	Marina Zeltser
58	Krater	Dhiban	Drawing from Gitin Vol 1: Pl. 3.6.4:5	Tomb 17: Dibon 2, Fig. 24:26	Marina Zeltser
59	Vat	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.1:17	MPP 4: Fig. 3.36:6	Marina Zeltser
60	Negevite ware	Khelayfah	Drawing from Gitin Vol 1: Pl. 3.6.5:2	Kheleifeh, Pl. 12:5	Marina Zeltser
61	Cooking Pot	Aroer	Drawing from Gitin Vol 1: Pl. 3.6.4:7	Olavarri 1965, p. 86, Fig. 2:8	Marina Zeltser
Figure 7: Iron IIC–2					
62	Cooking Pot	Balu`	Drawing from Gitin Vol 1: Pl. 3.6.4:6	Worschech 2000, p. 521, Fig. 1:2	Marina Zeltser
63	Cooking Pot	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.2:6	MPP 1: Fig. 19.17:8	Marina Zeltser
64	Pithos	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.3:1	MPP 2: Fig. 3.32:3	Marina Zeltser
65	Pithos	`Umayri	Drawing from MPP 7: Fig. 7.45:1	Herr 2017	Larry Herr
66	Jar	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.3:4	MPP 1: Fig. 19.12:3	Marina Zeltser
67	Jar	`Umayri	Drawing from MPP 1: Fig. 19.5:15	Herr 1989	Larry Herr
68	Jug	`Umayri	Drawing from Gitin Vol 1: Pl. 3.6.3:6	MPP 1: Fig. 19.6:8	Marina Zeltser

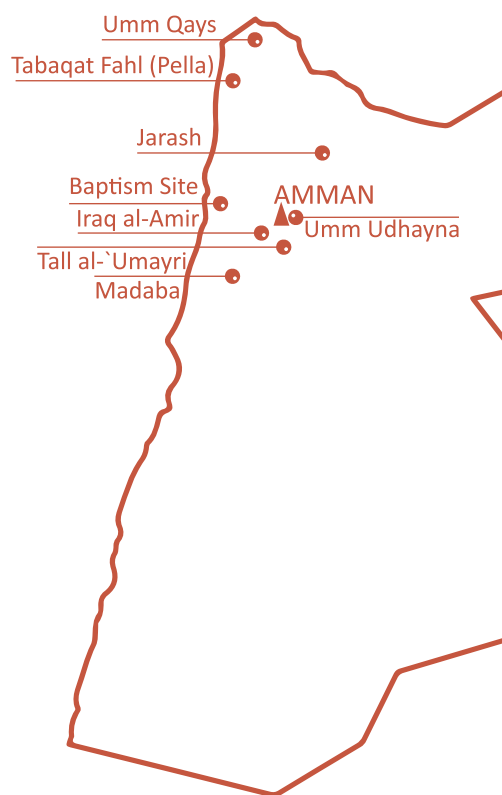


69	Jug	Khelayfah	Drawing from Gitin Vol 1: Pl. 3.6.8:3	Kheleifeh, Pl. 20:1	Marina Zeltser
70	Bottle	Amman	Drawing from Gitin Vol 1: Pl. 3.6.3:10	Adoni Nur tomb: Harding and Tufnell 1953, Fig. 22:90	Marina Zeltser
71	Lamp	`Umayri	Drawing fromn MPP 1: Fig. 19.17:16	Herr 1989	Larry Herr

The Hellenistic Period

Adeeb Abu Shmais
(adeebabushmais@gmail.com)

JORDAN MAP
Sites in Pottery of Jordan
Manual
The Hellenistic Period
332-63 BC



The extension of the Macedonian rule after 332 BC in the eastern regions, beginning with Asia Minor (present-day Turkey), passing first through Syria, especially in the north, resulted in a special position for cities that acquired a distinctive independent status within these regions (the period after the Battle of Ipsos, between 301 BC and 201 BC, is considered the first stage).

The southern region of Syria and the desert area were almost forgotten, and the struggle of Alexander's successors, who followed the Seleucids or the Ptolemies, continued for more than a century, as the second stage began from 201 BC to 64 BC. That is why the local influence (local languages, architecture, and arts) continued until these wars ended around 195 BC. The Nabatean state was a local, influential Arab power; thus, civilization appeared in a Western model with an Eastern base and acquired this geotemporal designation (Hellenistic Period). Many sources covered this era such as historians like Flavius Josephus, the Roman author who wrote in the first century AD. Added to historical reports are the finds from archaeological excavations.

Hellenistic layers have appeared in sites such as Umm Qays and Jarash/Gerasa and 'Umayri. A coin dating back to 200 BC was discovered in a Hellenistic cemetery in Amman/Philadelphia (Ptolemy II). Other discoveries were made in Madaba, Iraq al-Amir and additional areas around Jordan.



CHARACTERISTICS OF HELLENISTIC POTTERY IN JORDAN

By using comparative studies in the process of classifying recovered pottery, one can identify fragments that date back to the early part of this period, the time of the Ptolemies and the Seleucids (from ca. 332 BC to 200 BC). Some of these ceramics were handmade and were heavy, such as jars with edges curved to the outside as well as saddles made of imported black-colored pottery.



Figure 1 – Pinched lamp, early Hellenistic/Iron III [E.S 103] (photo courtesy of Adeeb Abu Shmais)

Pottery of the Iron Age III/local Persian Period (Fig. 1) provided another mixing factor for the beginning of the Hellenistic period due to the presence of sherds of black Greek pottery (Fig. 2), and a thin, bright red one, which was considered Phoenician. In my opinion, this is perceived as a local development, that is, from native populations in the region, regardless of



the outsiders, whether they were occupying or settling in the region, even if some of these ceramics were imported. However, the change appeared on the surface of the imported Greek and Roman pottery, which then became very common and affected the original/local pottery in the whole Mediterranean region, not only Jordan.



Figure 2 – Imported Greek casserole [E.S 141] (photo courtesy of Adeb Abu Shmais)

Hellenistic pottery can be distinguished from Nabatean and Early Roman pottery, especially what was imported from the Aegean Sea/Aegean pottery, which started to be imitated at that point. The use of thin pottery in some shapes and variation in red-brown color started to appear; hence, it can be argued that the Nabatean pottery has a distinct connection to this period (Fig. 3).



Figure 3 – Early Hellenistic imitation types from Tall al-'Umayri agricultural complex (photo courtesy of MPP- 'Umayri)

EARLY PERIOD/IMPORTED POTTERY: 332–182 BC

This period produced pure black/red clay/paste, a glossy glaze (black or red) layer-well-levigated paste – quartz granules, sand, lime or Megarian and Rhodian ware. Surface decoration is minimal – the egg-and-arrow decoration with a print motif, using a tool like the roulette. It was used for the elite class in the community/chief farmers. Few of these were discovered because it was imported mainly from the trade hubs, Phoenicia and Cyprus.



Figure 4 – Imported, stamped Rhodian amphora handle [J.6316 K3] (photo courtesy of Adeb Abu Shmais)

The early period is characterized by the cooking jars, pans, fish plates, the Megarian molded bowls, Rhodian ware with distinctive handles (Fig. 4) and spindle utensils, as well as saddles of black paste that were made using molds, and some locally hand-made heavy jars from Pella, Umm Udhayna, and the Amman Citadel.

LATE PERIOD: 182 – 63 BC

Shapes similar to the imported pieces became common during this period; however, the local paste or areas differed completely as the sea mud has higher purity due to the continued precipitation. Manufacturers' skills may also have played a role in providing the shapes. In addition, the local decorative pattern may have added a new element that is dissimilar to the imported pottery (Fig. 5).



Figure 5 – Imitation Greek black ware lamp from the Amman Citadel [E.S 161 (1137)] (photo courtesy of Adeb Abu Shmais)



Figure 6 – Local Late Hellenistic amphora (photo courtesy of Adeeb Abu Shmais)

So, jar handles and their Greek seals were different. As well, the seal on bowls was not on a thin smooth surface body, but on a rough and textured surface. Therefore, visual inspection is necessary for the best classification of the local ware (Fig. 6). Oven temperatures were not the same as those used in manufacturing the imported jars. Hand-made saddles

with a local pattern appeared, including what was a continuation of shapes common in the Iron Age III in Rabbat Ammon and the Baptism site.

TREATMENT NOTES

Surface treatment: accurate surface finishing – red paint on both sides; egg and dart; palmette motifs; slipping; glazing, the imitation of imported forms.

Imitation Rhodian jar handles often just had a local stamp, were tall in shape, and had angled handles (Fig. 7).

Molding – rouletting – fish plates – spindle bottles (Fig. 8) – elongated jars – frying pan.

Bowls included casseroles – hemispherical and piriform.



Figure 7 – Late Hellenistic figural jar in the form of a camel with four miniature amphorae, with hole for filling the vessel with fluid, from Jarash [JCW 01.109 No 14] (photo courtesy of Adeeb Abu Shmais)

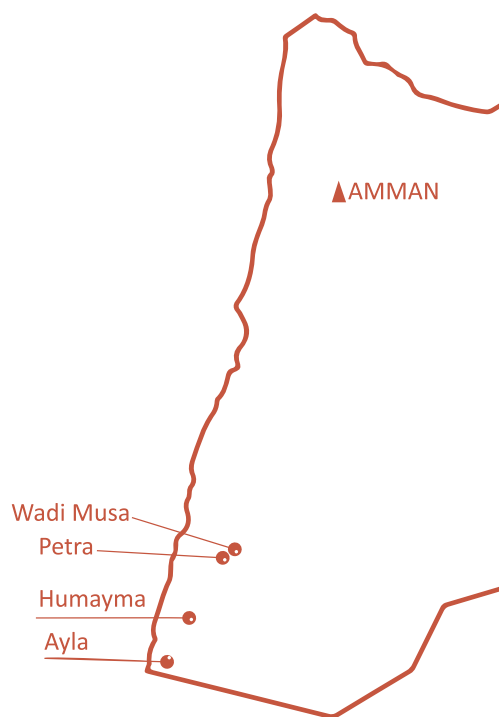


Figure 8 – Locally made late Hellenistic spindle bottle (photo courtesy of Adeeb Abu Shmais)

The Nabataean Period

Khairieh Amr
(khairiehamr@hotmail.com)

JORDAN MAP
Sites in Pottery of Jordan
Manual
Nabataean Period
4th century BC-AD 106



Introduction: The term “Nabataean” refers to a culture and is not restricted to the time period of the reign of the dynasty. The distinct Nabataean material culture does not coincide chronologically with the appearance of the Nabataean tribes in history (first concrete historical mention in 312 BC) or their political dominance (168 BC–AD 106). Archaeologically, no distinguishable Nabataean products, pottery or otherwise, have been dated so far to before circa 150 BC. At the other end, the annexation of the Nabataean Kingdom by the Romans in AD 106 does not signify the end of the Nabataean culture.

Nabataean potters produced varied types of pottery. Their fine, thin “eggshell” wares, however, are the most distinctive of all their products. These fine red wares were either plain, slipped or decorated with painting, impressing or rouletting. They were all wheel-made and the finest had walls of less than 3 mm thickness. The most common were the painted fine wares, which still formed less than 10% of the Nabataean repertoire at the height of its production in the late first–early second century AD.

PAINTED FINE WARES (FIG. 1)

The use of the Nabataean painted pottery is debatable; the classical bowls, with their curved bases and intricate designs on the interiors, are too awkward for practical use. Many researchers think they had a ritual function, but they were found in houses, as well as temples and tombs, along with the other types of pottery.

Most painted forms are open bowls with rounded bases. The fabrics and

painted designs developed over time with an evolution of styles rather than abrupt breaks. For clarity, the development may be divided into six types:

Type 1 (Fig. 1a): The first products are dated to the first half of the first century BC. The ware is very fine but relatively thick in pink/light red fabrics, with red paint in wide bands or wavy lines intersecting inside at the base. Later examples also have decorations of fine dots arranged in bands (Schmid 1996: Phase 1). The most common form is a semiglobular bowl with ring base.

Type 2 (Fig. 1b): By the second half of the first century BC, the typical thin wares started their appearance. The previous red lines and dots were transformed to delicate naturalistic leaves radiating from the center (Schmid 1996 Phase 2a). The most common form is an open rounded bowl with simple rim; ring bases are very rare.

Type 3 (Fig. 1c): During the first half of the first century AD, the ware became very fine and thin in light red fabrics. The designs—in deeper red paint—became more complex and the naturalistic leaf designs evolved into wreaths and clusters (Schmid 1996: Phase 2b). The wreaths were sometimes restricted to the rim area, with the center filled with horizontal fields of small leaf clusters defined by lines and dots (Schmid 1996 Phase 2c), while in the later examples the fields were sometimes filled with lattice designs (Schmid 1996: Phase 3a). The common form of the rounded bowl evolved into a “stepped” form, then a more open form with simple, slightly incurving rim.

Type 4 (Fig. 1d, e): The “Classical” production dates to around the middle–late first century AD, when the ware is



very fine, thin and metallic hard. The designs—in red and reddish-brown paint—became more stylized and varied but were still mainly vegetal. The most common form is a rounded bowl with small upright rim, but sometimes the rim was elongated and decorated with fine rouletting on the exterior. Painting also started to be applied to closed forms such as small vases and flared cups.



Figure 1a—Type 1: Early first century BC

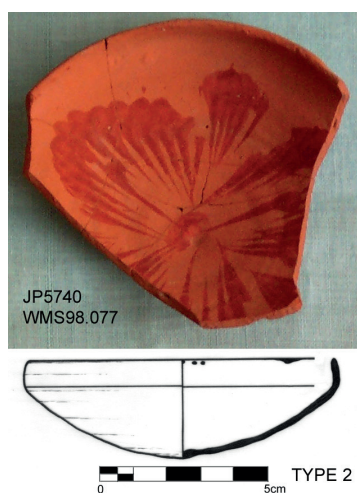


Figure 1b—Type 2: Late first century BC

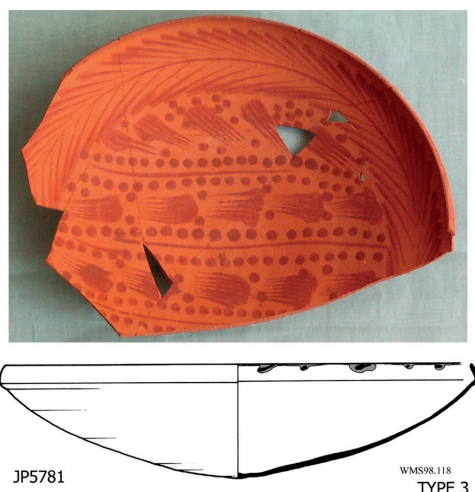


Figure 1c—Type 3: Early first century AD

Type 5 (Fig. 1f, g): By the end of the first and into the second centuries AD, while the ware stayed fine, very thin and metallic hard, the designs became stylized and solid in comparison with the earlier types and were in brown and black paint. The earlier examples have hatched backgrounds (Schmid 1996: Phase 3b) that disappear later (Schmid 1996: Phase 3c). Animal representations started to appear, especially birds eating bunches of grapes. The most common form is an open rounded bowl with small rolled rim, and painted closed forms are more common.



Figure 1d—Type 4: Mid 1st century ADAD

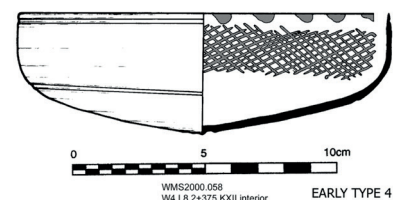


Figure 1e—Type 4: Mid-late first century AD

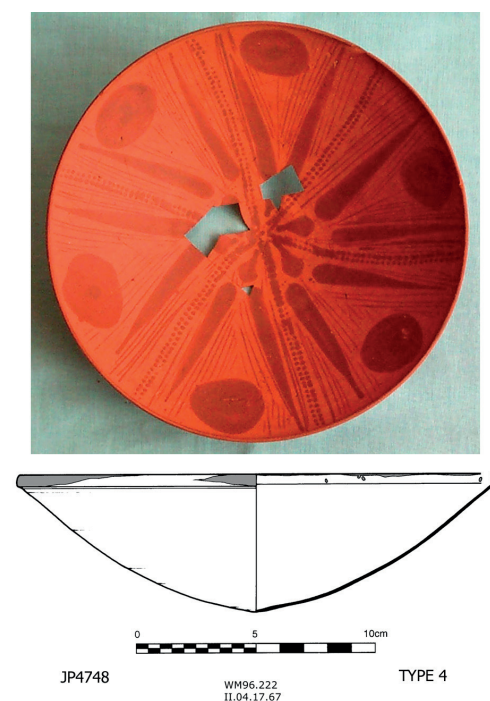
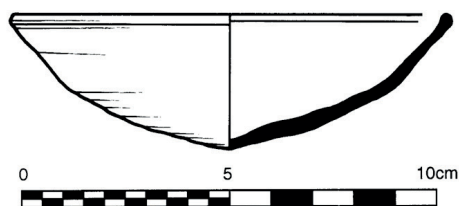


Figure 1f—Type 5: Late first century AD



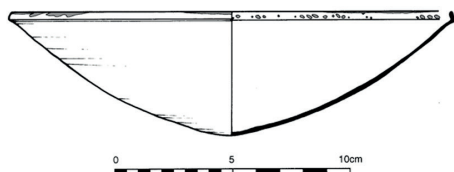
Type 6 (Fig. 1h–k): The decline of the tradition started at the end of the second/beginning of the third centuries AD. The ware deteriorated progressively, with thicker walls and more temper in the fabrics that were still red but sometimes also with yellow–cream fired surfaces due to advancements in kiln design, which achieved higher temperatures. The designs—in progressively duller black paint—became solid areas often applied on an obvious red slip (Schmid 1996: Phase 4). For the first time, painting was also applied to forms that were usually unpainted. The very last stages of production were in the fifth/sixth centuries AD, when the tradition deteriorated to rough designs on rough wares that are known in the Late Byzantine repertoire.



JP4527 (WM96.001)

EARLY TYPE 6

Figure 1h—Type 6: third century AD



JP4747 - WM96.221

EARLY TYPE 5

Figure 1g—Type 5: Late first–early second century AD

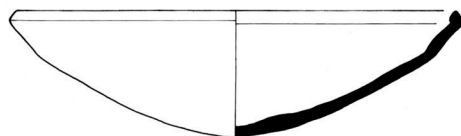
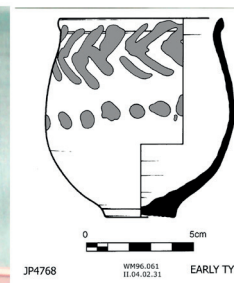


Figure 1j—Type 6: sixth century AD



JP4768

WM96.061

EARLY TYPE 6

Figure 1i—Type 6: third century AD

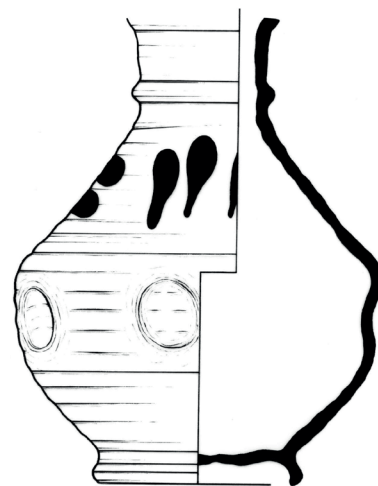


Figure 1k – Type 6: sixth century AD



ROULETTED/IMPRESSED FINE WARES (FIG. 2)

Rouletting was applied by means of small wheels, while impressed designs were made using small stamps. These two categories of decoration are most common on pots of the finest fabrics of the first century AD. The decorations were applied on various parts of the pots, including the handles and rims.

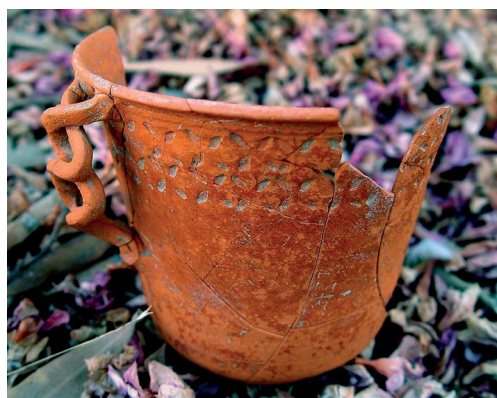


Figure 2 – Nabataean fine ware cup with rouletted decoration, from Wadi Musa (first century AD)

COARSE WARES

These are the less expensive, everyday vessels such as tablewares and jars, which were predominantly wheel made (Figs. 3–7). The forms were generally derived from the Hellenistic predecessors, and kept pace with Roman and, later on, Byzantine contemporaries. All throughout, however, even these mundane products had their own distinct Nabataean character, as did all the other forms of Nabataean art. Zoomorphic vessels in forms of various animals were also produced and may have had ritual or medicinal functions. Most were jugs in the form of the mighty ibex of the ash-Sharah Mountains (Fig. 8).

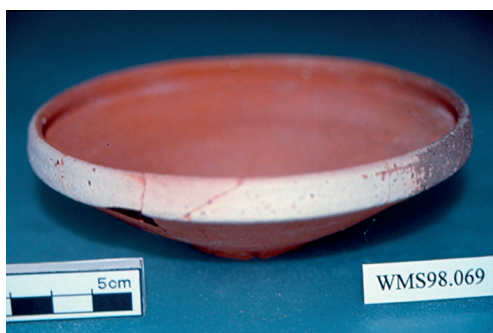


Figure 3 – Nabataean bowl from Wadi Musa (first–second century AD)



Figure 4 – Nabataean cup from Wadi Musa (first century AD)



Figure 5 – Nabataean unguentaria from Wadi Musa (first–third centuries AD)



Figure 6 – Small Nabataean dimpled jar from Wadi Musa (first–early second century AD)

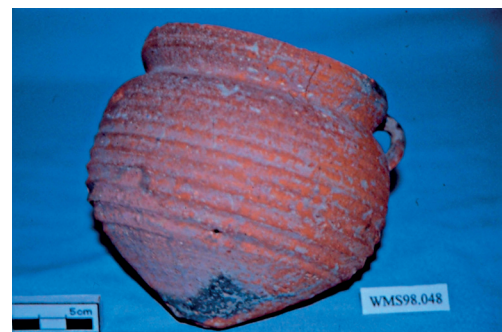


Figure 7 – One-handed Nabataean cooking pot from Wadi Musa (second century AD)

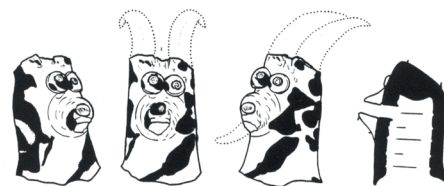


Figure 8 – The spout of a jug in the form of an ibex, decorated with black paint; from Wadi Musa (third century AD)



MOLDED WARES

Most Nabataean lamps were molded and had elements of Roman decoration, but they were Nabataean and did not look like any of the contemporary products (Fig 9). They usually had concave disks probably for the placement of unguentaria, thus using the heat from the lamps to gently heat the aromatic contents of the unguentaria.

Small molded figurines representing animals such as horses and camels were common; these were probably toys for children. There were also figurines of divinities and representations of youths wearing crescent-shaped pendants and raising the right hand in a gesture of blessing (Fig. 10); such figurines were kept at home or carried around to protect the bearers.



Figure 9 – Nabataean lamps from Wadi Musa (first century AD)

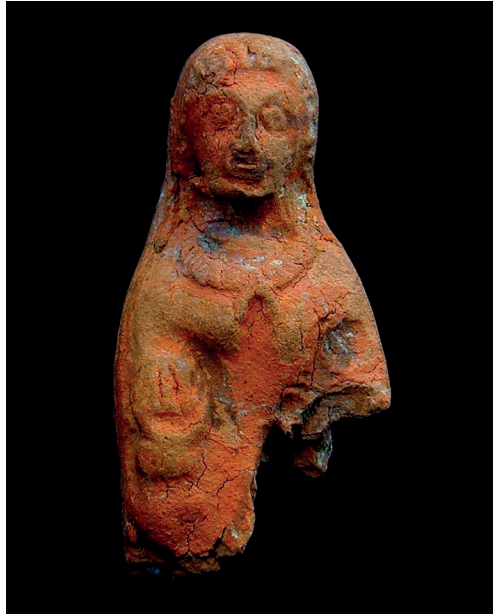


Figure 10 – Figurine of a youth with his right hand raised in blessing, from Wadi Musa (first-second century AD)

CREAM WARE/AQABA WARE

A rough ware with whitish surfaces appeared in Nabataea by the end of the first century AD and was still produced during the fourth century. Their center of production was at Ayla (modern Aqaba). The distinctive whitish surfaces are due to high salt contents in the prepared clay for the vessels, probably due to the use of sea water in the production process. Most vessels were jugs for drinking (Fig. 11); others were bowls and jars for daily use.

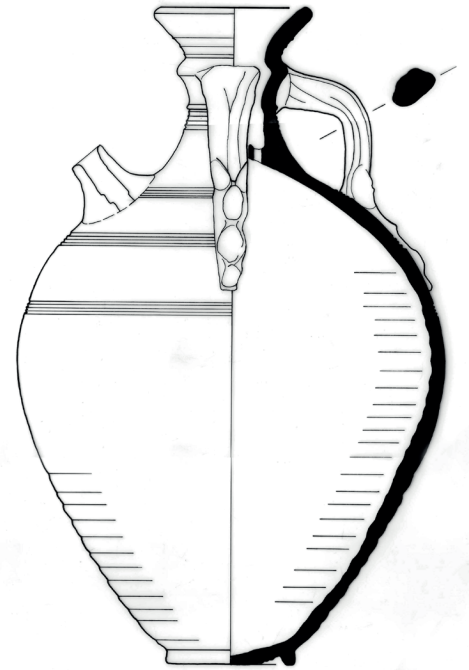
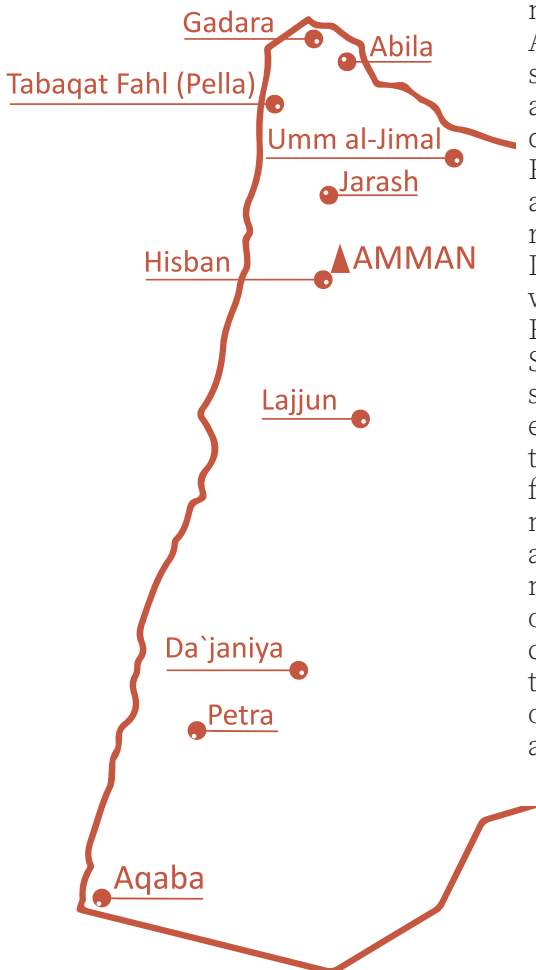


Figure 11 – Nabataean cream ware jug from al-Humayma (third century AD); courtesy of John P. Oleson

The Roman Period

S. Thomas Parker

JORDAN MAP
Sites in Pottery of Jordan
Manual
Roman Period
63 BC-AD 324



The pottery of Roman Jordan is now from one of the better known periods of the kingdom's ceramic history, although this is complicated by several factors. First, for decades scholarly focus on "biblical" periods often excluded the Roman and later historical periods. Second, the only Roman-period sites to receive sustained attention were Petra and Jarash, with a primary focus on monumental architecture. For example, pottery was almost entirely excluded even from the monumental publication of excavations at Jarash (Kraeling 1938). This neglect largely continued until the 1970s, when James Sauer published his modest but influential doctoral dissertation of pottery from Tall Hisban (Sauer 1973) that presented a stratified ceramic sequence from the Iron Age to the Ayyubid/Mamluk periods, albeit with some chronological gaps. At its most ambitious, the Sauer typology not only divided the Roman period into "Early Roman" and "Late Roman," but even attempted to subdivide these into narrower subperiods (e.g., "Early Roman I, II, III, IV"), each of only ca. 25–75 years with quite precise dates (e.g., "Early Roman IV" dated to ca. AD 73–135). Such supposed chronological precision naturally raised many eyebrows, especially because Sauer openly admitted that such dates were often drawn from Jewish history. However, in fairness he also said that this scheme could alternatively (and, I would argue, much more effectively) use centuries instead of exact years (e.g., "Early Roman IV" could equate to "late 1st/early 2nd centuries"). Finally, Sauer's typology was obviously most useful for the region around Hisban (i.e., central Jordan) and

was less helpful for northern Jordan and, in particular, the south, where Nabataean pottery predominated in the Roman period.

Nevertheless, when tested elsewhere a few years later, the Sauer typology generally proved valid for much of central Jordan. For example, its use by a surface survey of Roman frontier fortifications provided evidence of their occupational history. Later excavation of some of these forts produced an occupational history that closely matched the dates suggested by the surface survey according to the Sauer typology (Parker 1986; 2006). Posthumous and much more detailed publication of the Hisban pottery also confirmed its basic validity (Sauer, Gerber, and Herr 2012; see a review in Parker 2014).

Recent scholarship filled some larger gaps in the field, such as at Pella in the Jordan Valley, renewed excavations at Jarash, and in the far north of Jordan at Umm al-Jimal (Parker 1998; Osinga 2017). This chapter excludes much groundbreaking work on Nabataean pottery, covered elsewhere in this volume. Nevertheless, major problems remain. These include minimal publication of pottery from major long-term excavations of several Decapolis cities (e.g., Gadara and Abila) and, especially, lack of quantification in published ceramic assemblages. On the other hand, there is important progress in some specialized ceramic studies, such as oil lamps (Lapp 1997). There has also been limited research into fabric analysis (e.g., Parker 2006: 330–32). Finally, and perhaps most problematic, is the absence of much evidence for centers of ceramic production (Kehrerberg 2007). Therefore, although scholars can assign some Roman





ceramics to certain regions, their specific origins remain mysterious.

The chronological parameters of the Roman period are a bit hazy. However, a logical starting point is 63 BC, when the Roman general Pompey entered the region to begin seven centuries of initially indirect and later direct Roman control. Fixing a terminus is more challenging. Sauer logically chose AD 324, when the Emperor Constantine won control of the eastern empire, including Jordan, and the Christianization of the region began in earnest and thus the Byzantine period began. These dates are useful for convenience but both are difficult to identify in archaeological contexts. For example, literary sources attest a major earthquake in AD 363 that seems visible in the archaeological record at a number of sites, extending as far south as Aqaba. Therefore, I will occasionally refer to evidence up to this date, given this rather secure archaeological milestone.

The Roman period is conventionally subdivided into “Early Roman” and “Late Roman.” Sauer’s proposed divider of AD 135, based on the end of the second Jewish revolt in Palestine (but which had little direct impact on Jordan), has been largely abandoned in favor of 106, the Roman annexation of the Nabataean kingdom. This latter date is surely to be preferred because it may be detected archaeologically in central and southern Jordan (Parker 2009a) and represents important administrative changes in the north (e.g., the transfer of some Decapolis cities to the new province of Arabia).

The following sections provide a brief summary overview of the ceramic typology of Roman Jordan, along with some commentary for

each broad category. This summary is necessarily extremely selective, subjective, and intended only as a starting point for students, who may consult the bibliography (Chapter 21 in this manual) for further pursuit of this fascinating subject. It excludes Nabataean pottery, treated separately in this volume, although I must stress that these are contemporary and closely related ceramic traditions.

COARSE WARES

Naturally, the vast majority of Roman pottery retrieved from archaeological sites in Jordan consists of coarse wares for utilitarian purposes such as storage, cooking, and serving. Although such pottery represented a low-cost, bulk commodity, it seems entirely possible that such vessels were widely distributed from relatively few production centers. This certainly seems the case for contemporary Nabataean pottery, for which much more evidence is available from both fabric analysis and actual kiln sites. Nearly all coarse wares were wheel-thrown. For Roman Jordan north of the Nabataean kingdom, the best evidence is from Jarash, where portions of the hippodrome were converted to ceramic production (Kehrberg 2007). Even a large village such as Umm al-Jimal, for example, seems to have relied entirely on external sources of ceramic supply, even of coarse wares, in this case apparently supplied from Jarash and Bosra in southern Syria, both lying a considerable distance from the village (Osinga 2017). A similar pattern of distribution appears in Roman Palestine, where several villages specialized in specific utilitarian vessels widely distributed across sites in Galilee (Adan Bayewitz 1993).

COOKING VESSELS

This category consists of closed (“cooking pots”) and open vessels (“cooking casseroles” and/or “cooking bowls”), the latter often accompanied by a lid that fit tightly over the rim. The closed cooking pots (Fig. 1.1–3), regardless of fabric, are generally globular, with thin sidewalls, a short neck, round base and often ribbed body, sometimes with ribbing confined to the shoulder and/or upper body. After the vessel was thrown, twin vertical loop handles were pressed on to the shoulder and rim. These vessels are usually slipped (sometimes only on the exterior surface) and generally lack dedicated lids but could be covered by other means when in use. Rim diameters typically range from 10 to 15 cm. Given the general similarity of the basic form, the main morphological distinction is the rim and handles. Early Roman examples usually display straight necks and flattened handles (fig. 1.1) while Late Roman vessels often have grooved rims, offset necks, and pinched handles (Fig. 1.2–3).

Cooking casseroles and/or cooking bowls generally are shallow forms with rounded bases. A pair of horizontal loop handles is attached to or just below the rim. Other casseroles display fingered indented strips attached to the sidewall just below the rim (Fig. 1.4). On a few vessels, a pair of vertical loop handles extends from the rim part way down the sidewall. It can be difficult at times to distinguish such cooking vessels from other types of bowls, especially when the former lack evidence of charring. One key is that open cooking vessels are typically of the coarse, grainier fabric that typifies closed cooking pots, unlike the somewhat finer fabric of most other bowls. Rim diameters typically



range from 15 to 25 cm. The chief morphological distinction is the profile of the rim (often slightly incurved and beveled to receive the flattened rim of the corresponding lid) and handles. Some lids display a steam hole in the sidewall or in a central knob handle, punched through the vessel prior to firing (Fig. 1.5).

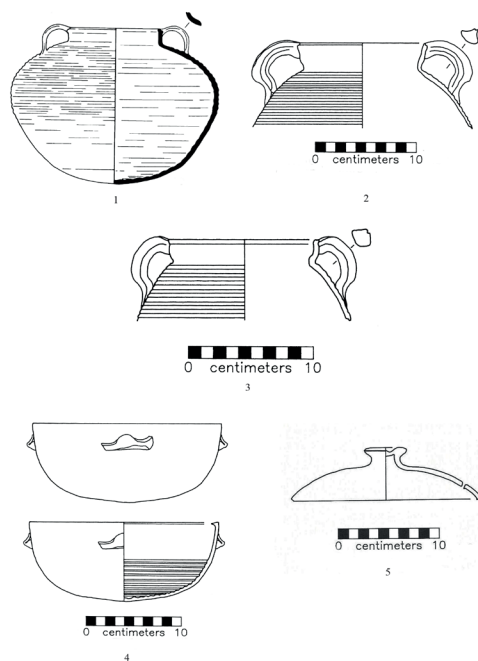


Figure 1–1.1 Early Roman closed cooking pot from Pella (first century; McNicoll, Smith, and Hennessy 1982: 145, pl. 132:10); 1.2–3 Late Roman closed cooking pots from al-Lajjūn (early fourth century; Parker 2006: fig. 16.1:1–2); 1.4 Late Roman casserole with horizontal, finger-indented handle from al-Lajjūn (early fourth century; Parker 2006: fig. 16.27.127); 1.5 Late Roman cooking lid with central knob handle from al-Lajjūn (early fourth century). Steam hole is visible in sidewall (Parker 2006: fig. 16.33.160).

JARS, JUGS, AND JUGLETS

These vessels vary widely in terms of fabric, technique of manufacture, surface treatment, and morphology, reflecting their diversity of function. Although there is some inconsistency

in terminology, many would define “jars” as two-handled and “jugs” as single-handled vessels. Ribbing of the sidewall is common on both jars and jugs.

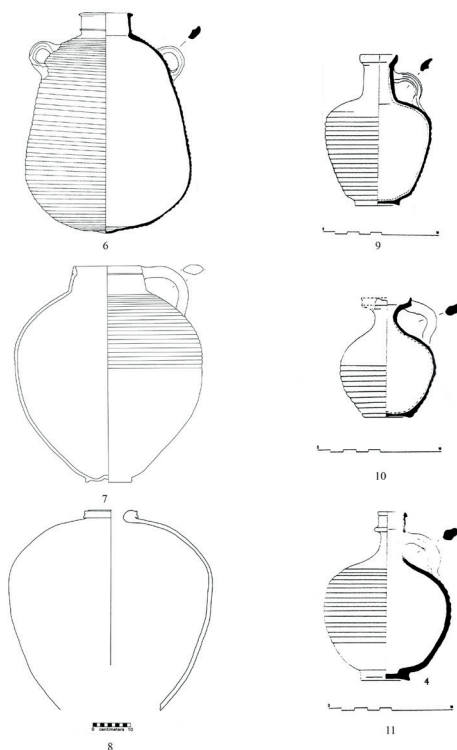


Figure 2–2.6 Early Roman “bag-shaped” jar from Pella (first century; McNicoll et al. 1992: pl. 92:4); 2.7 Late Roman jar from Petra. Although depicted here with only one vertical loop handle, this vessel likely had two such handles (fourth century; Fellmann Brogli 1996: Abb. 760); 2.8 Byzantine pithos from al-Lajjūn (early sixth century; Parker 2006: fig. 16.55.274). The vessel likely once had vertical loop handles attached to the shoulder. 2.9–11 Late Roman jugs from Tall Fayal (third century; Rasson-Seigne 1993: 102, figs. 8:2,4, 9:6).

Perhaps most common is the “bag-shaped” jar with a rounded base, high straight neck, and twin vertical loop handles on the shoulder (Fig. 2.6). The neck, shoulder, and/or upper body are often ribbed. Rim profiles vary widely, including rounded, wedge-thickened,

everted and/or elongated, and thus are often the key diagnostic feature. Such jars from northern and central Jordan are generally of hard, thin, almost metallic gray ware and deeply ribbed. Bag-shaped jars from southern Jordan tend to be of softer, thicker, orange-red ware. Other jars were wheel-thrown with vertical loop handles extending from the rim to the shoulder and rested on low ring bases (Fig. 2.7).

Some very large jars (pithoi) represent one of the few types of handmade vessels of the Roman period. Too large to be thrown on a wheel, pithoi were made by coiling or slab construction, and then attaching the rim and two or even four handles, both often wheel-thrown before attachment. These vessels were neckless, with the rim attached directly to the shoulder (Fig. 2.8). Such storage jars typically had round bases in order to be set permanently into shallow holes in floors. Therefore, they often had a long life and changed slowly in stylistic terms.

Jugs, usually smaller than jars, display an even wider range of forms, ranging from bag-shaped to cylindrical and with a vertical loop handle extending from the rim or middle of the neck to the shoulder (Fig. 2.9–11). Bases are typically flat (often “string-cut” during production), low ring, or rounded with a central button (“omphalos”). Necks are often high and sometimes flare outwards just below the rim, apparently for ease in filling. Rim morphology varies widely but a common feature is a pinched rim to create a spout to facilitate pouring, typically opposite the handle (Fig. 3.12). Also common are “pilgrim flasks” (Fig. 3.13). These were often wheel-thrown into a flattened hollow disc. Prior to



firing, a hole was cut into the side to attach the neck and rim. Twin vertical loop handles extend from the neck to the ribbed body. Rims are usually slightly everted atop narrow necks. Such features suggest a drinking vessel for travelers, hence the term “pilgrim flask.”

Smaller jugs (“juglets”) often display single vertical loop handles extending from rim to shoulder and rest either on low-ring, flat or “string-cut” bases (Fig. 3.14–15). Some juglets lack handles due to their small size. Some examples display a round spout placed over a hole punched through the shoulder (Fig. 3.16). Also lacking handles are unguentaria, or perfume bottles with high necks, small rim openings (to restrict evaporation of the precious liquid contents), and round bases. Charring patterns on some unguentaria suggest that they were set into the fill hole of ceramic oil lamps so that the adjacent burning wick would heat the perfume within the unguentarium, releasing pleasant aromas into the air.

BOWLS, CUPS, AND KRATERS

This category includes vessels primarily intended for serving food and drink, in other words, tableware. Bowls are perhaps the most common of all ceramic vessels and vary widely in form, including height (shallow vs. deep), rim morphology and diameter, and base (flat, ring, or rounded).

Bowls generally lack handles, especially those of larger size (Fig. 4.17) but there are exceptions. Cups are typically drinking vessels of smaller diameter than bowls. Many bowls and cups display a smooth profile from rim to base but others have a “carinated” (i.e., a sharp-angled) profile (Fig. 4.18). Rims may be smooth and rounded,

flattened or “beveled,” and grooved or notched. Bases are typically either flat (often “string-cut”) or rest on low rings (Fig. 4.19).

Kraters are large bowls, both in terms of height (depth) and rim diameter (often up to 40 cm), apparently intended for mixing, such as wine with water. Kraters typically have flattened, elongated rims that protrude beyond the sidewall, apparently for ease in moving the vessel, and flat or ring bases for increased stability (Fig. 4.20–22).

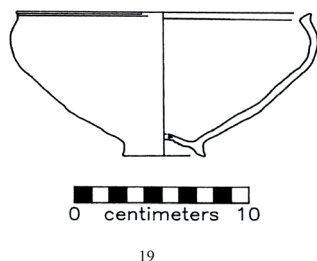
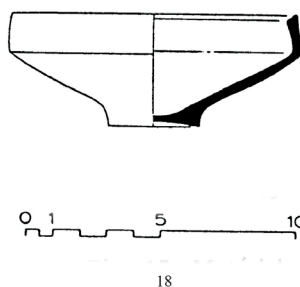
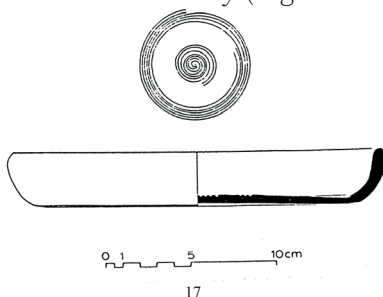
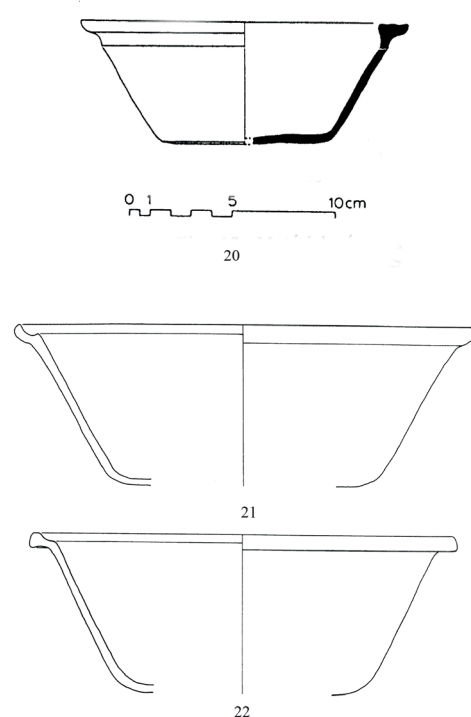


Figure 4–4.17–18 Late Roman bowls from Jarash (Rasson-Seigne 1986: 68, fig. 17:2, 3); 4.19 Late Roman bowl with incurved rim and ring base from al-Lajjūn (fourth century; Parker 2006: fig.



4.20 Late Roman krater from Jarash (Rasson-Seigne 1986: 68, fig. 17:5); 4.21–22- Late Roman kraters from Petra (fourth century; Fellmann Brogli 1996: Abb.788–789).



LAMPS

The vast majority of ceramic oil lamps from Roman Jordan were mold made in upper and lower halves. Once extracted from the stone mold, the two halves were then pressed together before firing. Most lamps rest on a flat disk or very low ring base with two openings on the top of the vessel: a larger central “fill hole” to add olive oil as fuel and a smaller “nozzle” at one end of the lamp for the wick. A few lamps display small handles, often merely vestigial, on the end opposite the fill hole. Wheel-made lamps, such as the spatulate or “Herodian” lamps from the Early Roman period, comprise a small but significant minority of lamps (Fig. 5.23; Sauer, Gerber, and Herr 2012: 485–86). Another common type is the discus lamp, which often features imagery or

other decoration around a very small fill hole. By the Late Roman period, lamp production appears to be highly specialized, seemingly confined to a few centers, such as Gerasa (Kehrberg 1989; 2007). Typical from the mid-fourth century onward are “ovoid lamps with large filling holes”, often termed “South Jordan lamps,” that continue into the Byzantine period (Fig. 5.24–26; Sauer, Gerber, and Herr 2012: 486–87).

IMPORTED FINE WARES

The Roman period witnessed sustained imports of fine tablewares from various parts of the Roman Empire. These are easily recognizable and are often closely datable, providing good chronological markers and evidence of contact with other regions. The beauty of these imported fine-ware vessels is that they can be dated independently of their archaeological context and must have reached Jordan during or shortly after their known period of production. These fine imported tablewares are mostly open vessels, such as bowls, cups, plates and platters, although some closed forms (e.g., jugs and jars) are known. They are characteristically termed “fine ware” because the clay was highly levigated, i.e., strained of most large inclusions to produce very fine clay. Nearly all are decorated with a glossy red slip and evenly fired (i.e., without a dark core).

The most common imported fine ware in Early Roman Jordan is Eastern Sigillata A (ESA), produced in the northeast Mediterranean from the late second century BC to the late second century AD (Fig. 6.27–29). Trailing far behind ESA in quantitative term are Eastern Sigillata B, Eastern Sigillata C (or Çandarlı Ware, both from the Aegean), and Eastern Sigillata D (or

“Cypriot Sigillata,” although its Cypriot origin is now questioned). These other Sigillata wares appear somewhat later than ESA but also disappear about the same time (Bes 2015). Sigillata vessels sometimes display decoration such as rouletting and occasionally stamps in Greek or Latin (Haves 1985).

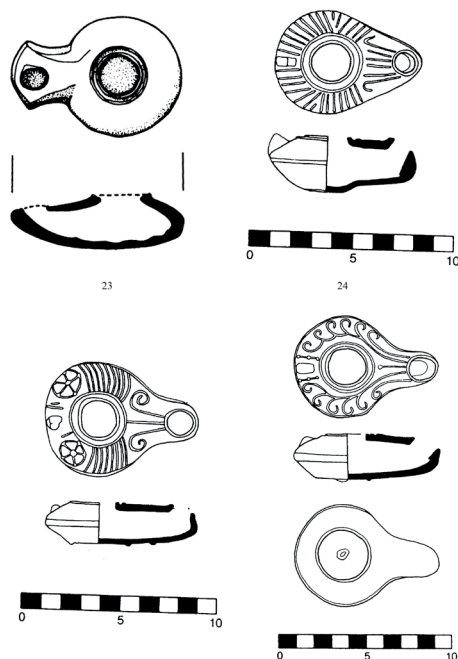


Figure 5—5.23 Spatulate or “Herodian” lamp from Pella (first century; McNicoll et al. 1992: pl. 87:4); 5.24–26 Ovoid lamps with large filling holes from al-Lajjūn (mid-fourth/fifth centuries; Parker 2006: fig. 16.72: 358, 360, 362).

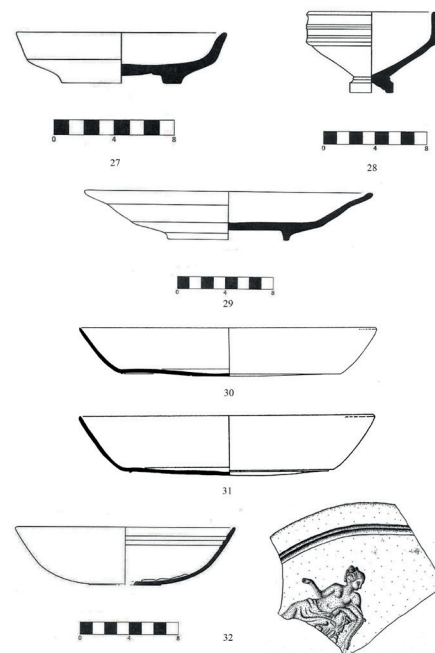


Figure 6—6.27 Eastern Sigillata A: Hayes Form 29 from Aqaba (ca. 30 BC–AD 20/25; Parker et al. forthcoming #580; Hayes 1985: 27–28); 6.28 Eastern Sigillata A: Hayes Form 48 from Aqaba (ca. AD 40–70; Parker et al. forthcoming #591; Hayes 1985: 35–36); 6.29 Eastern Sigillata A: Hayes Form 54 from Aqaba (ca. AD 75/80–130/150, Parker et al. forthcoming #605; Hayes 1985: 38–39); 6.30–31 African Red Slip: Hayes Form 50 (Hayes 1972: 68, fig. 12: 7–8); 6.32 African Red Slip: Hayes Form 53 from Aqaba. Appliqué on interior depicts reclining Aphrodite (mid- to late fourth century; Parker et al. forthcoming #670; Hayes 1972: 78–82).

The most common imported fine ware in Late Roman Jordan is African Red Slip (ARS), produced at multiple production centers in modern Tunisia from the late first to the seventh



centuries (Hayes 1972). Although still classified as fine ware, ARS tends to be somewhat coarser and thicker than earlier Sigillata wares (Fig. 6.30–31). Many ARS vessels display stamped appliqué decoration on the interior floor of the vessel (Fig. 6.32). However, ARS is rare in Jordan until the mid- to late third century, i.e., after the disappearance of ESA. The importation of ARS in quantitative terms peaks in the fourth century then declines dramatically in the fifth century.

IMPORTED AMPHORAE

Technically speaking, an “amphora” is simply a two-handled jar, but the term in archaeological parlance has come to mean a jar intended for transport, documented by the discovery of hundreds of ancient shipwrecks across the Mediterranean, many of which have yielded up to several thousand such jars. The economic importance was of course their content, agricultural products such as wine, olive oil, or garum (fish sauce, the “salsa” of the ancient Mediterranean). Although such contents rarely survive, the containers serve as proxies to illuminate trade across the region, primarily by water transport. Amphorae are typically cigar-shaped in order to be stacked upright in the holds of ships, with low necks and rounded or pointed bases. Twin vertical loop handles extend from the rim to the shoulder or rest entirely on the shoulder. Study of Roman amphorae has led to the development of widely accepted typologies and nuanced analysis of their economic implications (Peacock and Williams 1986; also consult the website at the University of Southampton: http://archaeologydataservice.ac.uk/archives/view/amphora_ahrb_-2005/).

Although Jordan is mostly landlocked (apart from Aqaba/ancient Aila, which has yielded key evidence of imported amphorae; cf. Parker 2009b), it has nevertheless yielded significant evidence of such trade in the Roman era. One common imported amphora is the “Dressel 2–4” or “Koan Type” (from its prototype on the island of Kos in the Aegean), distinguished above all by its long bifid handles (two coils of clay pressed together side to side), sharply carinated shoulder, solid knob base and simple rounded rim (Fig. 7.33). It originates from multiple production centers in the western Mediterranean and the Aegean (Peacock and Williams 1986: 105–06). Another common import is from Gaza, famous for its white wine in antiquity. The Gaza fabric is usually dark brown, flakey and containing fragments of seashell (Fig. 7.34). The upper body is frequently ribbed, with vertical loop handles attached to the shoulder (Majcherek 1995).

For the Late Roman era, a common amphora is the “Hollow Foot” or “Kapitan II,” likely from the Aegean or possibly the Black Sea, dated to the third and fourth centuries. It displays broad, thick handles rising slightly above the rim and extending from a high conical neck to the shoulder (Fig. 7.35). Especially distinctive is the tubular ring base with shallow ribbing on its exterior (thus, a “hollow foot,” unlike the solid spikes of most amphorae; Peacock and Williams 1986: 193–95).

CERAMIC BUILDING MATERIALS

These are usually absent from studies of Roman pottery in Jordan. Yet, they constitute an important part of the region’s ceramic evidence in

all historical periods. This includes building materials such as ceramic pipes (Fig. 7.36–37) for conducting water and heated air, tiles (for roof construction and flooring), and fired bricks. Despite their ubiquity, they have thus far been the subject of only minimal study (e.g., Parker 2006: 360–61).

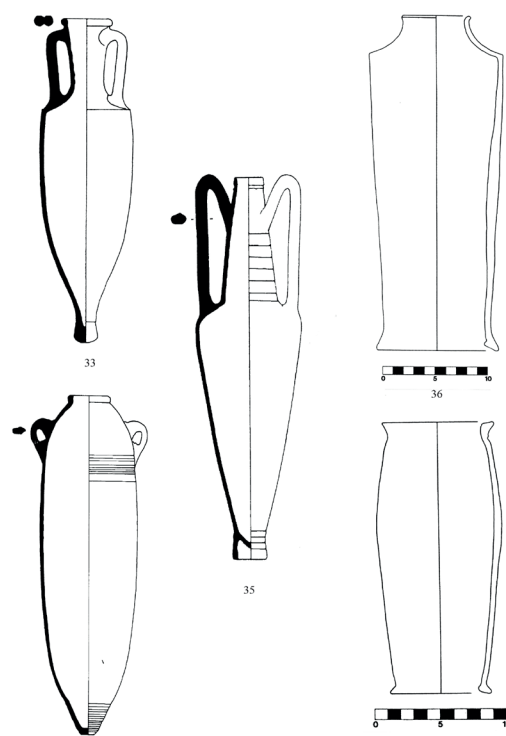


Figure 7–7.33 Dressel 2-4/Peacock and Williams Class 10 amphora (late first century BC to mid-second century AD; Peacock and Williams 1986: 105, fig. 39); 7.34 Gaza/Late Roman 4 amphora (second-third centuries; Peacock and Williams 1986: 198, fig. 116); 7.35- Kapitan II/Hollow Foot/ Peacock and Williams Class 47 amphora (late second to fourth centuries; Peacock and Williams 1986:193, fig. 112; 7.36-37 Pipes from al-Lajjun (fourth century; Parker 2006: fig. 16:80.384, fig. 16:81.387).

The Byzantine Period

Debra Foran
(dforan@wlu.ca)

The Byzantine Period in Jordan is defined as the time between Constantine's transfer of the capital of the Empire to Byzantium/Constantinople in AD 324 to the end of the Muslim conquest of the region in AD 641. The period has been divided into "Early" (AD 324–491) and "Late" (AD 491–641). These two phases have been further subdivided into sub-phases (Sauer 1973, 4); however, for the purposes of this publication, the ceramics, when necessary, will be discussed in terms of Early or Late Byzantine. Traditionally, these temporal divisions within ceramics are based on the dates of imported and fine wares. The differences between Early and Late Byzantine common wares are less clear.

Pottery from the Byzantine Period has been found in all regions of Jordan. The chronology and identification of these ceramic assemblages is relatively homogeneous across the country, although this may be the result of a shortage of studies of these collections that include macro- and microscopic analysis. Sites in Jordan that have produced significant collections of Byzantine ceramics include Pella (Da Costa et al. 2002; McNicoll et al. 1992; Smith and Day 1989), Barsinia (El-Khoury 2014), Umm Qays (Andersen and Strange 1987), Jarash (Clark and Falkner 1986; Kehrberg 2007; Galikowski and Musa 1986; Parapetti et al. 1986; Rasson-Seigne 1989), Umm al-Jimal (Parker 1998), Madaba (Acconci and Gabrieli 1994; Alliata 1982, 1986; Alliata and Derosas 1993; Foran 2007; Harrison 1994; Harrison et al. 2003), the Mount Nebo area (Alliata 1990; Bagatti 1985; Saller 1941; Sanmori and Pappalardo 2000; Schneider 1950),

Khirbat al-Mukhayyat (Alliata 1988; Michel 1998), Umm ar-Rasas (Alliata 1991, 1992; Pappalardo 2002, 2003, 2006; Sanmori and Pappalardo 1997), Hisban (Gerber 2012), Dhiban (Tushingham 1972), Dayr 'Ayn Abata (Grey and Politis 2012), Lajjun (Parker 1987, 2006), Jabal Harun (Gerber 2008), Khirbat adh-Dharih (Waliszewski 2001), Gharandal (Walmsley and Grey 2001), Humayma (Oleson et al. 2008), and Aqaba (Dolinka 2003).

Publications on Byzantine pottery have focused on form, function, and decoration (e.g., Magness 1993); thus, the assemblage presented here, in addition to being representative of Byzantine ceramics across Jordan, will concentrate on those characteristics. Unless otherwise noted, all the ceramics presented here are wheel-made with well-levigated clay and are evenly fired.

BOWLS (FIG. 1)

These are deep, open forms that vary in size. They have rounded or angular rims, rounded or carinated sides, and disk or ring bases. The fabric of these vessels varies from light red or reddish-brown to pink and reddish-yellow. The exterior of these vessels is often covered with a very pale brown slip. Bowls were used for serving, mixing, and drinking.

BASINS (FIG. 2)

These are large, open vessels with straight sides. They usually have angular rims and flat bases. They sometimes have two loop handles attached to the sides. Basins are made with a light red, light brown, or reddish-yellow fabric. They often have incised combing on the exterior and the rim. These vessels are used for mixing and storing.

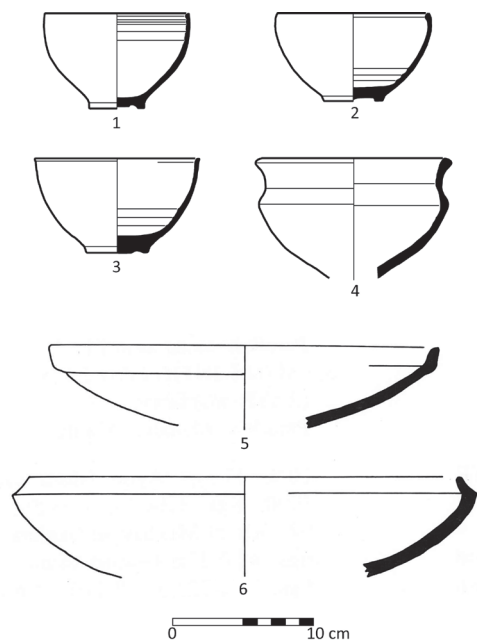


Figure 1—Bowls: 1.1 Tall Madaba (drawing by author); 1.2 Tall Madaba (drawing by author); 1.3 Tall Madaba (drawing by author). 1.4 Tall Madaba (drawing by author); 1.5 Harrison 1994: Fig. 1.14. 1.6 Harrison 1994: fig. 1.16

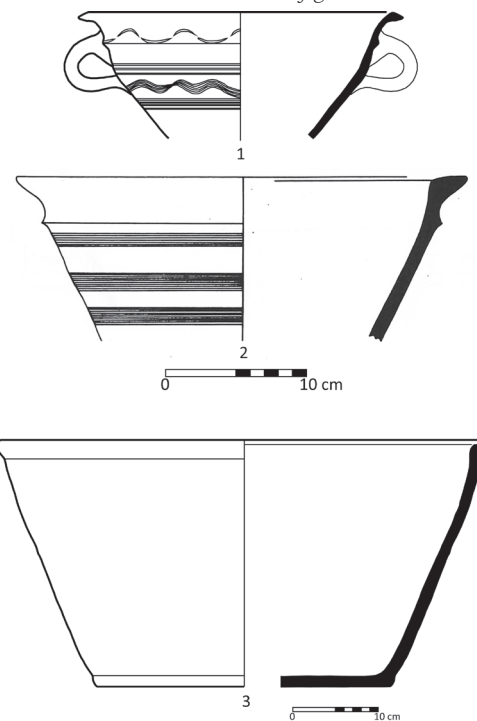
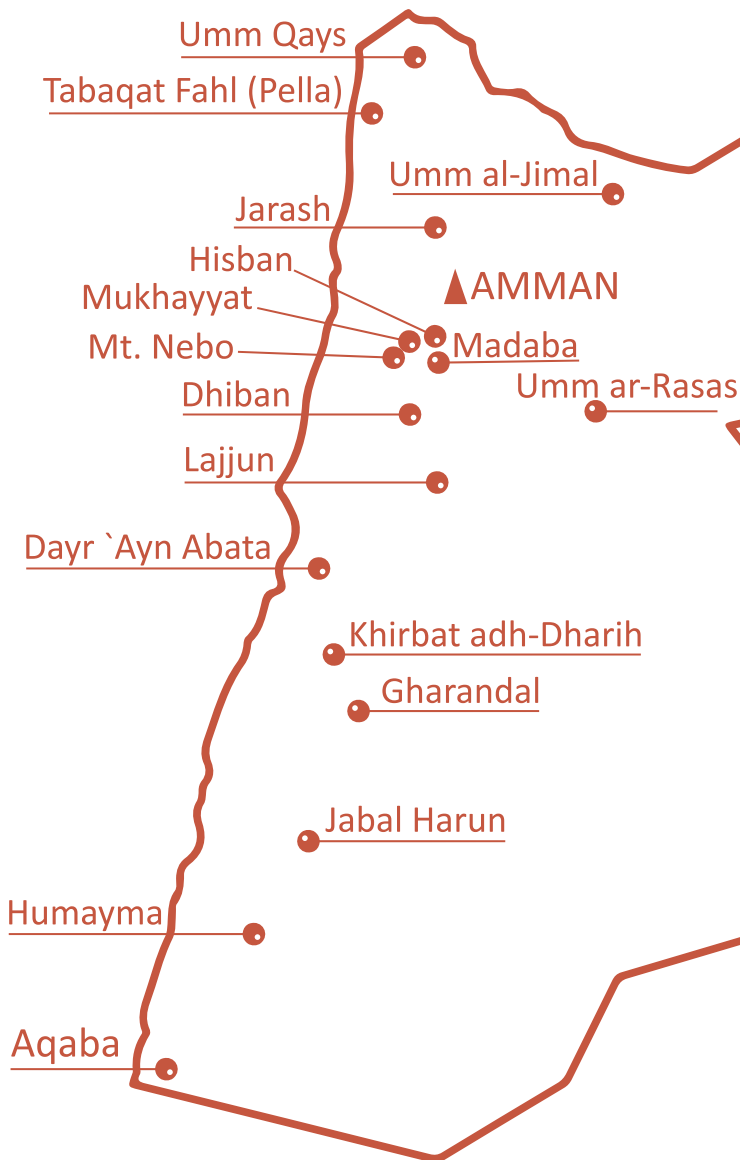


Figure 2—Basins: 2.1 Tall Madaba (drawing by author); 2.2 Harrison 1994: fig. 2.4; 2.3 Tall Madaba (drawing by author)



JORDAN MAP
Sites in Pottery of Jordan
Manual
Byzantine Period
AD 324-636



JUGS AND JUGLETS (FIG. 3)

These are closed forms with narrow necks and globular or cylindrical bodies. They usually have a single handle, rounded or angular pinched rims, and rounded or omphalos bases. The fabric of these vessels varies from light red or reddish-brown to reddish-gray and pink. Jugs and juglets often have a very pale brown slip on the exterior. Jugs and juglets are used for serving and pouring.



Figure 3—Jugs and Juglets: 3.1 Tall Madaba (drawing by author); 3.2 El-Khoury 2014: fig. 8.2; 3.3 El-Khoury 2014: fig. 8.3; 3.4 Tall Madaba (drawing by author). 3.5 Tall Madaba (drawing by author)

JARS (FIG. 4)

These are closed forms with two handles, wide necks, and globular or carinated bodies. They have rounded or angular rims and rounded or omphalos bases. These vessels appear in a variety of fabric colors including light red, reddish-gray, reddish-yellow, gray, red, and very pale brown. Jars often have a white or red slip on the exterior and horizontal ridges along the exterior of the neck and body. Jars can be used for storage, serving, and pouring.

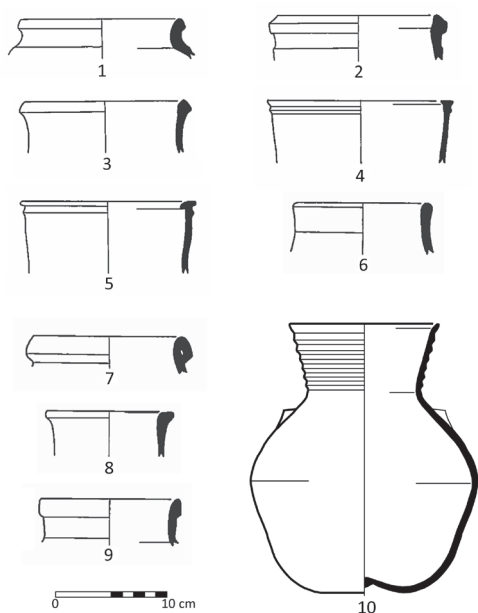


Figure 4—Jars: 4.1 Gerber 2012: fig. 3.44.5; 4.2 Gerber 2012: fig. 3.44.7; 4.3 Gerber 2012: fig. 3.44.9; 4.4 Gerber 2012: fig. 3.45.10; 4.5 Gerber 2012: fig. 3.45.12; 4.6 Gerber 2012: fig. 3.84.5; 4.7 Gerber 2012: fig. 3.84.7; 4.8 Gerber 2012: fig. 3.84.8; 4.9 Gerber 2012: fig. 3.84.10; 4.10 Tall Madaba (drawing by author)

STORE JARS (FIG. 5)

These are closed forms with two loop handles, short, wide necks, and bag-shaped bodies. They have thickened rims and rounded or pointed bases. These vessels are usually made of a light red fabric with a very pale brown slip on the exterior. Horizontal ridges often decorate the exterior of the shoulder and body. Store jars are used for storage and transportation.

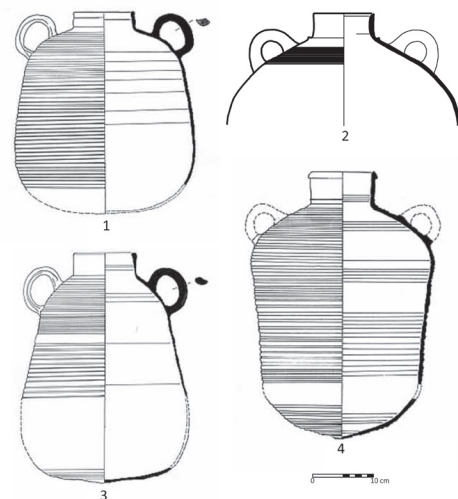


Figure 5—Store Jars: 5.1 El-Khoury 2014: Fig. 7.12; 5.2 Tall Madaba (drawing by author); 5.3 El-Khoury 2014: Fig. 7.1; 5.4 El-Khoury 2014: Fig. 7.13

COOKING POTS (FIG. 6)

These are closed forms with two loop handles, short necks, and round or carinated bodies. They have rounded or angular rims and rounded or pointed bases. The fabric of these vessels is coarser than other Byzantine vessels, and it varies from red or light red to reddish brown or brown. A dark gray or brown slip appears on the exterior. Cooking pots have horizontal ridges along the exterior of the shoulder and body. Cooking pots are used for food preparation that requires a closed vessel.

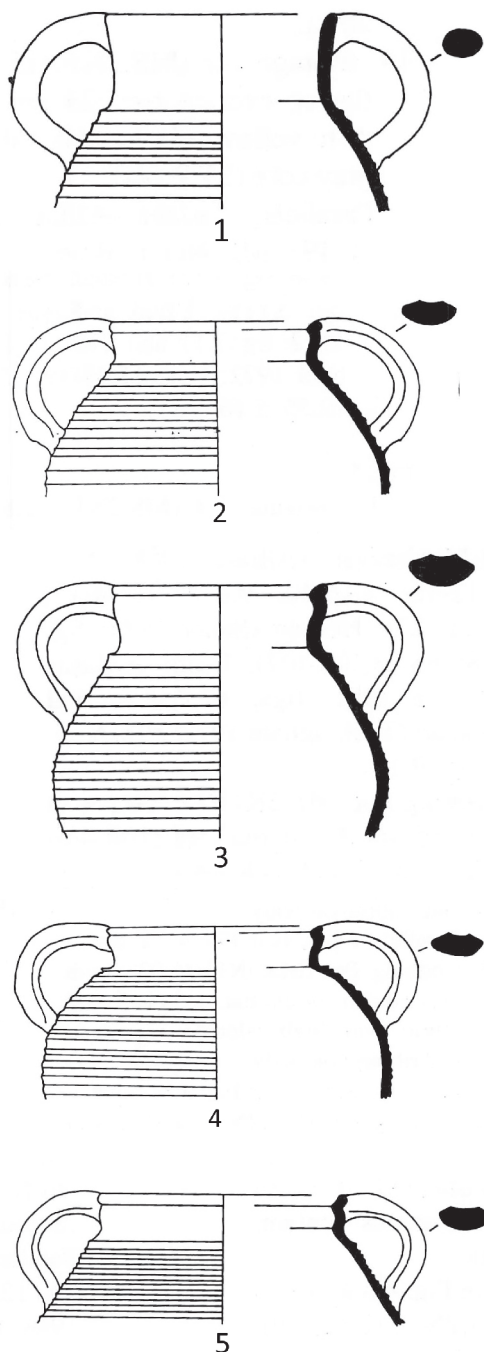


Figure 6—Cooking Pots: 6.1 Harrison 1994: fig. 5.1; 6.2 Harrison 1994: fig. 5.3; 6.3 Harrison 1994: fig. 5.2; 6.4 Harrison 1994: fig. 5.4; 6.5 Harrison 1994: fig. 5.5

COOKING CASSEROLES AND LIDS (FIG. 7)

These vessels are made as a single piece and then cut to create a casserole with a matching lid. The casseroles are open forms with two horizontal handles and rounded bodies. They have angular rims and round or omphalos bases. The lids are shallow and have angular rims and a knob on the top. The fabric of these vessels is coarser than other Byzantine vessels. Casseroles are made of a light reddish-brown fabric and have horizontal ridges along the exterior of the body. Lids are made of a reddish-yellow fabric and have concentric ridges on their exterior. Cooking casseroles and lids are used for food preparation that requires an open vessel that needs to be covered at times.

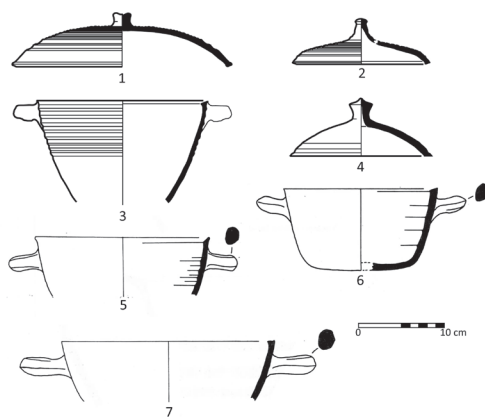


Figure 7—Cooking casseroles and lids: 7.1 Tall Madaba (drawing by author); 7.2 Tall Madaba (drawing by author); 7.3 Tall Madaba (drawing by author); 7.4 Tall Madaba (drawing by author); 7.5 Harrison 1994: fig. 3.5; 7.6 Harrison 1994: fig. 3.2; 7.7 Harrison 1994: fig. 3.8

LAMPS (FIG. 8)

Byzantine lamps are mold-made in two parts (upper and lower). The typical Byzantine lamp is called a candlestick

lamp (Da Costa 2010). They have a pronounced ridge around the filling hole. They are decorated with palm branches radiating from the filling hole and emerging from the spout. They have ring or disk bases. Candlestick lamps are made with a light reddish-brown or pink fabric.

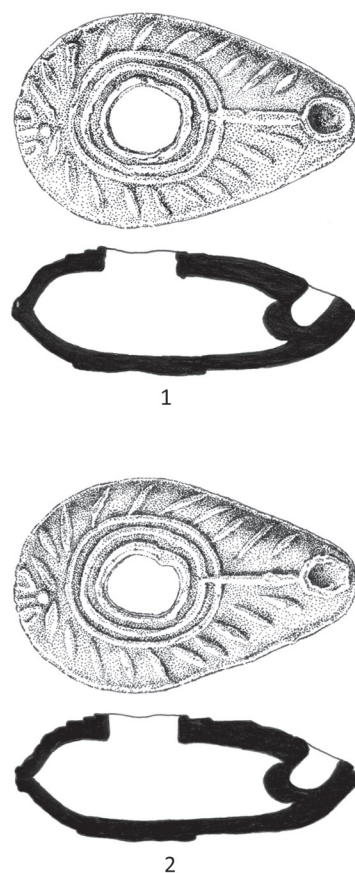


Figure 8—Lamps: 8.1 Tall Madaba (drawing by F. Haughey); 8.2 Tall Madaba (drawing by F. Haughey)



IMPORTED/LUXURY WARES (FIGS. 9 AND 10)

Fine Byzantine Ware (FBW) (Fig. 9): This ware is typical of the Late Byzantine Period and is represented by bowls and juglets (Gichon 1974). The bowls have rounded rims, curved sides, and rounded or flat bases. The juglets are closed forms that have rounded rims, a single handle, globular or carinated bodies, and disk bases. This ware appears in a gray, reddish-yellow, or light reddish-brown fabric. The exterior surface is often highly burnished and treated with a very pale brown or reddish-yellow slip. The bowls are sometimes decorated with a single wavy line below the rim. The juglets often have incised designs on the shoulder and body.

African Red Slip (ARS) (Fig. 10): This ware is characterized by large shallow bowls and plates (Hayes 1972). They have everted round or squared rims and ring bases. ARS fabric is light red in color. The interior of these vessels is burnished and covered in a light red slip. Appliqué and impressed decorations often appear on the interior of these vessels.

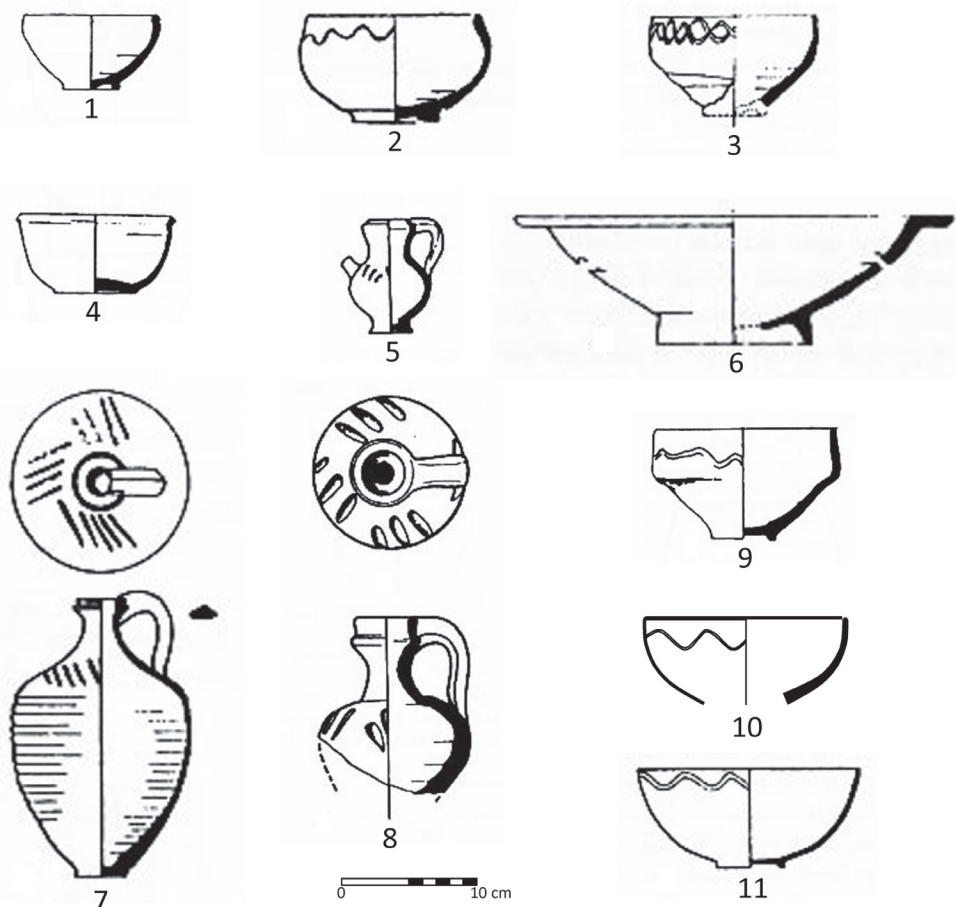


Figure 9—Fine Byzantine Ware: 9.1 Magness 1993, 195, FBW Bowls Form 1B #1; 9.2 Magness 1993, 194, FBW Bowls Form 1A #3; 9.3 Magness 1993, 194, FBW Bowls Form 1A #2; 9.4 Magness 1993, 195, FBW Bowls Form 1B #3; 9.5 Magness 1993, 240, FBW Jars, Jugs and Juglets Form 2A #3; 9.6 Magness 1993, 201, FBW Bowls Form 2D #2; 9.7 Magness 1993, 241, FBW Jars, Jugs and Juglets Form 2B #1; 9.8 Magness 1993, 240, FBW Jars, Jugs and Juglets Form 2A #4; 9.9 Magness 1993, 195, FBW Bowls Form 1C #1. 9.10 Tall Madaba (drawing by author); 9.11 Magness 1993, 194, FBW Bowls Form 1A #1

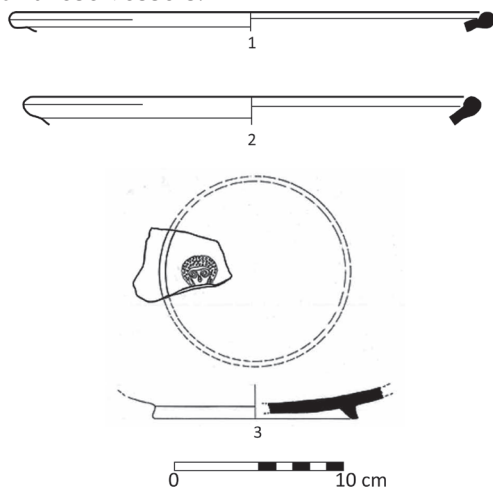


Figure 10—African Red Slip: 10.1 Tall Madaba (drawing by author); 10.2 Tall Madaba (drawing by author); 10.3 El-Khouri 2014: fig. 4.1

The Early Islamic Period

(Umayyad, Abbasid, and Fatimid)

Alan G. Walmsley
(alawalms@live.co.uk)

Islam's advent in Arḍ ash-Shām in the AD 630s caused little disruption to urban and rural life, with longstanding social customs barely affected including pottery traditions. Over the next five centuries, however, a range of cultural innovations evolved in response to growing community aspirations, of which Islamification was one. With the pottery, two broad trends can be identified: an unbroken continuation and refinement in the wares and forms from Byzantine times and, from the eighth to early ninth centuries (c.) AD onwards, the appearance of new styles and techniques inspired by rapid developments in ceramic technologies across the Middle East. Yet in Jordan these new styles only slowly gained widespread acceptance in the highlands; rather, a long tradition of locally produced wares continued to dominate. Unlike in the mountains, however, the pottery profiles at sites in the Jordan and Arabah valleys show that the adoption of Islamic glazed and cream fabric wares occurred at the same time traditional forms were retained. The crossover between traditional and new ceramic types in the Rift Valley provides a crucial typo-chronological key with which to securely date the local early Islamic wares in the highlands, resulting in an inclusive pottery typology that covers the seventh to 11th centuries.

Early Islamic pottery in Jordan can be better understood by focusing on two major themes: first, wares and technology and second, forms and function. Changes in these four features serve to map out a chronological progression, which reflect evolving social preferences (Holmqvist 2019: 34). Given space restraints, this study

focuses on pottery types that are common in the archaeological record.

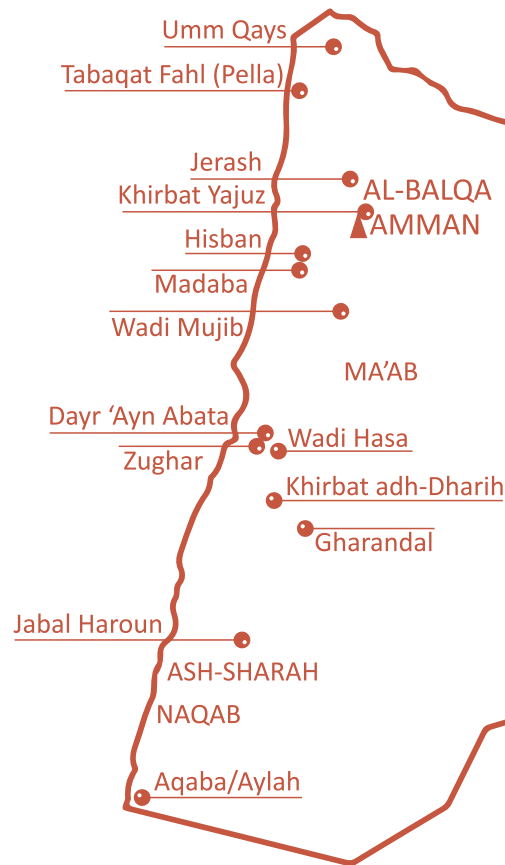
WARES AND TECHNOLOGY

Three distinct regional clusters can be identified for Jordan: the northern hills with Jarash as the primary center; a central cluster of al-Balqā and Ma'āb; and a third south of the Wādī Mūjib with a center at al-Aqabah (Aylah). These three clusters have been defined by Firas Mohamad Alawneh (2006) based on the chemical analysis of sherds, while Maher Tarboush focused on north Jordan, identifying additional production areas (Tarboush 2015).

In all three clusters, fast-wheel technology was applied in producing utilitarian objects—notably jars, jugs, cups, cooking pots and casseroles, bowls, lids, and small basins—with smooth or ribbed (rilled) surfaces. Large vessels such as mixing basins and storage jars were handmade with rims finished on a slow wheel. Greater regional individuality can be seen in the clay selection from local sources, kiln firing conditions, and decorative preferences.

In the North Jordan cluster, clays shared a common recipe across vessel types: well mixed, slight to moderate grits, with some larger lime inclusions. The primary variable factor was coarseness, depending on purpose. Firing in updraft kilns resulted in a thin, hard, brittle fabric colored a range of reds, browns, and dark grays. Handmade basins and storage jars were gray. Decoration in the seventh to early eighth c. favored comb incision, rim pinching, impressed bands, and white-painted motifs, but by the mid-eighth c. painted abstract designs were applied to fine wares in white and reddish-brown tints, with red dominating in

JORDAN MAP
Sites in Pottery of Jordan
Manual
Early Islamic Period
AD 636-900



the eighth to 10th c. Comb incision on large vessels decreased, but deep-cut geometric designs featured on handmade bowls.

The al-Balqā' cluster shared many features with the Jarash cluster, although there is refinement in clay preparation, firing, and painted decoration. In a sign of independent production centers, Alawneh (2006: 226) has shown that there is a "high degree of chemical disparity" between the two clusters. For finer wares, al-Balqā' consumers favored light colors in cream, beige, and browns, occasionally with a cream slip. From the mid-eighth c. and ninth c., al-Balqā' ceramics excelled in a series of high-quality, high-art, and elegant bowls in a cream-to-light-orange ware overpainted with intricate geometric patterns in red.

The South Jordan cluster shared many technological features with the north and central clusters until the eighth c., after which its pottery matched styles in the Naqab. Using chemical and petrographic evidence, Alawneh (2006: 201) and E. Holmqvist

(2019: 109–18) have identified two distinct groups in south Jordan: a shared tradition in al-Jibāl and al-Sharāh mountains, and a second at Aylah. The mountain wares were made from local clays only slightly prepared. Colors were light, from cream to brown and pink to mid-red. Decoration favored incisions in straight and wavy lines and finger impressed bands. The few rare examples of painted jars had red lines. In Aylah, an early glazed tradition appeared in the eighth c. as part of a technological innovation in fine table wares. In the second half of the 10th c., handmade pottery re-emerged in chaff-tempered cooking and domestic wares.

FORMS AND FUNCTION

Earlier Islamic Jordan saw significant developments in the forms (shapes) and function (use) of pottery as changing tastes and developing technologies introduced new assemblages to households. Historically, the path of cultural continuity, change, and innovation

occurred in three stages, different to the dynastic history of the seventh to 11th c. The three stages are:

Stage 1: seventh and eighth c. (Rāshidūn, Umayyad, and early Abbāsīd), with archaeologically significant earthquakes in AD 659/660 and a second more powerful one in AD 749.

Stage 2: roughly ninth to mid-10th c. (Abbāsīd), a period of significant political and economic change that focused on al-Balqā', the far north, and the far south of Jordan, but elsewhere activity was continuous and subdued, but not absent.

Stage 3: mid-10th and 11th c. (Fātimīd and Saljūq), during which resistance measures were undertaken by the local tribal leaders in al-Jibāl and al-Sharāh to prevent political and sectarian intervention by neighboring power groups.

A wide range of pottery forms attributable to an early Islamic date are known for Jordan, but not until the eighth c. can some certainty



about dating be assured. Pottery of the seventh c., as a result, can be considered transitional. Thereafter, dates are given by centuries AD, wholly or in parts, for dynastic labels obfuscate cultural trends.

1) Cooking pots and casseroles (Fig. 1.1–21). Cooking wares show little variation across the three regional clusters in the seventh to early 10th c. To resist heat shock, a hard, highly granulated clay was used, but this varied in its makeup among the clusters depending on the local clay sources. Both pot and casserole forms were thrown on a fast wheel and the bodies often heavily ribbed to maximize heat uptake. For the first four centuries few changes occurred to their shape, making them poor chronological markers. From the eighth c. pots had elongated necks, whereas the horizontal handles on the casseroles turned upwards and the upper body and rim curved inwards; higher handles meant a more angular cut to the rim was necessary. The lids were characterized by flat-top button handles and, at Jarash, loop handles; bigger casseroles had a pierced hole to release steam. Smaller flat-bottomed casseroles in a finer fabric were intended for serving food, not cooking, and often came with lids decorated with loops and wavy lines in a white or red paint (the north and al-Balqāʾ) or incised comb bands (the south). Good-quality casseroles were in high demand; casseroles at Baysān were sourced from Jarash in the eighth c. (Bar-Nathan 2011), and Petra casseroles were sent to Aylah in the eighth and ninth c. despite the availability of a local product (Holmqvist 2019: 116).

By the 10th c. the internal surfaces of wheel-made pots and casseroles were lined in a plain, brownish-

colored glaze to improve strength and function. Concurrently, locally handmade globular cooking pots in a chaff-tempered, low-fired ware appeared especially in south Jordan, for example at Dayr Ayn Abātā, Gharandal, and Khirbat al-Dharīḥ. Thereafter, handmade chaff ware pottery and wheel-made wares, including glazed vessels, coexisted. In central and north Jordan, large cooking pots with side strap handles, thumb-impressed ledge handles, and internal glazing first appear no later than the 11th c. Whereas the chaff-tempered pots were meant for the cooking of family meals, the large strap-handle pots indicate the communal consumption of food at large regal/military gatherings.

2) Basins (Fig. 2.22–44). Basins feature in all three clusters, although with regional variations in fabric and decoration. The size and shape of basins reflect their use in the preparation and mixing of materials, from bread dough to potter's clay. Their slightly out-leaning sides provided an open working space within the basins for two hands, while the thickened rims withstood shock. Functionality was supported by flat bases and applied external loop handles positioned vertically or, in south Jordan, horizontally. Decoration of external surfaces was by surface treatment—bands of combed incision, impressed chisel rocking (especially in north Jordan), finger-impressed appliqué, and pinched rims. Being mostly handmade, variability in shape and decoration was considerable.

In north Jordan, basins of Jarash manufacture were of a hard, finely mixed gritty fabric with some larger white inclusions, consistently fired to an even gray but with occasional light brown faces. Rims were thickened by

applying a clay coil and rotating the basin on a slow wheel. In the seventh c. these rims were flat topped, sometimes with incised comb work, and finished with a distinct ridged collar on the outside. The ridges became less pronounced before disappearing around the early eighth c.; thereafter rims became rounded with pointed outside lips. In the eighth c. impressed chisel-rocked trails were added to combed wavy-line and pinched decoration (“pie crust,” “scallop”) common in the seventh c. Changes in the ninth c. were more subtle. The rim became elongated by sloping downwards and ending externally with a sharper point. Body decoration, if any, consisted of a few comb-incised straight and wavy lines.

The basins of al-Balqāʾ shared many attributes with those of north Jordan but were of different fabric and color. The corpus from Ḥisbān, for example, shows an aversion to “Jarash gray” in preference for much lighter hues: pinks, light red, reddish-yellow, and pale brown. Rim shapes varied between simple and enlarged, while surface treatment was by band appliqué or combed incision, or both (Walker and Sauer 2012: 525–27, 539–40).

The basins of highland south Jordan look different. Their color is generally more saturated and darker than al-Balqāʾ, ranging widely between cream, yellow, red, brown, and gray. A detailed analysis of body fabric has identified the use of a fast wheel, unlike farther north (Holmqvist 2019: 44, 56–59). External surface treatment was limited to incised horizontal lines and wavy comb patterns, sometimes accompanied with finger-impressed appliqué clay bands (Gerber 2016: 134, 144–45). Rim profiles have the same general form of a protruding or



outward-folded edge. Unusually, the Jabal Hārūn basins featured horizontal handles. Aylah's basins of the later eighth and ninth c. stood apart. They were made of the local cream-to-orange Mahesh ware in a different shape, especially in-turned flat rims, but shared the comb incisions on outer walls.

3) Containers – jars, jugs, and flasks (Fig. 3.45–67, Fig. 4.68–81). Smaller containers are household wares having a closed form and a neck, normally elongated. Jars, jugs, and flasks were produced in commercial workshops using shared fast-wheel methods. The local clay fabric was usually fine to moderate in grittiness, with vessel surfaces ribbed or smoothed, with a light cream-to-orange, red, and gray external surface.

Jars had two vertical handles with flat or round profiles placed either from rim to shoulder or, usually in larger jars, as rounded vertical loops attached at the shoulder. Jugs had a single rim-to-shoulder handle and a pinched rim, or a spout added to the upper body for dispensing liquids. Bases were omphalos, ring, or flat in style. Similar in manufacture were flasks with a small necked opening and two loop handles on the body. These were a soft brown to reddish-brown fabric in the seventh c. and, starting in the early eighth c., in a creamy-buff ware, both undecorated. Jar and jug decoration, when applied, was of two types: painted, usually in creamy-white or reddish-brown, although rare in the south (Amr and Schick 2001: 114, Gerber 2016: 135); or scratched, incised, applied, and cut interventions made before firing (everywhere). While the forms of jars and jugs did not vary much among the

three regions, the selection of clays, firing techniques, and decorative features at each workshop created a recognizable difference in appearance.

a) Widespread in the seventh to early 10th c. is a crisp, fine fabric evenly fired to a light orange to brown that originated in mid-sixth c. Jerusalem (Magneess 1993: 166–71). While commonly known as Fine Byzantine Ware, the name Palestinian Fine Homeware is preferred, given this series' origin and long existence. Thrown thinly on a fast wheel, elegant jars and jugs with incised body slashes reached all three clusters in Jordan (as with plates, cups, and bowls, see §5, below), and are a dependable chronological indicator. The jar and jug forms ceased in the early eighth c., while the other forms continued (5).

b) At Jarash both jugs and jars (and other forms; see §5) were manufactured in a gritty reddish-orange through brown-to-dark gray fabric, commonly adorned with freehand designs in white paint. First looping swirls, later preferences were for straight and wavy lines with stripes on rims and handles. These became widespread throughout north Jordan and al-Balqā' in the eighth century.

c) Starting a little later in time, a different ware type appeared, made up of middle-sized jars and jugs with ring or omphalos bases in a medium-hard, finely mixed fabric decorated in freehand, reddish-brown (dusky red) designs covering the vessel body. The series likely originated in al-Balqā' during the second quarter of the eighth c., with major jar and jug groups recovered

from destruction levels attributed to the AD 749 earthquake (Daviau 2010, Lichtenberger et al. 2016, Northedge 1992, Walmsley 1982). There is some confusion over chronology, but the series continued through much of the ninth c. (informed discussion in Holmqvist 2019:47–48). The misdating of wheel-made jars and jugs (as well as bowls, §5) in a medium-hard to softish Cream-Buff ware has confused ceramic chronologies in Jordan and Palestine alike. However, P. Watson at Fihl (Tabaqat Fahl – Pella) established that Cream-Buff ware originated in the late seventh century in the form of thick-bodied pilgrim flasks and jars; these came from the kilns of Baysān (Watson 1992: 243, Bar-Nathan 2011:231–32). Not until the later eighth to 11th c. do “Samarran”-style jars and jugs appear in the archaeological record. These are immediately recognizable by their smooth angular bodies in an eggshell-thin fabric, tall flaring necks, high-set handles from rim to body, paring on the lower body, and string-cut flat disk bases. Vessels were decorated with incised lines, finger imprints, and barbotine appliqué work including “turban” knobs on handles; later, vessels were formed in a mold. Neck filters were common. Traded from Palestine (al-Ramlah, Cytryn-Silverman 2010: 104–8; Ṭabariyah, Stacey 2004: 130–38), Cream-Buff wares are common at sites in the Jordan rift, both on main routes (Fihl, Walmsley 1991; Dayr Ayn Abātā, Grey and Politis 2012) and in rural sites such as Tall Abu Qadān (Franken and Kalsbeek 1975, unreliable chronology). They



are less common in the highlands except at major sites, notably Jadar (El Khouri and Omoush 2015: 17–18; Vriezen 2015: 98–100).

South of the Wādī al-Hasā, two-handle jars had long necks, and jugs with pinched and applied body spouts were locally made in a sandy fabric, fired to reddish hues often with grayish surfaces (seventh to eighth c.). Thereafter, color trended towards paler hues with light yellow to brown surfaces and reddish–pink cores (later eighth to ninth and 10th c.). Pottery excavated on Jabal Hārūn shows that, from the mid-seventh c. onwards, jars had a new form of out-curving necks and a variety of rim shapes clearly different from the smaller and thinner-walled “Byzantine” varieties (Gerber 2016: 137–41). The corpus also revealed that rigorous incision work on jars and jugs began in the seventh c. before flourishing in the eighth to early 10th c. Decoration featured a combination of straight and wavy comb bands framed within incised single horizontal lines on the middle–upper body.

To summarize, local production in the seventh c. over all three clusters used incised techniques carried over from the sixth c., but by the eighth c. painted motifs had become the favored decoration in north Jordan and al-Balqā’. Incision, however, remained dominant in south Jordan. The failure to recognize a divergence in decorative styles in the eighth to 10th c. has created a truncated typo–chronology for the south, with eighth–to–10th c. material placed in the sixth to seventh c. This has led to major errors in identifying settlement profiles by creating an artificial cultural void for early Islamic south Jordan.

4) Storage jars and amphorae (Fig.

4.82–92). Heavy storage jars (“dolia”) were handmade bulbous, neckless vessels with multiple handles, usually four. Round flat lids closed off the opening. Amphorae, being lighter and more portable, were intended for the storage and carriage of commodities. They fit one of two forms: either elongated, thick-bodied, two-handle vessels, or thinner, necked, “bag”-shaped jars with two handles and pointed lids. The heavier bulbous storage vessels were handmade with a wide opening to access the jar’s contents, either dry or liquid goods. In eighth–c. north Jordan these were made at Jarash in the same gray ware as basins (S2). Subsequent centuries saw little change in form, except a preference for larger sizes. Similar large neckless jars in local fabrics with plain, out-turning, or folded rims are common in al-Balqā’ and south Jordan (details, Gerber 2016: 142–43). Common to south Jordan in the seventh and eighth c. was a heavy handmade jar in a hard redware with cream-colored external walls repeatedly stamped with palm-leaf designs (Gerber 2016: 135; Grey and Politis 2012: 185; Holmqvist 2019: 50–51, 114). Chemical analysis confirms that these jars, of which only sherds have been found, were of local manufacture. At Gharandal, excavations uncovered a storage jar of later eighth to ninth c. date with loop handles made of a soft, flaky, orange-brown, handmade ware, and decorated on the exterior with incised decoration. In the 10th c. at Zughar, heavy jars were used in the preparation of the deep blue dye of indigo “on an industrial scale” (Politis, 2020 #7229: 97–100).

The baggy–amphora type popular in north Jordan and al-Balqā’ in the seventh to ninth c. was a medium–

sized jar made in a thinly thrown, brown-colored ware with a neck, thickened rim, ribbed body, and two loop–shoulder handles, freely painted in interleaving white lines, and often termed zīr (water jar), but imprecisely so, as these jars were associated with the wine trade (Grey and Politis 2012: 184). The pottery workshops of Baysān were major producers (Bar–Nathan 2011: 230–36). The plain, uncollared rims and tall necks of the eighth c. type continued into the ninth, in which longer necks combined with steeply sloping shoulders become prevalent. All three clusters produced similarly shaped, but usually undecorated, ribbed two-handled jars made on a wheel to service the local market. Designed for more distant trade were the elongated, thick-bodied, two-handle vessels, their contents often more expensive commodities, from tree nuts to garum, a pungent fish sauce (Holmqvist 2016: 218–19). The potters of Aylah were major producers (Melkawi, `Amr, and Whitcomb 1994). Other amphorae were brought in from coastal Palestine (notably amphorae from Gazzah/Asqalān) and lower Egypt, notably the Terenouti variety (Ballet 1994), in the seventh to ninth/early 10th c. The Ghazzah and Terenouti amphora types were traded into the Jordan highlands, whereas the specimens of the Aylah amphora type reached al-Jibāl. Use of all types was flexible, and the vessels could hold any number of materials, not only foodstuffs. Having value as repurposed containers and, due to their cost–effectiveness and robustness, amphorae could have lasted for decades serving secondary functions.

5) Bowls, cups, and plates – plain, painted, glazed (Fig. 5.93–141). Intended



for the serving and consumption of food, dining wares were a diverse and highly decorated class of pottery of mostly local manufacture in early Islamic Jordan. Bowls, cups, and plates initially shared designs with late antique wares until the eighth c., when sweeping changes occurred in their shape and decoration. As a product closely affiliated with community, these changes reflected rapidly evolving social customs and widening economic activity typical of the eighth to 10th c.

a) The most recognized group produced in the Jordanian highlands were the pictorial series termed “Jerash Bowls,” made from the mid-sixth c. to the third quarter of the seventh c. The discovery of kilns and wasters confirms Jarash as the main production site (Uscatescu and Marot 2016). Well-prepared if slightly granular clays produced a hard-fired, reddish-orange fabric with smooth surfaces and a ring base inspired by Late Roman Red Slip wares. The internal surface was decorated with impressed medallions or pictorial images in reddish-brown paint on a white background or infilled in white (Watson 1994). By the mid-seventh c., however, the insides of the bowls were often coated with a white slip, over which abstract designs were painted in a dusky red. While the earlier Jerash Bowls were widely traded, the seventh c. types were confined to north Jordan and al-Balqā’.

b) Potters at Jarash in the late seventh and eighth c. produced a variety of decorated bowls and drinking cups in a hard, moderately gritty fabric fired red to gray. The bowls in a fine

hard gray ware (similar to §2) were decorated with multiple trails of impressed chisel rocking, pinched rims, and strokes of white paint on the rim. Less common were thin-walled, reddish-colored bowls with rounded walls and internal white painted lines (same as §3.b). By the mid-eighth century, rounded cups were mostly dark gray in color with decoration in contrasting white painted lines either wavy or horizontal, but no incision. Overlapping with the white painted series were cups and bowls with abstract motifs in brownish-red paint. Jarash in the ninth c. saw the appearance of two distinctive forms: thin-walled burnished or incised cups in a near-black color and hand-crafted, flat-bottomed bowls known as Kerbschnitt ware, the sides of which featured deeply cut geometric designs copied from woodwork. Similar bowls at Fihl were larger and included painted decoration in white and deep red.

c) Jerash Bowls were replaced by a new series of bowls of uncertain origin, perhaps partially at Jarash (although no kilns or wasters have been located) but also at sites in al-Balqā, given the many finds there. Generally, the fabric was hard-fired to colors of reddish-brown to orange-buff (cf. §3.c), a shared attribute indicative of potters relocating from Jarash in the early eighth c. Prominent were large bowls (24–33 cm) with outward-leaning ring bases and distinctive concave rims (“double rim”) and occasionally convex rims. Applied over a creamy slip on the interior surface of the bowls were patterned

straight and wavy lines in deep red to reddish-brown paint. Small bowls of cream, pink, and reddish-yellow hues were also made in a variety of shapes, with some decorated with abstract designs in dusky red paint. Around the middle of the eighth c. a new style of high-walled bowls, cups, and lids with applied dusky red paint came to dominate the field of high-quality, high-status pottery in Jordan; these continued well into the ninth c. The two main varieties are straight-walled cups with abstract designs, and vertical-walled, flat-bottomed bowls with elaborate geometric motifs, with lids for each. Cups in a reddish pink to beige color had curved bases, thin walls, and an enlarged rim with an out-turning pointed lip, with painted abstract designs on external walls featuring pendant garlands (loops), bisecting lines (lattice), and parallel wavy lines. Their relative rarity in secure AD 749 earthquake contexts would indicate that cup production started only a few years before the earthquake. Entirely absent in pre-AD 749 contexts, however, are the fine ware bowls known as “Palace ware,” with a strong presence at the Ammān Citadel palace. These were decorated with intricate geometric motifs in dusky red paint reminiscent of artistic frames used in contemporary wall paintings and mosaics. The formal paintwork on the bowls is in stark contrast to the free-hand abstraction of the earlier cups, large bowls, and dusky-red painted jars and jugs (§3.c). The production of dusky-red vessels probably ended in the early 10th c.,



and by that date, in the case of finer wares, any late antique influences in pottery form and ornamentation had ended.

d) Originating in the mid-sixth c. and continuing into the 10th were bowls, cups, and plates in Palestinian Fine Homeware (above, §3.a; for corpus and dating, see Magness 1993, 1999, 2016). Finds of PFH bowls and cups are more common in the Jordan Rift valley than the highlands, but specimens have been found in all three cluster areas. From the sixth and especially seventh c., the bowl/cup form had burnished walls and a ring base shaped by paring, and often a single, evenly incised, wavy line below the external rim. The eighth to 10th c. bowls/cups replaced the ring base and incised line for heavily pared and burnished external walls on the lower half, a rounded base, and lengthened sides with thin walls. Uncommonly, cups late in the series were painted in red, black, white, and green (Grey and Politis 2012: 174, 190).

e) New to the field were bowls in Cream-*Buff* ware (§3.d, second half of the eighth to ninth c.), featuring flat bases and high sides decorated on the outside with incised lines irregularly arranged within bands below the rim. Clay dots were sometimes added. These traded bowls most likely originated in Ṭabariyah (Stacey 2004: 92–93). Similar bowls were found at Aylah in Mahesh ware. More generally, a wide range of bowl types from the later eighth to ninth c. were recovered from Khirbat Yājūz near Ammān (Khalil and Kareem 2002:

117–19). This diverse collection in two ware groups shows the extent of localized production and supply in domestic wares during the eighth to ninth c.

f) Recently, opinions on the origins of early Islamic glazed pottery have changed dramatically. Whereas the first mass-produced glazed bowls and jars were once seen as ninth c. Irāqī copies of imported Chinese wares, new evidence from Egypt and al-Aqabah argues for an eighth c. date for the manufacture of tin-based glazed wares in Egypt, known as Coptic Glazed ware, and their introduction into Arḍ ash-Shām (Matin, Tite, and Watson 2018; Watson 2014). Glassmaking was an ancient profession in the east Mediterranean, and readily provided the technology required to layer colored glass on an earthenware base. Crucial evidence from Aylah has shown that two local glazed varieties quickly appeared sometime in the second half of the eighth c. as demand grew, one sourced from the Ḥijāz and another from coastal Palestine (Whitcomb 1989a, 1990–1991). By no later than the last quarter of the eighth c., the distinctive glazed series collectively named the Yellow Glaze Family (YGF, the glaze being an established lead-silica-tin mixture) had become standard throughout Arḍ ash-Shām (Watson 2014: 128), with more than enough variation to suggest multiple production centers. In Jordan, Coptic Glazed and related YGF wares (mostly the latter) have been found at Jadar (Umm Qays), Fihl, Jarash, Ammān, Mādabā, and Dayr Ayn Abātā, in addition to

Aylah. Embodying the aesthetics of a new era, these brightly colored glazes brought glamour and style to households through an affordable yet prestigious spectacle that enriched community life.

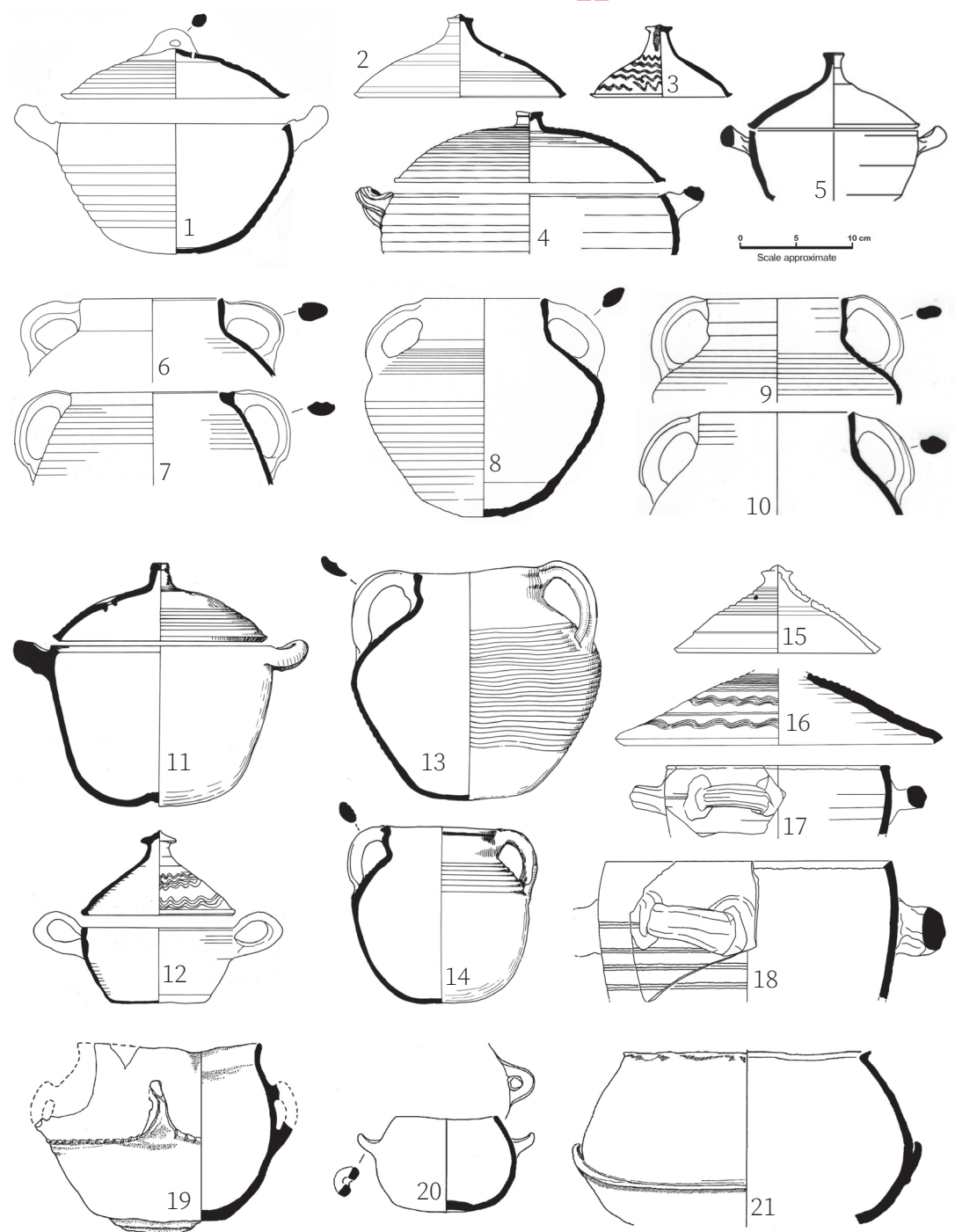


Figure 1 – Cooking pots and casseroles



Figure 1 – Cooking pots and casseroles

a) North Jordan Cluster

1. Cooking casserole and lid with loop handle, ribbed exterior, gritty well-mixed fabric with copious inclusions, smokey orange-brown to gray, Fiḥl (Jarash kilns), earthquake deposits, AD 749.
2. Cooking casserole lid, “button” handle, fabric as 1, Jarash (North Theatre kilns), earthquake deposits, AD 749.
3. Serving casserole lid, button handle, patchy orange-red fabric with medium to small inclusions, white paint decoration, Fiḥl (Jarash kilns), earthquake deposits, AD 749.
4. Cooking casserole and lid with button handle, mild ribbing on exterior, fabric gritty with copious inclusions, reddish-brown (10R 4/4), Fiḥl (Jarash?) ninth c.
5. Serving casserole and lid with tall button handle, reddish fabric with medium to small inclusions, white paint on handles (likely Jarash), eighth-ninth c.
- 6–7. Cooking pots necked and neckless, fabric as 1, Fiḥl (Jarash kilns), earthquake deposits, AD 659 (seventh c.).
8. Cooking pot, necked, fabric as 1, Fiḥl (Jarash kilns), earthquake deposits, AD 749.
- 9–10. Cooking pots, necked, shallow ribbing, fabric as 4, Fiḥl (Jarash), later eighth-ninth c.

b) Al-Balqa’ Cluster

11. Cooking casserole, dark gray (N4/), ‘Ammān Citadel, earthquake deposits, AD 749.
12. Serving casserole, brownish fabric, flat base, pointed button handle, combed wavy lines on lid, Umm al-Walīd, possibly earthquake deposits dated AD 749 (eighth c.).
- 13–14. Cooking pots, coarse ware, dark gray (N4/) to reddish-yellow (5YR 6/6), ‘Ammān Citadel, earthquake deposits, AD 749.

c) South Jordan Cluster

15. Casserole lid, button handle, two steam holes, gritty, patchy cream (10YR 8/2) to light red, core red-light red (2.5YR 5.5/6), regular shallow ribbing, Jabal Hārūn Phase XI/XIII, mid-seventh to ninth/10th c.
16. Casserole lid, incised wavy and horizontal lines, gritty, pink (7.5YR 8/1), core light red (2.5YR 6/6), slight ribbing on upper part, Jabal Hārūn Phases XIII–XIV, mid-eighth to ninth/10th c.
17. Casserole, gritty, blackened exterior, core light red (2.5YR 6/6), slight ribbing, Jabal Hārūn Phase XI, mid-seventh to mid-eighth c.
18. Casserole, large deep shape with ribbed and grooved exterior, low-set horizontal handle, gritty, gray-light brown (7.5YR 5.5/1–6/3), core light red (2.5YR 6/6), Jabal Hārūn Phase XIII mid-eighth to 9/10th c.
19. Globular cooking pot, handmade chaff-tempered ware, slipped, vertical loop handles, finger-impressed band, light red (10R 6/6) to strong brown (7.5YR 5/6), core dark gray (N4/), Gharandal, later 10th and 11th c.
20. Globular cooking pot, handmade chaff-tempered ware, horizontal loop handles, light reddish brown (5YR 6/3), core very dark gray (7.5YR N3).
21. Globular cooking pot, handmade chaff-tempered ware, clay band around lower body, pink (5YR 7/4) to reddish yellow (5YR 7/6), pink core (5YR 7/4).

Sources: Blanke 2017, Gerber 2016, Haldimann 1992, Holmqvist 2019, Northedge 1992, Schaefer and Falkner 1986, Walmsley 1982, 1995, Walmsley and Grey 2001, Watson 1992b.



Figure 2 – Basins



Figure 2 – Basins

a) North Jordan Cluster

22–29. Jarash Gray ware, dark gray fabric, handmade, vertical loop handles, small to medium gray, white, and transparent inclusions, Fihl (Jarash kilns); 22 earlier sixth, 23–24 later sixth, 25–27 early mid–seventh, 28 seventh–mid eighth, 29 later seventh to mid–eighth c. (P.M. Watson 1992b: fig. 6). The chisel and incised decoration of the later seventh c. is replaced by banded wavy and/or straight comb incisions by the mid–eighth c.

30. Jarash Gray ware (as above). The larger ninth c. basins (2) are of a darker gray (N5/), have flat and more out–pointing rims, and either single or multiple wavy lines below the rim or no decoration.

b) Al–Balqā' Cluster

Basins are handmade with a thickened rim in a variety of styles and forms. The near–vertical walls have loop handles and a flat base, and wavy–comb incised decoration (see Daviau 2010: 275–84). All are eighth c.

31. Combed walls, very pale brown (10YR 8/3), core light red (2.5YR 6/8), rim 42.5 cm.

32. Red ware, extensive wavy and intertwining combing, very pale brown (10YR 8/2), core pink (5YR 7/4), internal rim 40.0 cm

33. Red ware, everted thickened rim, pale yellow (2.5Y 8/2), core light reddish brown (2.5YR 6/3), internal rim 45.0 cm.

34. Red ware, pinched rim and wavy comb decoration between handles, very pale brown (10YR 8/2), core light red (10R 6/6), rim 27.0 cm.

c) South Jordan Cluster

Khirbat al–Dharīḥ, Jabal Hārūn, and Aylah mostly sourced plain pottery from local workshops, such as these basins.

35. Basin, in–turning rim, comb–incised wavy lines on rim top and below rim, rim >36.0 cm, light reddish brown (5YR 6/4), Jabal Hārūn Phase XIII, eighth/ninth–10th c. (likely late seventh to eighth c.).

36. Large deep basin, flat rim and projecting lip, finger–impressed clay strip and incised wavy lines, rim 27.0 cm, white (10YR 8/2), core light red to red (2.5YR 5/6), Jabal Hārūn Phase XIII, mid–eighth /ninth –10th c.

37. Basin, flat grooved rim and projecting lip, horizontal handle, incised wavy lines, rim 25.0 cm, core light reddish brown (5YR 6/4) to red/light red (2.5YR 5/6), Jabal Hārūn Phase XIV, mid–eighth /ninth –10th c.

38. Flat base basin, protruding flat–topped rim, slight ribbing at base, grooved horizontal loop handle, combed wavy and straight incised lines on exterior walls, rim 26 cm, Khirbat al–Dharīḥ, mid–eighth to mid–ninth c. (rectified image).

39. Large basin, ribbed high walls, thick rim, flat base, medium sandy grits, cream surfaces, core red, Aylah (Aylah kilns) later seventh into eighth c.

40. Large basin, high–walled, flat vertical rim, incised walls, Mahesh (cream) ware in a coarse grit, Aylah later eighth to ninth c.

41. Heavily decorated basin, out–turned incised rim, comb incised “arcade” resting on a finger–impressed clay band on the exterior basin walls, coarse grit and chaff fabric with cream surfaces and greenish cream core, rim 50, Aylah, 10–11th c.

42. Flat base basin, acutely angled straight sides, out–turned rim incised with wavy lines, sand and mica tempered buff–orange fabric with exterior cream surface and dark green glaze on rim and interior, rim 46 cm, Aylah, 10th–11th c.

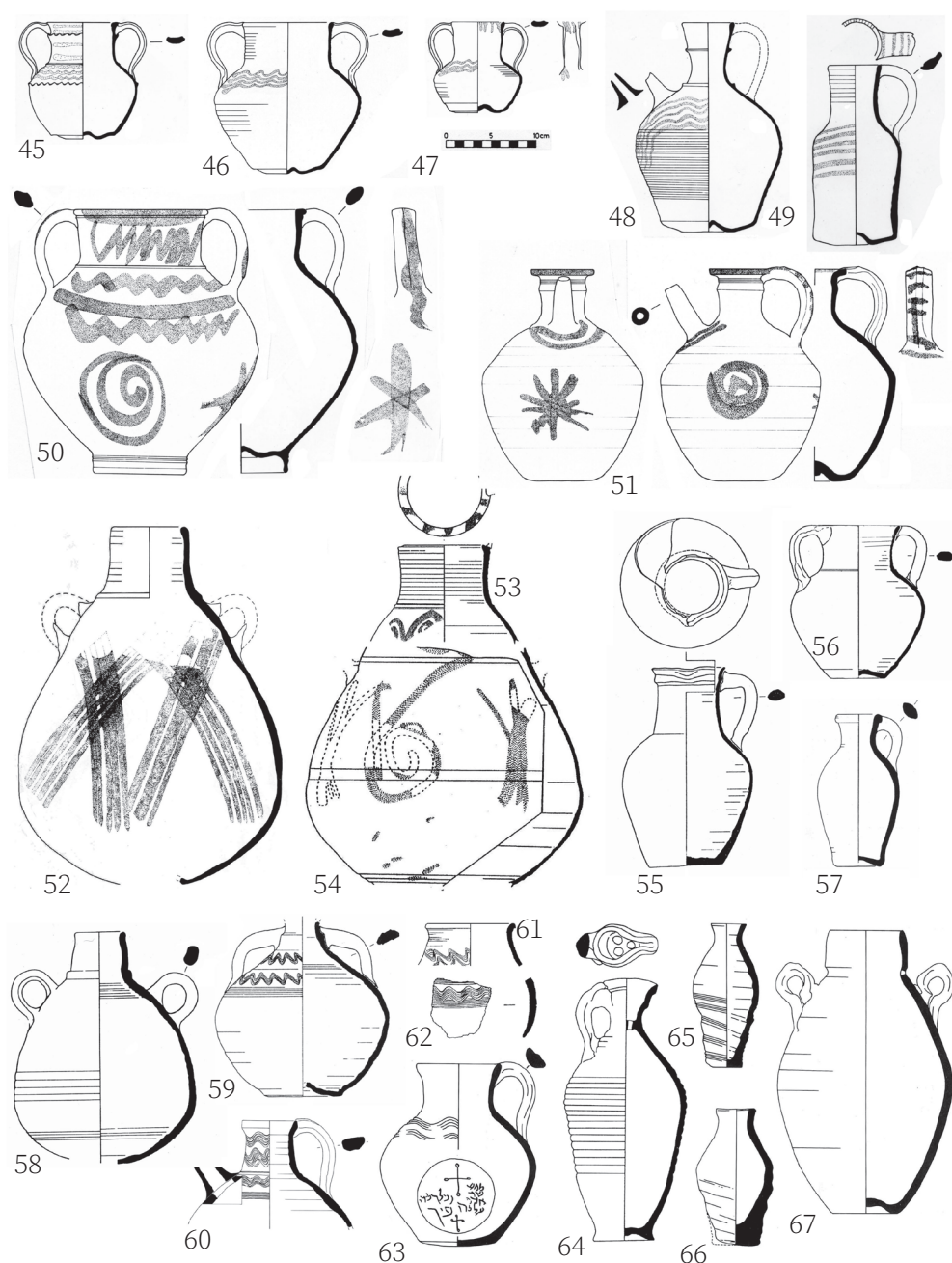
43. Bulbous rim of basin, incised and finger impressed clay band decoration, sand–tempered red–orange fabric with buff–orange surfaces, rim 43 cm, Aylah, 10th–11th c.

44. ‘Tupperware’ basin, notched rim and incised wavy lines between vertical loop handles, sandy orange–tan fabric with cream–orange surfaces, Aylah, 10–11th c.

Sources: Daviau 2010, Edwards et al. 1990, Gerber 2016, Holmqvist 2019, Watson 1992b, Whitcomb 1988, 1989.



Figure 3. Containers – jars, jugs, and flasks



a) North Jordan Cluster

The white-painted jars and jugs are a product of the Jarash kilns and are found in large numbers at Fihl. There was also an unpainted variety.

45. Small jar, small grits with occasional medium-sized white limestone grits fabric fired patchy red-orange to gray, two vertical thin strap handles and an omphalos base, pie-crust ridge on the neck and body, multiple wavy lines on body in a thin white paint, Fihl (Jarash), mid-eighth c. (earthquake destruction).

46. As 1 but without pie crust, many small white limestone and gray chert grits fired red (2.5YR 5/8) to gray (N5/) core grey (N5/), bands of wavy lines in white paint on body, Fihl (Jarash), eighth c.

47. As 1 but without pie crust, same fabric fired patchy 2.5YR 5/6 to 7.5YR and core 2.5YR 5/6, white paint in bands of wavy lines on shoulder and vertical multiple strokes on handle and rim, Fihl (Jarash) eighth c.

48. Spouted jug, thin neck and single strap handle, ribbed body, omphalos base, Fihl (Jarash), mid-eighth c. (earthquake destruction).

49. Jug, tall wide ribbed neck with ribbing, probable pinched rim spout (missing), deep omphalos base, white paint lines, Fihl (Jarash), mid-eighth c (earthquake destruction).

b) Al-Balqa' Cluster

The propensity for Dusky-Red Painted ware in al-Balqa' indicates production in this district, with at least two main artisan centers.

50. Jar, Dusky-Red Painted ware, smooth bulbous body, wide neck with groove below rounded rim, two handles from rim



to body, high ring base with omphalos, small to medium white and gray grits, light orange fabric with a white slipped appearance, lavish decoration in thick dusky red paint (10R 3/4), Fihl (origin uncertain), mid–eighth c. (earthquake destruction).

51. Spouted jug, Dusky–Red Painted ware, tall neck with flat outturning rim, omphalos base, single handle, fabric, decoration, source and date as 49.

52. Large jar, Dusky–Red Painted ware, tall shallow–ribbed neck, bulbous body with two loop handles, omphalos base, fabric of small sandy grits fired pale yellow (5Y 8/2), core pinkish gray (7.5 YR 7/2), weak red paint, rim 7 cm, al–Muwaqqar, (origin uncertain), mid–eighth to earlier ninth c.

53. Large jar neck, Dusky–Red Painted ware (variant), tall out flaring shallow–ribbed neck, finely mixed fabric with small gray to medium white, transparent, and light orange (grog) inclusions fired light reddish brown (2.5YR 7/4), core light brown (7.5YR 6/4): flat rim with red paint (10R 5/6), Fihl (likely different production center to #50–51) mid–eighth to earlier ninth c.

54. Jar body, Dusky–Red Painted ware (variant), shallow ribbing on upper body, finely mixed fabric with small to medium gray, transparent, and white inclusions fired very pale brown (10YR 8/3), core pink (7.5YR 7/4), paint dark red (7.5R 3/4), Fihl, as #52. c) South Jordan Cluster

55. Jug, slightly flaring neck with pointed rim, pinched spout set at right angles to a single handle, flat base, well–mixed fabric with fine gray and white grits fired light brown, Khirbat al–Dharīḥ (local source), later eighth to early ninth c.

56. Jar, wide neck, two handles from rim to body, omphalos base, fabric of fine white and gray grits fired pink–orange, Khirbat al–Dharīḥ (origin uncertain), eighth c.

57. Juglet, flaring neck, incurving base, medium hard fabric of rough texture with many small to medium round and subangular sand inclusions, few mica flakes; small to medium voids, fired pale yellow (5Y 8/2) core very pale brown (10YR 7/4), Ḥumaymah (Aylah), later seventh into eighth c.

58. Small jar, two loop handles on body, hard fabric of small to medium round and subangular calcite and sand inclusions, small to medium, fired gray (10YR 5/1) throughout, Humaymah (Aylah), later seventh c. into eighth c.

59. Small jar, very bulbous body with omphalos base, slender neck, with two solid handles from neck to body, incised decoration, light gray fabric, Khirbat al–Dharīḥ (origin uncertain), eighth to early 10th c.

60. Spouted jug, long neck, out–turning pointed rim, rim to body handle, applied spout to body, two comb–incised lines on neck and one wavy and one straight line on upper body, fired gray–light gray (10YR 6/1), core reddish yellow (5YR 6/8) to gray, Jabal Hārūn Phase XI/XIII, mid–seventh to mid–seventh to ninth/10th c.

61. Small jar neck, hard “metallic” ware, out–curving neck, handles missing, comb–pointed wavy lines, thin moderately gritty fabric fired pinkish gray (7.5YR 6/2 to 5YR 6/2) core light gray (5YR 7/1), Gharandal, ninth to early 10th c.

62. Jar body sherd, Sandy ware, vigorous bands of wavy and straight lines, coarse sandy fabric fired light red (2.5YR 6/6), core red (2.5YR 5/6–5/8), Gharandal, ninth to early 10th c.

63. Jar, Cream ware (Mahesh), wavy comb incisions on shoulder, black paint cross and text on base, moderately gritty sand fabric, Aylah, later eighth to ninth c.

64. Jug, piriform neck with strainer, neck to shoulder handle, ribbed body, concave base, medium sandy fabric fired cream to buff, Aylah (Aylah kilns), later seventh into eighth c.

65–66. Small handles jars, handmade, out–curving rim, thick walls, flat base, orange ware, medium–sized sandy grits, Aylah later eighth to ninth c.

67. Jar, Cream ware (Mahesh), straight neck, pointed rim, two loop handles on upper body, omphalos base, medium sandy grits, cream slip on interior and exterior, Aylah, later eighth to ninth c.

Sources: ‘Amr et al. 2000, Gerber 2016, Najjar 1989, Waliszewski 2001, Walmsley 1982, 1995, 2001 #1531, Whitcomb 1989, 2001.

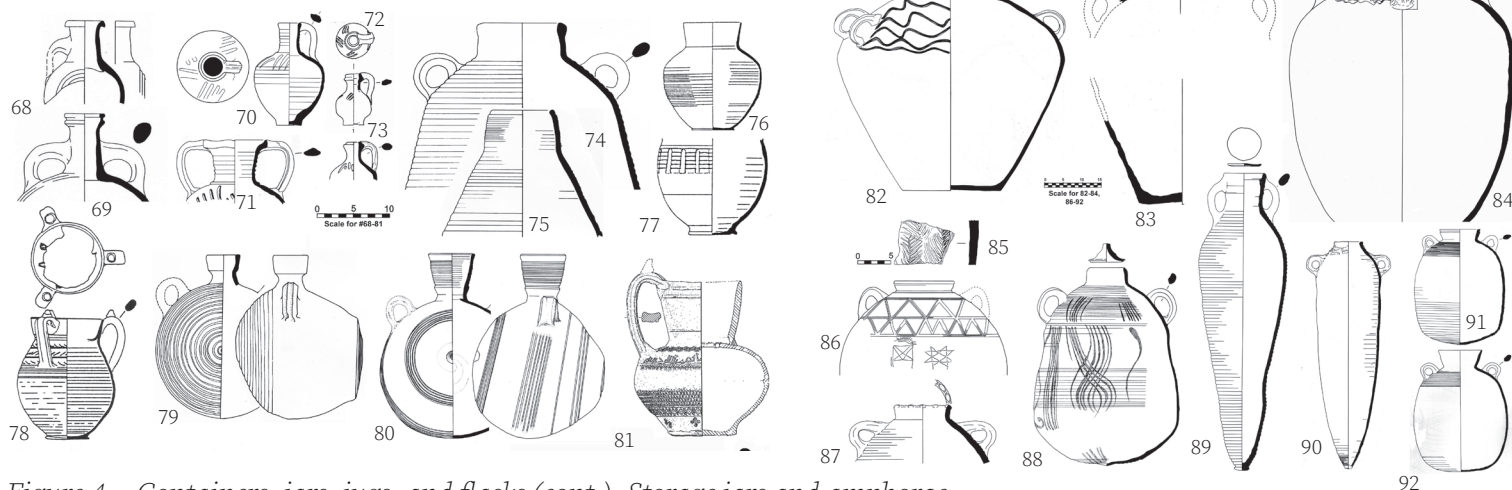


Figure 4 – Containers: jars, jugs, and flasks (cont.); Storage jars and amphorae

68. Flask, tall neck, out-turned rim, circular body, medium gritty sand fabric, cream, Aylah (Aylah kilns), later seventh into eighth c.

69. Large flask, as above but larger, medium gritty sand fabric, light orange with cream surfaces, Aylah (Aylah kilns), later seventh into eighth c.

a) Interregional

70. Jug, Palestinian Fine Homeware (Fine Byzantine Ware), tall straight neck, simple rim, handle from rim to shoulder, slightly concave base, long nicks running parallel on shoulder, very finely mixed fabric fired reddish yellow (5YR 6/6) core gray (5YR 6/1), Humaymah (Jerusalem area), late seventh to early eighth c.

71. Jar (jug?), Palestinian Fine Homeware Form 1B, outward-flaring ribbed neck with sharply out turned rim, sets of four nicks on shoulder, fine mix with some minute dark and limestone grits, "slurried" surface, fired hard reddish yellow (5YR 5/6) core gray (7.5R 5/0), rim 9.0 cm, Fiḥl (Jerusalem area), mid-sixth to early eighth c.

72–73. Small jugs, Palestinian Fine Homeware Form 2A, very narrow neck, handle from rim to shoulder, nicks on shoulder, bulbous body, flat base, ware as previous, rim 3.0 cm, (72) Khirbat al-Dhariḥ and (73) Fiḥl (Jerusalem area), mid-sixth to early eighth c.

74. Jar, Cream-buff ware, fine inclusions with small air voids, medium height neck, bulbous rim, two loop handles on shoulder, body ribbed, Fiḥl (Baysān kilns), early eighth c.

75. Jar, Cream-buff ware (handles missing), tall-necked jar with deep groove below rim, fine ribbing on neck and broader ribbing on body, softish fine fabric with small gray chert and reddish-brown 'grog' grits, fired pale yellow (5Y 8/3) core very pale brown (10YR 7/4), Fiḥl (origin uncertain), early to mid-ninth c.

76. Jar, Cream-buff ware (handles missing), thin-bodied, slight ribbing otherwise plain, medium fabric with many small, medium, and occasionally large gray and reddish grits, voids, trimmed base and lower body, fired pink (2.5YR 8/3), Fiḥl (origin uncertain), mid- to late-ninth c.

77. Jar, Cream-buff ware (neck and handles missing), thin-bodied, fine ribbing on body with broad vertical finger grooves, pared lower body and disk base, fine fabric with many small gray chert and white limestone grits with some larger limestone pieces fired pale yellow (2.5Y 8/2) core pale yellow (2.5Y 7/4), Fiḥl (origin uncertain), early to mid-ninth c.

78. Jar, Cream-buff ware, thin-bodied, wide neck folded inwards to form sieve, three handles with applied "turbans" from rim to shoulder, three bands of incised decoration of angled arcs bounded by four incised lines on upper body, fine ribbing mid-body and pared lower body and base, finely mixed fabric with many small gray inclusions and some medium to small white and clear inclusions, voids, fired pink (2.5YR 8/3), Fiḥl (origin uncertain), mid- to late-ninth c.

79. Flask, Cream-buff ware, plain applied neck, body with ribbed rounded and projecting sides, small vertical loop handle (second



handle missing), finely levigated ware fired pinkish white (2.5YR 8/2)

80. Flask, Cream–buff ware, applied elongated neck with sharp ribbing, body with rounded and projecting sides, small vertical loop handle (second handle missing), patterned mild ribbing on body and evidence of paring, well–levigated ware with very few small black and limestone grits, fired pale yellow (5Y 8/3) core pink (2.5YR 8/3), Fihl (origin uncertain), mid– to late–ninth c.

81. Jug (Ewer), mold–made, tall wide neck, broad body, single rim to shoulder handle with applied “turban,” ring base, extensive molded decoration in abstract motifs and Kufic inscription (name of maker, Abū ‘Isā al–Wāṭiq, and blessings), fine pale brown fabric, Dayr ‘Ayn ‘Abātāorigin uncertain, al–Ramlah?), later ninth to 10th c.

Storage jars and amphorae

b) North Jordan Cluster

82. Storage jar, Jarash Gray ware, handmade with wheel–finished rim, bulbous, neckless, low out–turning rim, two double–set vertical handles, wavy incised lines on shoulder between handles, flat base. Fihl (Jarash kilns), mid–eighth c. (earthquake destruction).

c) Al–Balqa’ Cluster

83. Storage jar (incomplete), handmade, fired very pale brown (10YR 7/3), Amman Citadel (origin uncertain), 11th c.

d) South Jordan Cluster

84. Storage jar, sandy red ware, handmade with low wheel–finished rim, high–set shoulder with four unevenly spaced vertical handles and shallow incised wavy lines, tapered sides that end in knob base (missing), gritty, medium–hard fabric of small to medium sand inclusions, smoothed exterior, fired dark reddish gray (5YR 4/2) core red 10R 5/8, rim exterior light red (2.5YR 6/7) with an uneven slip on the exterior body of, from top to bottom, pinkish gray/reddish gray (5YR 5.5/2) to pink/light reddish brown (5YR 6.5/3), Humaymah (origin uncertain, Zurrabah kilns near Petra?), mid–seventh c. (+).

85. Storage jar (sherd), handmade, neckless with two ring handles, outer walls decorated with palm branch impressions, heavy gritty and rough fabric, fired red (2.5YR 5/6), Gharandal (origin uncertain), later? sixth to seventh c.

86. Jar, Soft Brown ware, handmade, low out–pointed rim, two loop handles on shoulder with combed triangles between horizontal bands supplemented with scratched designs below, softish and flakey brown ware of fine sandy grits, fired pink (5YR 7/3) to light reddish brown (2.5YR 5/6) core red 2.5YR 5/6, Gharandal (origin uncertain, probably local), later eighth–early ninth c.

87. Jar, red ware, straight neck with pinched rim, two loop handles on shoulder, ribbed body, red fabric with cream exterior, coarse grits, Aylah, likely local as some jars “may be Aqaba products, particularly [the] one with a pie–crust rim” (Whitcomb 2001: 298), late seventh to mid–eighth c.

89. Amphora, cream ware, cylindrical with long wide neck with internal ledge to support a disk stopper, stout handles from top of neck to upper shoulder, pronounced ribbing on body, tapering to flattened knob, dense gritty fabric with abundant medium sand fired cream/greenish cream, core commonly pinkish to dark red, Aqabah (local kilns), seventh to eighth c., date range 5th to ninth/early 10th c.

e) Interregional

88. Amphora, Brownish Gray White Painted ware, wheel made, ribbed body, vertical neck ending in an in–sloping pointed lip to receive a pointed lid, two vertical handles above a protruding ridge at the junction of shoulder and body, rounded base, a hard, thin, brownish–gray brown fabric with small to medium white, gray and brown inclusions, freely applied white painted decoration in broad intersecting wavy lines and loops, Fihl (Baysān), mid–eighth c. (earthquake destruction). Widely found in North Jordan and al–Balqā.

90. Amphora, Gaza (Ghazzah) type, cylindrical, neckless, clay accretions below rim, two vertical loop handles on shoulder, slurried body tapering to pointed base, fine hard fabric with small gray and opaque pebbles and occasional large grits, fired pale brown to brown, Fihl (Ghazzah kilns), earthquake deposits AD 659, date range late 5th to late seventh c.

91–92. Amphora, necked jar with two shoulder loop handles, fine ribbing/combing on upper body and broad ribbing on lower body, gritty hard fabric with many gray, mica, and organic inclusions, fired dull reddish brown with grey core, Fihl (Egypt delta, Terenouti), mid–eighth c. (earthquake destruction). Found in eighth c. North Jordan (Fihl, Jarash) and al–Balqā (Umm al–Raṣāṣ, Umm al–Walīd) contexts.

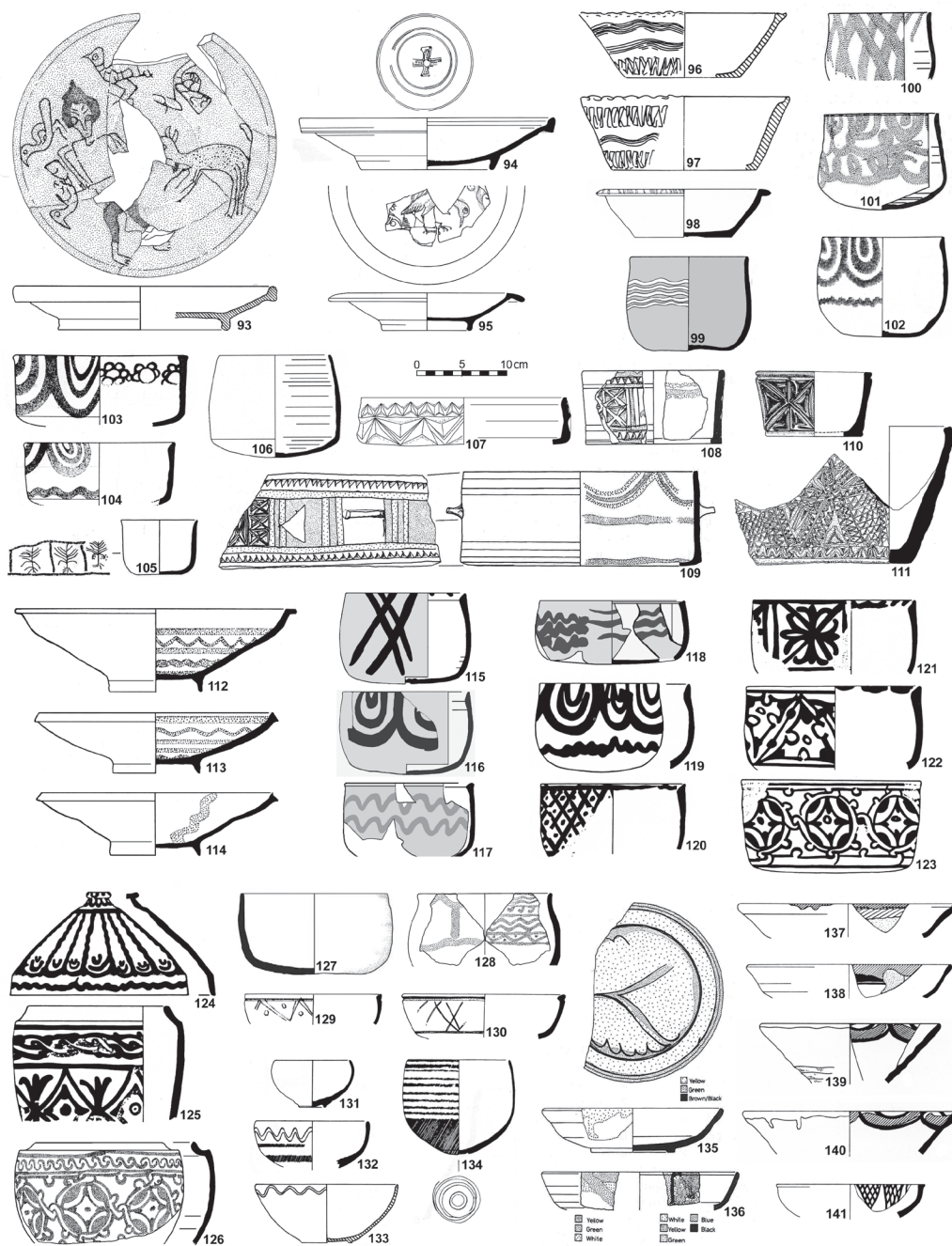


Figure 5 – Bowls and platters: plain, painted, glazed

The term bowl – bowl (a moderately deep, usually round-base open container) is used rather loosely to mean any smaller, mostly domestic, vessel for the serving of edibles, from prepared foods to fruits, nuts, and sweets. The growing consumption of rice and changes to food preparation in early Islamic times encouraged the trend towards larger and deeper bowls.

a) North Jordan Cluster

93. Jerash Bowl, almost complete, thickened rim with inward sloping ring base, pinkish-orange fabric, quartz temper, cream slip outside with a white slipped border and inside, decorated in dusky red paint inside with a stylized hunt scene consisting of a male human ringed by four birds and a feline, rim 28.4 cm, base 18.5 cm, height 4.8 cm, Jarash macellum (Jarash kilns), early to mid-seventh c.

94. Jerash Bowl, almost complete, thickened rim (Watson 1989 7b) with inward-sloping ring base, internal stamped decoration of cross in medallion, light red fabric throughout (2.5YR 6/8), Pella earthquake deposits AD 659 (Jarash kilns), early to mid-seventh c. (courtesy of P. Watson).

95. Jerash Bowl, almost complete, drooping ledge rim with rounded end (Watson 1989 12b), inward sloping ring base, fabric light red (2.5YR 6/8), decorated inside on base with pecking bird (cf. birds in #93) in weak red (10R 4/4) paint on white background, Moh 4.5, Pella earthquake deposits AD 659 (Jarash kilns), early to mid-seventh c. (courtesy of P. Watson).

96. Bowl, Jarash gray ware (#22–30), finger-impressed rim, two rows of comb-incised wavy lines above a single band of chisel-rocked impressions, blackish hue,



rim 26.8 cm, base 15.0 cm, height 8.2 cm, Jarash (Jarash North Theatre kilns, AD 749 destruction), range late seventh to earlier eighth c.

97. Bowl, Jarash gray ware, finger-impressed rim, two bands of chisel-rocked impressions separated by one row of comb-incised wavy line, blackish hue, rim 26.4 cm, base 8.0 cm, height 9.5 cm, Jarash (Jarash North Theatre kilns, AD 749 destruction), late seventh to earlier eighth c.

98. Bowl, Jarash gray ware, shallow bowl with flat base and ledge rim ending at a point, multiple strokes of white paint on rim top, small to medium sized white limestone and quartz-like grits, patchy light red (2.5YR 6/6) to light brown (7.5YR 6/4) and gray (N5/) core dark gray (N4/), Jarash (Jarash North Theatre kilns, AD 749 destruction), eighth c.

99. Hand bowl, white painted, tall concave walls to chamfered rim, slight lift to base, group of five white painted wavy lines on mid outside wall, grey fabric (cf. #45), Jarash (Jarash kilns), eighth c.

100. Hand bowl, red painted, tall concave walls to chamfered rim, slight ribbing on internal walls, bold crisscrossed lines in dull red paint with trails extending over the rim the internal surfaces, small and some medium white and grey inclusions fabric, patchy light red to light grey (2.5YR 6/8 to 2.5Y 8/2), paint dark red (7.5R 3/4), Fihl (Jarash kilns), eighth to ninth c.

101. Hand bowl, red painted, tall straight walls to chamfered rim, shallow ribbing on internal walls, mild carination to round base, liberal application of continuous line of loops on exterior and, at rim, garlands in red paint, fabric same as #100, light red to pale yellow (2.5YR 7/6 to 2.5Y 8/3), paint dark reddish brown (2.5YR 2/3), Fihl (Jarash kilns), eighth to ninth c.

102. Hand bowl, red painted, high vertical walls with chamfered rim, and flat base, ordered row of garlands hanging from rim and wavy line below in deep red paint, Jarash (Jarash kilns, south decumanus, later eighth c.), later eighth to ninth c.

103–104. Bowls, red painted, wide opening, vertical walls rounding to flat base, pointed (chamfered) or flat-topped rim, red-painted garlands at rim with internal decoration (#103) or wavy line below (#104, cf. #102, which suggests a demand for serving sets).

105. Small hand bowl, largely complete, black ware, straight sides with splayed pointed rim, smoothed external surface with incised date palms (note date bunches) within finely chiseled borders, hard fabric with many small white limestone grits (cf. #45) gray (10YR 5/1) core light brownish gray (10YR 6/2), Fihl (likely Jarash kilns), mid-eighth to ninth c.

106. Hand bowl, black ware, largely complete, slightly incurving sides, pointed rim, carination to rounded base, burnished sides, hard fine fabric, black, Jarash (likely Jarash kilns), later eighth to ninth c.

107. Bowl, kerbschnitt, low sides, flat base, cut pattern of alternating triangles, small to medium lime and quartz grits, light yellowish brown (10YR 6/4), Jarash (uncertain origin), seventh to eighth c.

108–109. Bowl, kerbschnitt, handmade gray ware, flat base, vertical walls with ledge handles, cut and incised geometric patterns with red-painted exterior panels and red and white painted lines inside (possibly copies of wooden originals), compact fabric with many white, yellow, grey, red and black inclusions of various sizes, fired light red to brown/grayish brown (2.5YR 7/7 to 7.5YR 5/3 – 10YR 5/2) paint dusky red (7.5R 4/4 – 10R 3/3) and very pale brown (10YR 7/3) on exterior, red and cream garlands and horizontal lines on interior, Fihl (Jarash?), mid-to late ninth c.

b) Al-Balqā' Cluster

110. Bowl, kerbschnitt, grey ware, handmade, high walls, pared rim, flat base, occasional thumb impression, outside walls covered with cut decoration of adjoining squares each segmented into two-by-two matching triangular excisions all framed within zigzag bands of small triangular excisions, gritty ware, dark gray throughout, Rujm al Kursī, (local source?), likely ninth to 10th c.

111. Bowl, kerbschnitt, pink ware, handmade with deep vertical sides, flat base (d. 18 cm.), cut ware in triangles; molded decoration; self-slipped on inside; small and medium limestone grits, pink (5YR 7/4) core pinkish gray (5YR 7/2), Khirbat Yājūz (wasters suggest a local production), 10th to 11th c.

112. Bowl, out-pointing ring base, gently curving sides with upturn near rim, short ledge rim with rounded edge (cf. #95), traces of cream slip inside and outside, red-painted abstract designs within the bowl of, from base, a straight line, a thick rounded wavy line, a straight line, a pointed wavy line, and a thick straight line, hard fine fabric with some white grits, brick red, rim 30.2, height 8.9 cm, Rās al-Siyāghah/Mount Nebo (origin uncertain), first half of the eighth c. + (mistakenly dated sixth c. in Schneider 1941).

113. Bowl, out-pointing ring base with grooves, very gentle curving sides to pointed top rim with a slightly concave outer face, red-paint designs within the bowl of, from base, wavy line, two parallel straight lines, broad wavy line, and thick straight line, brick red with brown core, rim 26.1, height 6.5 cm, Rās al-Siyāghah, first half of the eighth c.



114. Bowl, slightly out-pointing ring base, curved sides with inverse carination midway to double-lipped rim, dark red painted wavy lines radiating from center to rim, brown interior and core, brick red exterior, all white slipped, rim 27.5, height 7.1 cm, Rās al-Siyāghah, first half of the eighth c

115. Hand bowl, red painted, tall inward-curved sides thicker than #99–102 with internally thickened chamfered rim, round base, external surface painted with lattice pattern in red (10R 5/6), fabric light red (2.5YR 6/6) with light reddish-brown exterior (2.5YR 7/4), rim 13.0 cm thickness 0.8 cm height 10.0 cm, Tall Jawa (origin uncertain), mid-eighth c. (range mid-eighth to ninth c.).

116. Hand bowl, red painted, shape as #115, painted garlands in weak red (10R 4/4), fabric pink (5YR 7/3) core pinkish gray, slipped exterior in very pale brown (10YR 8/3), rim 14.0 cm thickness 0.6 cm height 9.5 cm, Tall Jawa (origin uncertain), mid-eighth c. (range mid-eighth to ninth c.).

117. Bowl, brown painted, straight vertical sides, rounded base, enlarged “triangular” rim with pronounced external lip, painted double wavy lines on exterior in light brown (7.5YR 6/4), fabric pale yellow (2.5Y 7/3) core pink (7.5YR 7/3), no slip, rim 13.0 cm thickness 0.9 cm height 8.5 cm, Tall Jawa (origin uncertain), mid-eighth c. (range mid-eighth to ninth c.).

118. Bowl, brown painted, inward curving sides with rounded base and double-lipped rim, and a wider opening and lower walls than #115–17, three horizontal wavy lines on outside surface painted in light brown to brown (7.5YR 6/4 – 10YR 5/3), fabric pale yellow (2.5Y 8/3), rim 16.0 cm thickness 0.9 cm height 7.0 cm, Tall Jawa, mid-eighth c. (range mid-eighth to ninth c.).

119. Hand bowl, red painted, tall inward curving sides with internally thickened chamfered rim, round base, painted garlands with horizontal wavy line below in dark red (cf. #102, 116), finely mixed fabric, pink throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

120. Bowl, slightly incurving sides, enlarged and chamfered rim, even white outer slip overpainted with a dark red lattice design with a dot inside each diamond, horizontal red line on outside and inside of rim (cf. #115, but more intricate design), finely mixed fabric, light red throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

121. Bowl, shape as #120, white slip externally and on lip overpainted with segmented square design (cf. #110) and internally on rim lip in dark red paint, finely mixed fabric, pale brownish pink throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

122. Bowl, shape as #120 but thicker walls, near flat base indicated by sharp turn (cf. #123), whitish cream slip on rim top and external sides overpainted in a brownish hue with alternating triangular fields infilled with a notched triangular design around a central circle, splashes on inside of rim, very fine fabric, creamy buff throughout, rim 15.3 cm thickness 0.6 cm, Rujm al Kursī (‘Ammān?), ninth–10th c.

123. Bowl, red painted, slightly out-leaning sides with flat rim, slightly convex base, white slip inside only, external surface features geometric pattern of segmented medallions with opposing arcs and a central circle (cf. #122) continuously linked by intertwining painted bands in dark red paint (“Medallion style”, originally a Persian design later used in wall paintings at eighth c. Khirbat al-Majjar palace) with additional red-painted strokes and wavy lines on rim top and a five-pointed star on inside base (not shown), fine fabric, light pink throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

124. Lid, red painted, button handle, slightly convex sides, carinated lip, white slipped external face overpainted in dark red of a radiate pattern ending at a wavy line, finely mixed fabric, yellowish pink throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

125. Deep cylindrical bowl, red painted, slightly concave walls with incurving rim at carination, white slipped external face overpainted with a geometric pattern in dark red motifs of two intertwined bands framed in two horizontal lines and a repetitive pattern of double triangles with a circle in the center, well mixed fine fabric, light pink throughout, ‘Ammān Citadel (‘Ammān?), ninth–10th c.

126. Bowl, red painted, concave walls with sharply incurving rim at carination, geometric pattern on external surface as #123 with single helix design between horizontal lines above in dusky red (10R 3/4), hard fabric of small grey and white inclusions with occasional larger white grits, external surface pink (5YR 8/4) internal reddish yellow (5YR 7/8) core pinkish gray (7.5YR 7/2), Fihl (origin uncertain), later ninth c. (range ninth–10th c.).

c) South Jordan Cluster

As Gerber (2016: 148–49) remarks, local plain bowl forms with thin walls are “rather difficult to date”, although a tendency to simplicity in shape and greater depth in Early Islamic times is noted, as is seen elsewhere in Jordan. These vessels are not presented here due to the dating ambiguity with pre-Islamic times. However, two local handmade wares of a later date (#19–21, above) have recently been identified, as follows.

127. Bowl, handmade, plain ware, straight walls curving to slightly rounded base, coarse fabric of quartz, mica, and chaff temper, exterior light brown (7.5YR 6/4) interior brown (10YR 5/3), Khirbat al-Dharīḥ (local source), late 10th–12th c.

128. Bowl, handmade, red painted, curving walls to rounded rim, slipped exterior face decorated with bands of double wavy lines below which is a zigzag line with spaced dots all framed by single horizontal lines in monochrome red (5YR 5/6) paint, fine sandy fabric with oxidized



surfaces, exterior light reddish brown (5YR 6/4) interior light gray (10 YR 7/2) core gray (5YR 5/1), Gharandal (local origin unknown), late 10th to 11th c.

d) Interregional

129. Bowl, Cream–Buff ware, curved walls with deep incised line below flattened inward–sloping rim, incised double zigzag lines with clay dots in each triangle (cf. circles in voids of painted bowls #120, 122–125), well mixed soft fabric with fine white, orange, and grey grits with some voids, pale yellow (5Y 7/4), Fiḥl (Ṭabariyah kilns), later eighth to ninth c.

130. Bowl, Cream–Buff ware, curved walls with deep incised line below enlarged and flattened inward–sloping rim, incised random lines (lattice?) with further incised line below, with walls curving to flattened base, fabric as #129, Fiḥl (Ṭabariyah kilns), later eighth to ninth c.

131. Hand bowl, Palestinian Fine Homeware, thin curved walls, plain rounded rim, ring base, wet–smoothed surfaces, well–mixed fabric with fine white and dark grits with occasional larger but small white grits, hard fired, pale brown to pale orange, Fiḥl (Jerusalem area), mid–sixth to seventh c.

132–133. Hand bowl, Palestinian Fine Homeware, thin curved sides to rounded rim, single incised line below rim externally with paring below to heavier base, usually with a ring foot (Magness 1993: 193–94), fabric as #131, Fiḥl (#132) and Jarash (#133), (Jerusalem area), mid–sixth to late seventh to early eighth c.

134. Hand bowl, Palestinian Fine Homeware, exceptionally thin and high wall in–curving to plain rounded rim, heavier base, extensive paring with burnishing marks on external walls and to base, grooved spiral under base, well–mixed fabric with very small white limestone and chert grits, hard fired, light brown (7.5YR 6/4), burnishing reddish yellow (5YR 6/6) core pink (7.5YR 7/4), Fiḥl (Jerusalem area), late eighth and ninth c.

135. Bowl, Glazed ware, carinated wall, rounded rim, low ring base, cream–slipped inside under bubbly (degraded) yellow and green glaze separated into zones by brown glaze with drooping yellow glaze extending unevenly over rim, gritty core fabric with many fine to medium dark grey and some quartz, red, and white grits, reddish orange (5YR 6/6), Fiḥl (Yellow Glaze Family), early to mid–ninth c.

136. Bowl, Glazed ware, carinated wall, rounded rim, thin and patchy white slip under colored–glaze decoration in thick glassy green, turquoise, and yellow glaze, fabric pink (5YR 8/4) exterior surface pink (7.5YR 8/4), Fiḥl (Yellow Glaze Family), late eighth to mid–ninth c.

137. Bowl, Glazed ware, cream surfaces with light green, yellow, and white glaze, and brown paint on interior, exterior pared horizontally, fabric moderately gritty with medium–sized sand grits, orange, Aylah (Egypt?), later eighth to early ninth c. (Whitcomb 1989a: 171 Group 1; 1990–1991: 49 “Coptic Glazed ware”).

138. Bowl, Glazed ware, cream slip under yellow, dark green, and light green glaze on interior and rim, fabric moderately gritty with medium–sized sand grits, light orange pink, Aylah (Egypt? “Coptic Glazed ware”), later eighth to early ninth c.

139. Bowl, Glazed ware, cream slip, yellowish clear, green glaze and brown paint on interior and rim, fabric moderately gritty with medium–sized sand and mica grits, reddish orange, Aylah (al–Hijāz), early ninth c. (Whitcomb 1989a: 171 Group 4; 1990–1991: 49 “Hijazi”).

140. Bowl, Glazed ware, greenish clear, green glaze and brown paint on interior and rim, fabric moderately gritty with medium–sized sand and mica grits, orange, Aylah (al–Hijāz), early ninth c.

141. Bowl, Glazed ware, white slip under yellow glaze and brown paint on interior and rim, yellow glaze on exterior, fabric moderately gritty with medium–sized sand grits, tan–brown, Aylah (al–Hijāz), early ninth c.

Sources: A.–J. ‘Amr 1986, 1990; Blanke 2018; Daviau 2010b; Edwards et al. 1990; Gawlikowski 1986, 1995; Khalil and Kareem 2002; Makowski 2020a, 2020b; McNicoll et al. 1986; Olávarri–Goicoechea 1985; Pappalardo 2019; Schaefer and Falkner 1986; Schneider 1941; Uscatescu 1996; Uscatescu and Marot 2016; Walmsley 1982, 1995; Walmsley et al. 1993; P.M. Watson 1989, 1992b; Whitcomb 1989a, 1990–1991.

The Crusader Period

Micaela Sinibaldi
(micaela.sinibaldi@gmail.com)

The Crusader Period in Jordan has a chronology of 1100–1189, the dates of the first explorations of the Franks beyond the Jordan River and of the fall of Shawbak Castle to the Muslims.¹ This relatively short period of time, therefore, overlaps with the political chronologies of the Fatimid and Ayyubid periods. It is rarely possible to date the use of a specific ceramic type in the region to the 12th century only, let alone to an even more restricted time period. In the case of Crusader Period Jordan, isolating such a restricted chronology is further complicated by the fact that the already very limited use of better dated, normally imported pottery in the region occurred mostly at the sites of the main Crusader castles, while at other sites, its presence was even more limited or absent. The pottery class characterizing the 12th century, and indeed most assemblages of the Islamic Period in Jordan, is handmade pottery, which is overwhelmingly dominant, was mainly locally produced and is still very little studied in its chronological development.

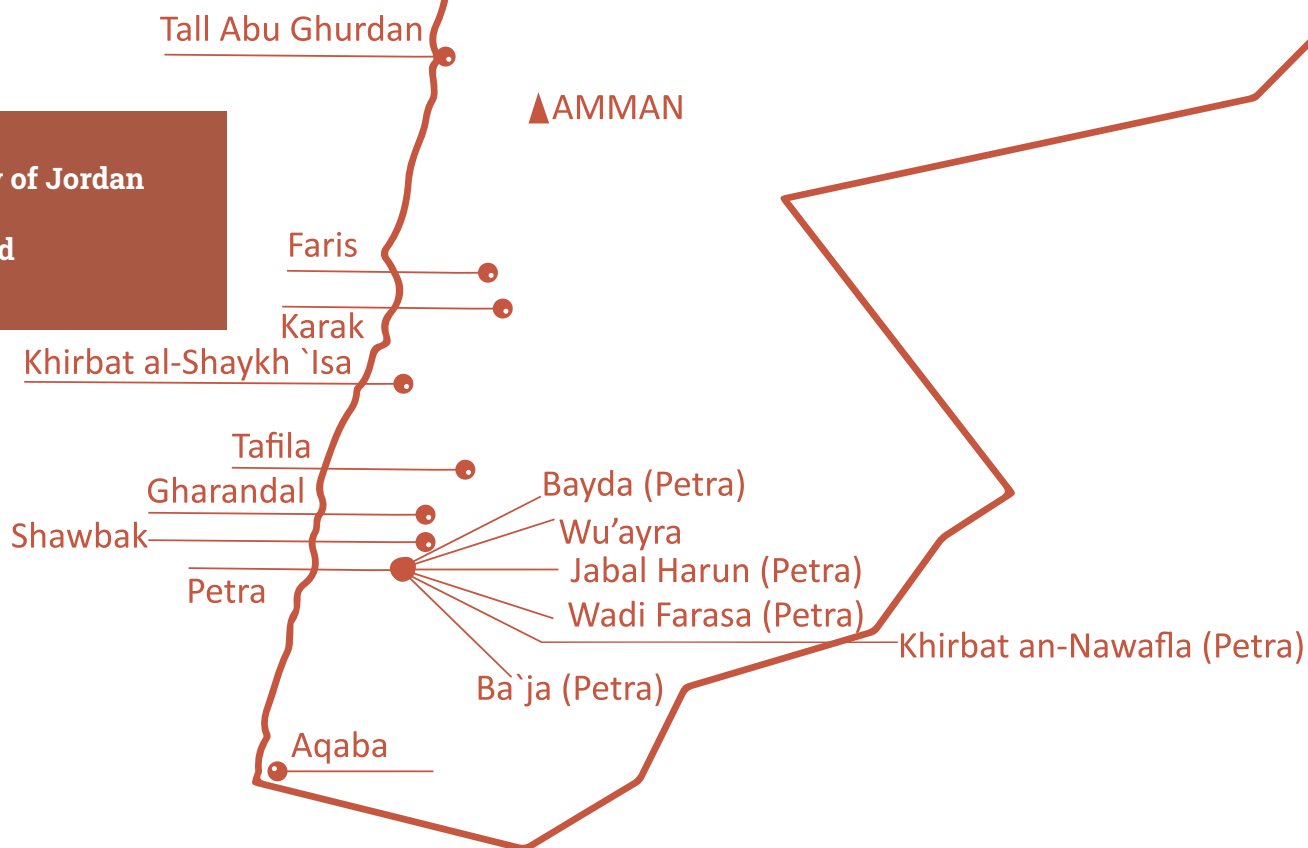
The chances of safely distinguishing finds of the Crusader Period from others, therefore, rely almost entirely on archaeological excavations of Crusader-period stratigraphy at sites that are well dated on the basis of the written sources and on using those observations to identify other sites. A detailed study of the characteristics of Crusader Period pottery in Jordan is currently based almost exclusively on the assemblage from al-Wu'ayra (Petra), currently the only group of sufficient size allowing systematic observations and, at the same time, from a stratigraphically clear excavation

context safely dated to the Crusader Period. The assemblage is dated to 1127/40–1188, the dates of existence of the Crusader castle.² Well-dated assemblages for the period before 1127/40 are currently not available for study.

Observations made on this assemblage have a solid basis for isolating pottery of the Crusader Period in the Petra region, in particular the handmade pottery group, which is by far the most dominant one in the area through the whole Islamic Period. Such observations on handmade pottery can also be reasonably applied to a broader area than the Petra region, including Shawbak Castle, but not completely for the whole area of southern Jordan, because of the intense regional characteristics of handmade pottery; a study of handmade pottery by this author has clarified that ceramics from the site of Gharandal, in the Tafila region, already display both similar and different characteristics, while handmade ceramics from Aqaba show radical differences.

Other assemblages in Jordan currently offer much less information, given the paucity of excavations and published data from well-dated structures. The most significant gaps in our knowledge are from the materials from Karak and Shawbak castles, the two most important sites of Crusader Period Jordan, and where, furthermore, occupation is well dated by the written sources. While the limited excavations in the castle church at Karak appear to have produced no pottery of the Crusader Period a detailed, complete publication of ceramics separating occupational phases from excavations at Shawbak Castle is still not available.

JORDAN MAP
Sites in Pottery of Jordan
Manual
Crusader Period
AD 1096-1271



The only assemblage currently completely studied and published from Crusader Period Jordan, on which it is possible to base any observations, is so far the one from excavations at al-Wu'ayra by Robin Brown.

At its widest extent around 1160, the Crusader Lordship of Transjordan included the area between the Wadi Zarqa and Aqaba (with Aqaba being controlled for only about 10 years after this moment),³ while the Sawad, which was part of Galilee around this time, extended between the Wadi Zarqa and Dera'a in Syria. The geographical extent of the Frankish possessions in the area of modern Jordan, however, changed constantly through the 12th century; therefore, not all 12th-century pottery should be automatically attributed to the Crusader Period, if this is meant to cover the areas under Frankish control at this time.

The Frankish presence in Jordan was short-lived and, apart from the site of al-Wu'ayra, and, most likely and to a greater extent, the important sites of Karak and Shawbak, whose archaeological potential is still almost completely unexplored for the Crusader Period, it appears to have had a relatively limited impact on the introduction of new ceramic types in the region, where the dominant ceramic group continued to be handmade pottery.

THE AL-WU'AYRA ASSEMBLAGE

The characteristics of the ceramic assemblage from al-Wu'ayra in Petra, described here, are based on a direct and detailed recent study by this author of some fragments selected as diagnostic and published by Robin Brown from her own excavations in 1987;⁴ they are also based, to a lesser extent, on a selection of published

fragments from excavations by the University of Florence, originating from a much larger assemblage excavated as part of a project started in 1986 and currently mostly unpublished.⁵ Given that the study of handmade ceramics in the region is currently in progress, such observations are necessarily bound to be expanded by future studies.

HANDMADE POTTERY

This group is described through specific chronologically diagnostic elements recently identified in a broader study of handmade pottery, carried on by this author, for the entire Islamic Period in Petra, which has resulted in creating a basic chronology for the Petra area.⁶ Such elements are considered diagnostic when present simultaneously in an assemblage.

Fabric: A dominant use of fabric A1 (characterized by chaff in medium or



high quantity, minerals and limestone inclusions); a limited use of additional hand-made fabrics is likely.

Surface treatment: Smoothing is standard. The occurrence of a thick slip is rare. Wet smoothing is occasional. Specifically characterizing the 12th century and rarely occurring is burnishing on painted and unpainted surfaces of higher-quality manufactured objects.

Painting: The majority of pottery is unpainted. Occasionally, the quality of painting is high. Paint colors are red, brown or red/brown and, rarely, red and brown together. Specifically characterizing the 12th century: orange paint and painting in a “free style,” defined here as including decorations in non-rectilinear patterns, such as curvy lines and dots. The longevity of decoration patterns, however, should also be carefully considered.

Amman;¹³ Tall Abu Ghurdan;¹⁴ Faris;¹⁵ Khirbat al-Shayk Isa;¹⁶ Gharandal;¹⁷ Aqaba.¹⁸

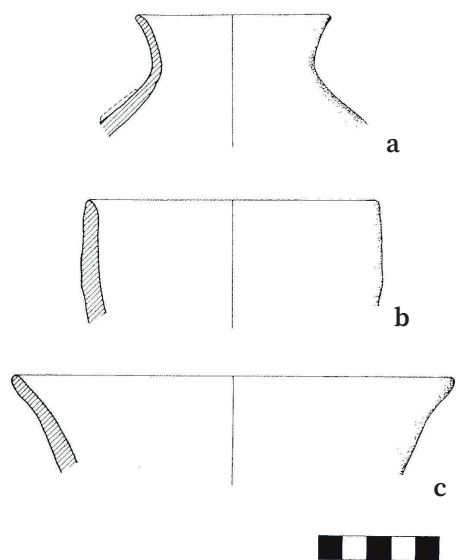


Figure 1 – (Figs. 1–3: a selection of handmade and wheel-thrown pottery from SU 23 [Crusader Period] from al-Wu`ayra [reproduced with kind permission from Tonghini and Vanni Desideri, 2001])

Manufacture: Manufacturing quality varies greatly; the presence of higher manufacturing quality is often associated with small objects and cooking pots, indicating the presence of different productions. Manufacturing techniques include mainly coiling and the use of a turning tool and, occasionally, hand forming.

Form: a slight dominance of closed forms over open forms and of small forms over large forms. Forms include cooking pots⁷, lids, bowls, cups, basins, spouted juglets, jars (Figs. 1–3).

Firing: Black to light gray cores, indicating poor firing conditions.

WHEEL-THROWN UNGLAZED POTTERY

This class played a minimal role in the assemblage.⁸

WHEEL-THROWN GLAZED POTTERY:

This class included slipped and green-glazed pottery⁹, glazed cooking pots, turquoise glazed ware, fritware from Syria/Egypt.¹⁰

OTHER SITES IN JORDAN

At Karak Castle,¹¹ the main Frankish site of the Lordship of Transjordan, ceramics covering the 12th century are unstratified.

Other excavated sites in areas where the Franks had control at times during the period 1100–1189 and where pottery covering a chronology of the 12th century has been identified include the following: Wadi Farasa, Khirbat an-Nawafra, Bayda and Ba’ja in Petra and the Petra region.¹² In addition,

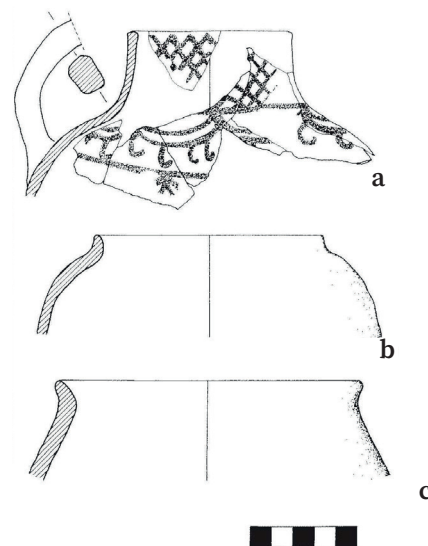


Figure 2

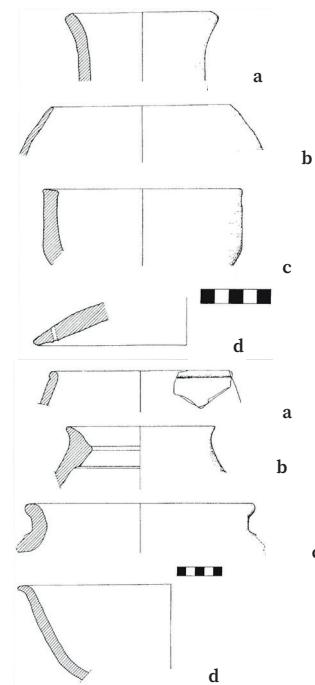


Figure 3

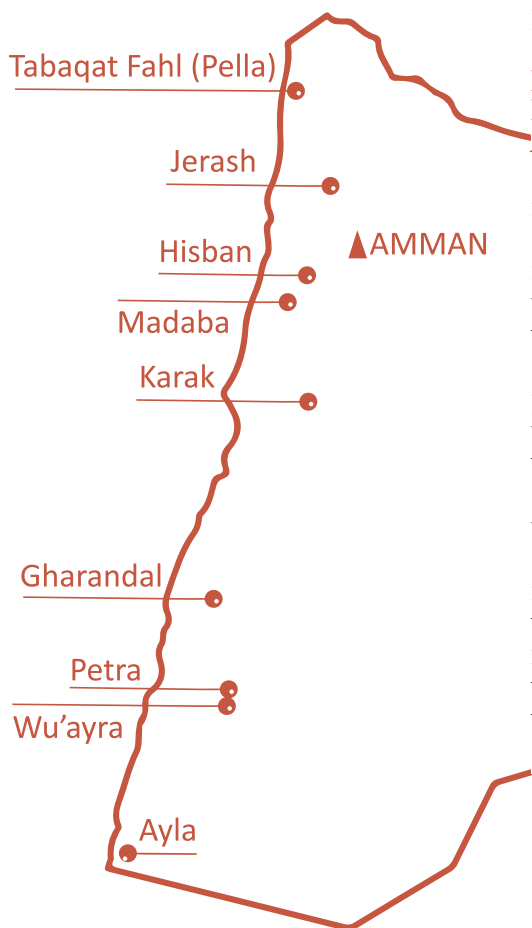


1. Such study is extracted from Sinibaldi 2014, currently in press.
2. For a chronology of the castle and of other Crusader Period sites in Jordan, see Pringle 1998: 373–377; Pringle 2001; Sinibaldi 2016.
3. For an updated chronology of the Crusader Period in Aqaba, see Pringle 2005.
4. Brown 1987.
5. Vannini and Vanni Desideri 1995; Vannini and Tonghini 1997; Tonghini and Vanni Desideri 2001.
6. For a definition and description of such diagnostic aspects of handmade pottery, see Sinibaldi 2013.
7. Brown 1987; Vannini and Tonghini 1997: 380, fig. 16; Sinibaldi 2009: 97, n. 38.
8. Sinibaldi 2013: 174; Tonghini and Vanni Desideri 2001: 711.
9. Tonghini and Vanni Desideri 2001:711; Brown 1987:284.
10. Vannini and Tonghini 1997: 382; Tonghini and Vanni Desideri 2001: 710.
11. Milwright 2008: 177–181, 188, 190–192, 195–196, 216, 373 (fig. 26.14), 221, 237, 239.
12. Sinibaldi 2009; Sinibaldi 2014; Sinibaldi 2016.
13. Northedge 1984, fig. 77.1 (cfr. Avissar and Stern 2005: fig. 39.4–6, type II.2.1.3).
14. Walmsley 2001, 550 and personal communication with Alan Walmsley.
15. Johns et al. 1989: 88–89 figs. 24,18–24. The final publication of ceramic materials is now in preparation.
16. Politis, in press.
17. Walmsley and Grey 2001: 147–148.
18. Al-Shqour 2019.

The Middle Islamic Period (Fatimid, Ayyubid, and Mamluk)

Bethany J. Walker
(bwalker@uni-bonn.de)

JORDAN MAP
Sites in Pottery of Jordan
Manual
Middle Islamic Period
AD 900-1517



The “middle” periods cover nearly seven centuries in the development of Islamic pottery in Jordan, from the 10th to the early sixteenth centuries AD. What is most distinctive about this corpus is its regionalism and diversity: decentralization of ceramic production, the expansion of international trade, and the growth of rural markets and regional exchange networks favored local ceramic production and made more ceramic imports available in local markets. New handmade wares developed, as well, side-by-side with a wide range of plain and glazed wheel-made wares, some produced locally, others imported. This represents a real shift from the centralized production of predominantly wheel-made wares during the Early Islamic Period, when the kilns of Jarash supplied much of the Madaba Plains.

FATIMID POTTERY (“MIDDLE ISLAMIC I”: ROUGHLY LATE 10TH AND 11TH CENTURIES AD)

Short as the period was politically in Jordan, the material culture of the era of Fatimid control can be divided into two distinctly different phases: the Early Fatimid era (10th c.), during which time the pottery does not essentially change from the Abbasid period (at least in central Jordan); and the Late Fatimid era (11th c.-12th c.), when the ceramic assemblage reflects shifts in trade towards Egypt. One of the biggest problems in studying the Fatimid period through the ceramic record has been the strong continuity in wares, fabrics, forms, and assemblages from the Abbasid period: ribbed jugs with beveled rims and string-cut bases, wheel-made bowls and cups in a pale

red or orange fabric, and “Samarra” splashed ware. Moreover, there are few stratified contexts of recognizable Fatimid pottery; for central Jordan, an abandonment deposit at Amman Citadel provides us with our best context. The best Fatimid assemblage in Jordan comes from Aqaba; however, only some of the imports found at Aqaba made their way to more northern regions of Jordan.

Main characteristics of Early Fatimid pottery: The pottery of this period continues to be mainly wheel-made, with well-levigated and fine clay (few visible inclusions) and a high-fired fabric. As in the Abbasid period, the tablewares tend to be thin-walled, the clay firing to an orange-buff or yellow-orange.

Main characteristics of Late Fatimid pottery: After many centuries of predominantly wheel-made production, handmade wares now appear. These include a range of forms: basins, store jars, bowls, and cups. Many of these continue to be used during the Crusader era. New forms of wheel-made cookpots and casseroles appear, in Brittle Ware fabric (described below). The corpus also includes a diversity of glazed wares, which are mainly Egyptian imports. The greatest diversity of both handmade and wheel-made pottery is to be found south of the Madaba Plains: on the Karak Plateau, in the Petra valley, and, of course, at Aqaba.

HANDMADE WARES

I. Early Handmade Painted Ware – Fig. 2.6–9

First identified by Robin Brown at al-Wu`ayra and dated to the 12th century (Brown 1987), a possible prototype has been identified at





Gharandal and dated to the 11th century (and possibly earlier). The majority of the vessels are simple bowls, often of small dimensions, and are decorated in linear patterns painted in a faint red slip. Reed mat impressions can often be seen on the base (Walmsley and Grey 2001: 158), bearing witness to techniques of manufacture. This ware may be the predecessor to the HMGP Ware that so heavily dominated the ceramic assemblages of central Jordan in the Mamluk period (described below). Handmade painted pottery has a very long life from this point, and continues to be produced, in a different range of forms, into the British Mandate period.

II. Misc. coarsewares – Fig. 1.5 and Fig. 2.10–13.

Plain handmade wares make their appearance in the repertoire of Islamic pottery in Jordan in the Fatimid period. The earliest and most diverse assemblages are found in southern Jordan (Karak and Petra regions) and include medium-sized jars, globular cooking pots with flaring neck and a pulled-up strap or basket handle, which seems to be a precursor of the more familiar Mamluk-era “elephant-eared” handle (Walmsley and Grey 2001; Makowski 2020). These are local products, and their clays include sand and are chaff-tempered. Among the larger forms found in central Jordan are large thumb-impressed, flat-based basins with thickened rims; pleated-impressed pithoi; and storage jars with loop handles, all made of a light-brown to reddish-yellow clay. Occasionally the surface is decorated with combed designs and thumb impressions.

WHEEL-MADE WARES

1. Plain Wheel-made

This is essentially a continuation of an

Abbasid ware, with a siliceous, highly-fired, and fine clay (pinkish-gray, pale red, light brown, or white in color). Used primarily for tablewares, the forms range from bowls to medium-sized jars and jugs. The bowls are hemispherical in profile. The jars and jugs have various rim forms and either a flat or disk-shaped base. Made of the same fabric are also hemispherical ribbed bowls and ribbed necked jars.

2. Islamic Cream Ware – Fig. 3

This is a broad category of oxidized pottery with a wide distribution in the Middle Islamic period. A light brown clay that fired, under oxidizing conditions, a creamy white on the surface, the ware includes a range of bowl and jug/juglet forms. The surface is often accentuated with incised combing. The material at Aqaba may have been produced locally (Damgaard 2013: 91). A version of the same ware at the Amman Citadel, Pella, and other sites in Jordan and Palestine includes jars with flaring necks and turban handles (Walmsley 2001: 545).

3. Misc. Red Wares – Fig. 1.4 and 1.6

This category, based on the assemblage at Amman Citadel, includes jars and bowls in red, reddish-yellow, and light brown, earthenware fabric. The surface can either be plain or painted in white wavy lines. Jars include single-handled forms with an omphalos base. The assemblage also includes zirs (bag-shaped jars) of light-brown fabric with combed surface decoration.

4. Glazed wares – Figs. 1.3, 3.2, and 3.4

Monochrome-glazed – Hemispherical or conical bowls appear in the 10th century, made of an earthenware fabric, but covered in a blue (aquamarine) glaze over a white slip. These are likely imports from Iraq or farther afield from the Red Sea maritime network of trade.

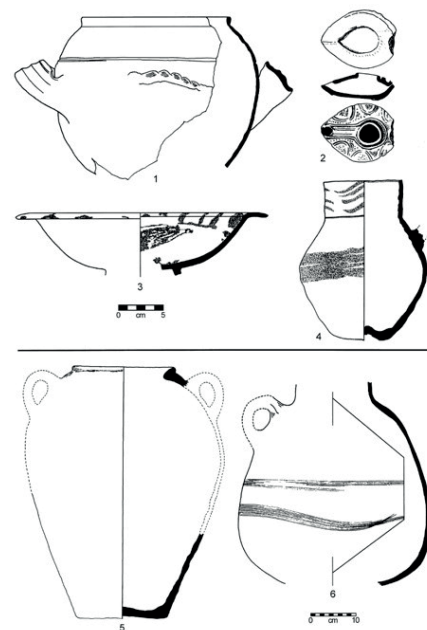


Figure 1 – Fatimid pottery from the Amman Citadel (Walmsley 2011: 546, Fig. 15.14)

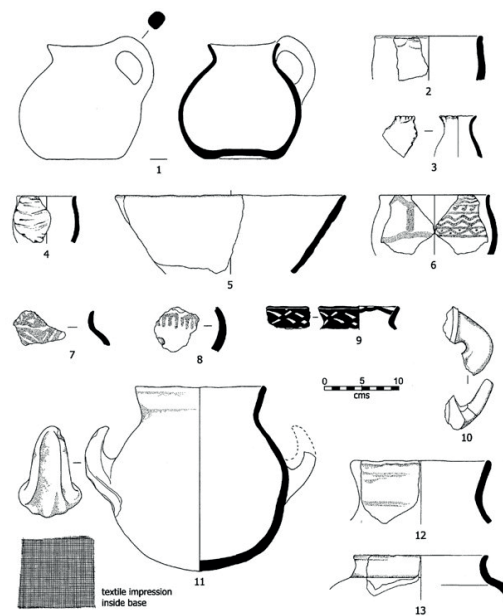


Figure 2 – Fatimid and later pottery from Gharandal (Walmsley and Grey 2001: 156, Fig. 10)



5. Splash glazes – Fig. 1.3; Fig. 3.2, Fig. 3.4

Two kinds of multicolored splashed-glaze wares have been documented in central Jordan. The form is the same: a thin-walled bowl on low ring foot and out-turned rim. The so-called “Samarra Splashed Ware” in an Iraqi import of the ninth and 10th centuries: It is decorated with stripes of yellow, blue, and green stain under a transparent glaze, which radiate towards the rim from the bowl interior. It has been found in large quantities in the Hisban Citadel and has been largely associated with 10th-century abandonment layers there. An Egyptian variant is imported to Aqaba in the 11th century, and finds its way in small numbers to central Jordan. This ware, of an orange-red fabric, has the same form, but more varied designs in white,

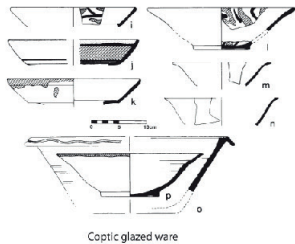
green, yellow, black, and turquoise lines, dots, hatches, and abstract florals (Fig. 1.3 – Amman Citadel; Fig. 3.4 – Aqaba port).

Hijazi Ware and Sgraffito – Fig. 3.2 One of the earliest sgraffito wares to appear in Jordan is this Egyptian import. Its distinctive pale brown fabric is decorated with green-stained abstract florals and zig-zag lines painted on the unslipped body and under a transparent glaze. The design is sometimes accentuated with sgraffito lines, lightly scratched through the clay. The forms include bowls (with carinated, hemispherical, biconical, or flaring sides), plates, deep cups, and jars. This ware has been identified at Tall Hisban. Other Egyptian glazed wares found at Aqaba (such as Coptic Glazed and Fayyumi Ware) have not yet been found, to this author’s knowledge,

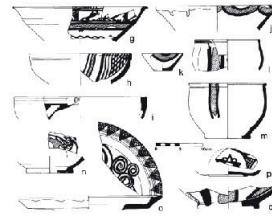
in central Jordan.

6. Brittle Ware (“Red Ware”) cookpots – Fig. 1.1; Pl. 1

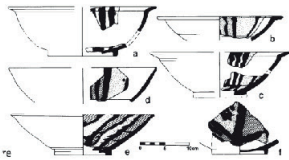
The most common form of cooking ware in Greater Syria, from the Late Antique through Mamluk periods, is the wheelmade Brittle Ware cookpot (Volkaer 2010). The clay is a dark red color, with calcite inclusions, to distribute heat during cooking and prevent cracking and spalling. In the Fatimid period new forms of cooking vessels appear in this fabric. Both the cooking jar with upturned strap handles and piecrust ledge handles and the flat-based casserole develop out of Early Islamic forms, with some changes. The cooking jar now has broad strap handles, which face upward, instead of ledge handles. Occasionally both the cooking jar and casserole are glazed.



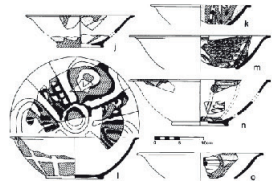
Coptic glazed ware



Hijazi/Sgraffito ware



Fayyumi ware



Splash-glazed ware

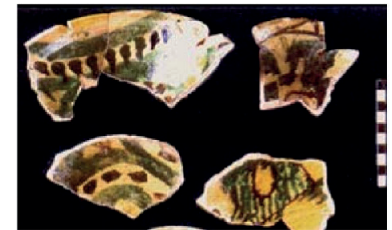
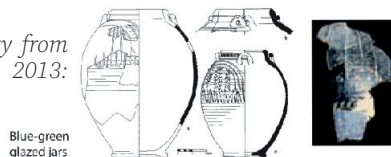


Figure 3 – Fatimid pottery from Ayla–Aqaba (Damgaard 2013: 90, Fig. 3)



Blue-green glazed jars

Examples of Chinese celadon imports





MOLD-MADE WARES

1. Channel nozzle lamp – Fig. 2.2

The Abbasid lamp of this form, usually associated with a scroll design of grapes, grape leaves, and vines, is the forerunner of the Fatimid type, decorated with dots and wavy lines and in a reddish brown or pink fabric. The vine scroll pattern, however, also continues into the Fatimid period at some sites in central Jordan, such as the Amman Citadel (Fig. 1.2).

AYYUBID POTTERY (“MIDDLE ISLAMIC IIA”: MOSTLY 13TH CENTURY AD)

Traditionally, the pottery of the four centuries between the Fatimid and Ottoman periods (the “Middle Islamic II” era, in Whitcomb’s periodization) have been lumped together as “Ayyubid–Mamluk.” Many of the wares that appear in the Fatimid period – handmade painted wares, globular cook pots with pulled-up handles, Islamic Cream Ware, Brittle Ware – continue to develop in these later centuries, while many new glazed wares appear. This is the result of both local production and more imports (from Egypt, Syria, and China).

The Ayyubid period was quite short (only eight decades), making tracing the development of pottery during this period difficult. Fortunately, in recent years it has become possible to distinguish, in a small way, Ayyubid from Mamluk pottery, thanks to new excavations at Middle Islamic sites and the recovery of more glazed wares.

HANDMADE WARES

1. Handmade Geometrically Painted (HMGP) – no figures (see “Mamluk,” below)

One of the most readily recognizable wares of southern Syria, and the main tableware in the Ayyubid and Mamluk periods is Handmade Geometrically Painted Ware, usually known by its acronym “HMGP.” Formed by hand over a cloth bag (filled with sand or earth), and finished on a slow kick wheel, the slip-painted decoration comes in shades of red–brown and black, often over a white slip. The decorative patterns are geometric, building on checkerboard designs. The forms are mostly bowls (hemispherical, conical, or carinated, generally on a low ring foot) and jars and jugs (with high, everted necks). In central Jordan, the fabric includes grog. At Tall Hisban, HMGP pottery with red and purple paint seems to date to the Ayyubid period.

Wheel-made wares – Fig. 5.1–9, 13–19

1. Plain monochrome-glazed – Fig. 5.1–9

A wide range of monochrome-glazed tablewares become used on a daily basis in this period. The forms include mostly hemispherical and carinated bowls on a low ring foot, and the fabric tends to be a light-colored (light red) earthenware, with small calcite inclusions. Yellow, green, or purple lead glaze (Fig. 5.1–8) cover the interiors and usually also the exteriors of the bowls, down to the foot, and are applied over a white slip.¹ Less frequent are bowls covered in a turquoise blue alkaline glaze (Fig. 5.9). These bowls are mass-produced and often bear the scars of firing tripods in the bowl interiors.

2. Sgraffitos and slip-painted – Fig. 5.16, 5.18; Pl. 2 (far right)

These two contemporary wares

are part of the same technique of production and overlap in surface design. They were mass-produced, as the tripod scars in the bowl interiors demonstrate. Slip painting is a painted design in slip (a watery, white clay), and covered under a transparent, yellow, or green glaze. The patterns tend to be flowing, abstract florals and geometric designs. Sgraffito is the incision of a design through a white slip (covering the vessel surface) into the reddish clay underneath. The incised design is often combined with green and brown-colored stains, and the vessel surface is covered by a transparent or green or yellow lead glaze. The most common form in this period is the hemispherical or carinated bowl on a high ring foot and a deep conical bowl on a low ring foot (Pl. 2). Often, the glaze colors of the vessel interior and exterior are different, as in Fig. 5.19.

3. Misc. other glazed imports – Fig. 5.13–15, 8.1

Underglazed-painted wares

A whitish and highly friable stonepaste (“frit”) ware began to be produced in kilns throughout Syria in the 12th century. Production increased markedly the following century, with distribution of these wares throughout Jordan. Usually associated with the city of Raqqa (and often called, for this reason, “Raqqa Wares”), the fabric is full of quartz inclusions and is made with a sand–white clay paste, in an effort to imitate Chinese porcelain. The abstract floral, geometric, and checkerboard designs are painted in black and sometimes black and blue under a clear blue-tinted or greenish alkaline glaze. Occasionally the design includes Arabic inscriptions in naskī script. The vessels, apparently produced in

¹ The use of a purple glaze seems to be limited to the Ayyubid period and may be of Egyptian production.



large quantities, are primarily shallow bowls on a low ring foot (Fig. 8.1); deep hemispherical bowls on a higher ring foot; a deep conical bowl on a low ring foot; and ovoid, handleless jars.

Mold-made wares – Fig. 5.20

1. Lamps

Apparently a development from the channel–nozzle lamp of the Early Islamic Period, a slipper–shaped lamp begins to be produced; it becomes the most common lamp form of the Ayyubid and Mamluk periods. This lamp form has a distinctive handle: a foot–shaped tab that turns up at the end of the lamp opposite from the wick. Unlike the Early Islamic vine scroll pattern, the Ayyubid design is more abstract, with parallel lines, Arabic script (in thulūth script)², and star and hexagon–shaped patterns. The fabric is a kind of Islamic Cream Ware.

MAMLUK POTTERY (“MIDDLE ISLAMIC IIB”: LATE 13TH – EARLY SIXTH CENTURY AD)

The Mamluk period is one of the richest and most diverse ceramically of all periods of Jordanian history. The activities of local kilns, a lively rural market infrastructure, and extensive ceramic importation from other regions of Syria and Egypt and farther afield drove this increased production and consumption of, in particular, glazed tablewares. Many wares – HMGP, sgraffito, slipper lamps, slip–painted – continue from the Ayyubid period, with some changes in vessel form and surface design. The wares most frequently encountered on the Madaba Plains are described below.

HANDMADE WARES

1. Simple handmade – Pl. 3

While plain, handmade tablewares have been identified in southern Jordan in the Fatimid and Crusader periods, they seem not to be produced in central and northern Jordan until the Mamluk period. Characteristic of this period are cups; bowls; and small and medium–sized, handleless jars. Some, as the vessel illustrated here, were fired in an open–air kiln, which produces “blushes” on the vessel surface, as a result of uneven firing and oxidation. Some vessels carry a white slip on the exterior. The fabric is a light red clay with the use of grog, quartz, and small red minerals as inclusions.

2. Handmade Geometrically–Painted (HMGP)–Figs. 6.11, 7.1, 7.2, 9 (all), 10 (all), and 11.1–6

HMGP is the “fossil type” of the Mamluk period in most regions of Jordan (excluding the South). The mode of production significantly expands in the 14th century, when it reaches its apex of quantity and quality of production. While hand–forming over a sand–filled cloth bag continues to be the primary technology of production, a more professionalized system also appears, with the use of a slow kick wheel and standardization of more complex forms. Mamluk–era HMGP come in a wide range of forms, some never seen before. In addition to carinated bowls, there are bulbous, one–handled jars with a convex neck (the most common form of the period); spouted jugs; jars with filters in their necks; storage jars; and more “exotic” forms, such as boxes, and incense burners³. The clay used in vessels produced locally on the Madaba Plains is a pale brown with grog inclusions and, to a lesser degree, chaff. The impression of a woven cloth fabric is

often visible on the vessel interior, and chaff scars on the exterior. To cover the coarseness of the fabric and provide an even painting surface, vessels are usually covered in a white slip. On the slip are painted geometric designs in blacks and browns. Because of its longevity of production, and because the forms and decorative pattern change little over many centuries, the ware is difficult to date. Fortunately, we have excellent stratigraphic contexts for it at Tall Hisban. The ware as illustrated here represents the 14th century.

3. Cookpots – Fig. 7.11, Fig. 12, and Fig. 13; Pls. 4 and 5 (far right)

A new handmade cookpot form appears in the Mamluk period. They are globular pots (“stewpots”), with a high everted rim and two handles of varied pulled–up forms. The classic 14th–century cookpot has an “elephant–ear” handle form, is very thick walled, heavy to lift, and its exterior often covered in a thick, burnished red slip. The sandy beige or reddish–brown fabric is quite coarse, with medium–sized quartz and grog inclusions. Although handmade, they are frequently finished on a slow wheel (“kick–wheel”), or hand–smoothed.

WHEEL–MADE WARES

1. Plain wheel–made (industrial, jars and jugs, sugar molasses cones) – Fig. 7.10

Plain (unpainted, unglazed) wheel–made wares contributed less to the tableware assemblages at sites in Jordan – where glazed and HMGP bowls and jars were more common – than elsewhere in Syria. This ware, instead, was used for a limited number and range of jars and jugs and industrial vessels (drain pipes, sugar molasses

² Thulūth script was the main form of Arabic writing used in the Ayyubid and Mamluk periods for public texts. It was found on public buildings and objects made for the ruling elite. The letters are high and large (a “monumental” script) and are meant to be visible from a distance.

³ Some of the best examples of these rarer forms can be seen at the Madaba District Museum, from the Hisban excavations of the 1970s.



cones). The industrial wares tend to be poorly levigated and a bit gritty, with lime grit inclusions, and of a beige to light pink hue. The jars and jugs found in central Jordan are generally of the Islamic Cream Ware fabric, described below.

2. Islamic Cream Ware – Fig. 7.6–9; Pl. 5 (far left) and 6

The Islamic Cream Ware fabric of the Mamluk period differs from Early Islamic and Fatimid types, in its characteristic greenish hue: the buff or pinkish fabric fires a very pale green on the surface. Forms include jugs on a low ring foot with a swollen neck and a long spout and with or without a stamp (used decoratively); jugs with a narrow, straight neck; canteens (which are finished with a mold-impressed design; and, the most common form, pinpricked jars (Fig. 7.6–9; Pl. 5– far left; Pl. 6). The latter-two-handled jars of carinated profile, with sloping shoulders, a high conical neck, and omphalos base—are likely Syrian imports. They frequently have filters in their necks. The surface decoration, which covers most of the vessel, include registers of pseudo-calligraphy and abstract florals on a dotted background, and gouged parallel lines, all producing with a punch and knife.

3. Wheel-turned cooking vessels – Fig. 8.10; Pl. 7

There is variety in the kinds of cooking vessels used in the Mamluk period. While the handmade, globular cookpots described above dominate the assemblages of cooking wares, wheel-made cookpots and cooking bowls (plain or with glazed interiors) can be found in central Jordan. Developing a form known from the Early Islamic Period, the Mamluk-era cookpots are

deep, with a wide mouth and ledge or simple thickened rim, a rounded base, and variants of a pulled-up strap handle can be found. The fabric is a coarse red-brown clay with quartz inclusions. In addition, small, hemispherical or carinated cooking bowls of the same fabric are occasionally found (Fig. 8.10). The interiors of the smallest are covered in a yellow lead glaze (Pl. 8). They are shallow, fit in the palm of one's hand, and have a rounded bottom and wet-smoothed (ash-burned) exterior. Placed in ashes for cooking or warming, they may have been used to reheat food, rather than cook it.

4. Plain monochrome-glazed and bichrome glazed (problem of green-glazed, mottled yellow glaze) – Figs. 6.6–7, 7.14–21, 8.2, 8.9

Lead-glazed bowls on a ring or pedestal foot held an important place among the tablewares of even rural communities in Mamluk Jordan. Mass-produced in a multitude of workshops across southern Syria, they all tend to have a moderately fine orange, silica-rich clay, with a white-slip covering under the glaze. The forms include hemispherical carinated, and conical bowls, with a simple or strongly in-turned rim. Glazing is in yellow or green, with the occasional bowl interior glazed in one color and the exterior in the other. Noteworthy is the mottled yellow glaze of many bowls of this period, an effect deliberately produced through unequally mixed lead concentrations in the glaze. This often results in specks of dark brown in the glaze, produced a “measles” effect.

5. Sgraffitos (Figs. 6.5, 6.9, 8.6–8, 11.4) and slip-painted (Fig. 8.5–6; Fig. 11.7; Pl. 2 – far left; Pl. 8)

A wider range of sgraffito wares

and a larger quantity of slip-painted ones distinguish the Mamluk from the Ayyubid periods. Made in local kilns and workshops throughout Syria, sgraffito is among the most common techniques, beyond glazing itself, for bowls in the period. The decorative scheme tends to be linear and includes very abstract florals. The vessel form includes primarily hemispherical, carinated, and conical bowls on a ring foot and with a vertical or thickened, deeply in-turned rim. This rim form is an innovation of the period. Slip-painted design tends to be restricted to shallow bowls with a flanged rim or deep bowls with an overhanging rim. They are mostly glazed in yellow. The designs are a simple combination of broad paint strokes.

Cypriot sgraffitos – Figs. 5.17 and 6.8

In the late 13th and early 14th centuries, Cypriot potters produced sgraffito bowls (usually carinated) with a distinctive ring foot form: the edges of the ring foot turn up on the outer edge, possibly to facilitate removal from a stacked kiln.

6. Misc. other glazed imports

Underglazed-painted wares – Fig. 6.13, 8.3–4; Pl. 9

While mass-produced in both Egypt and Syria in the Mamluk period, the “fritwares” that appear in the Madaba Plains are largely Syrian (and likely Damascene) imports. What differentiates the Mamluk version of this ware from the Ayyubid one is the range of forms (now with angular-profiled albarrellos;⁴ handleless ovoid jars with tall, flaring necks; bowls on higher pedestal bases; and plates with flanged rims and scalloped edges, which are imitations of Ming porcelains), Chinese-inspired designs (clouds, lotuses), and color



combination (clear glazes, preference for blue and white painted patterns).

Celadons and pseudo-celadons – Fig. 5.10–12, 6.10

True celadons are imports from China, brought to Jordan through the port at Aqaba in the 13th and 14th centuries. They are a kind of stoneware covered in a thick greenish or bluish glaze. The fabric has a green–blue tint. The forms that were imported into Jordan are mostly deep hemispherical bowls on a low ring foot, with thin walls and out-turned or flanged rims. On the Madaba Plains the Egyptian imitation of the Chinese ware is most common: the pseudo-celadon. It is an earthenware with a celadon-like glaze of the same color and imitating the Chinese form, but with thicker walls.

MOLD-MADE WARES

1. Glazed–Relief Ware – Figs. 6.1–4, 7.3–5, 8.11–19; Pl. 10

Second only to HMGP Ware, Glazed–Relief Ware is the hallmark of the Mamluk period in Jordan. It has a limited chronology and distribution; a 14th-century ware, it is found in Jordan and Palestine. Glazed–Relief Ware is a category of wheelmade, glazed bowls, the exterior surfaces decorated with mold-impressed designs. The forms are either monumental-sized, carinated bowls or miniatures of carinated or hemispherical profile, both on a high, splayed pedestal foot, with rolled, deeply in-curving rims. The green or yellow lead glaze is heavily applied and glossy, and covers a white slip; sometimes the bowl exterior is glazed in yellow and the interior in green. The fabric is a fine light red or pink,

calcareous clay with tiny black and red inclusions. The large bowls generally carry a register around the widest part of the vessel, which includes an Arabic inscription in thulūth script and heraldic blazons of military office. Their interiors are often decorated with abstract florals in sgraffito. The miniatures carry registers with geometric designs and the occasional Arabic inscription in naskhī script, and the occasional heraldic blazon. Glazed Relief Ware was mass-produced, as demonstrated by the tripod scars.

2. Slipper and glazed saucer lamps – Fig. 6.12; Pl. 5 (bottom)

Two lamp forms are typical of the period: the slipper lamp, which appeared in the Ayyubid era, and the simple saucer lamp. The slipper lamp is of a white or pinkish fabric; Arabic inscriptions and geometric designs are most common. The saucer lamp is of simple design: a disk of clay, punched at one end. They are of a fine, dark red or orange clay and are usually covered in a transparent yellow lead glaze, with or without a white slip-painted linear design.

3. Coil construction – Fig. 7.12, 13; Pl. 11

1. (Sugar) molasses jars

Heavy, handleless jars of either pear-shape or hourglass profile were used in the process of cane sugar processing: to collect the syrup that dripped through the cones described above. They were also used for transport and storage. They come in at least three standardized sizes, and are thick walled and quite heavy. The fabric is a light red or orange and is a bit coarse, with many quartz inclusions.

FIGURES

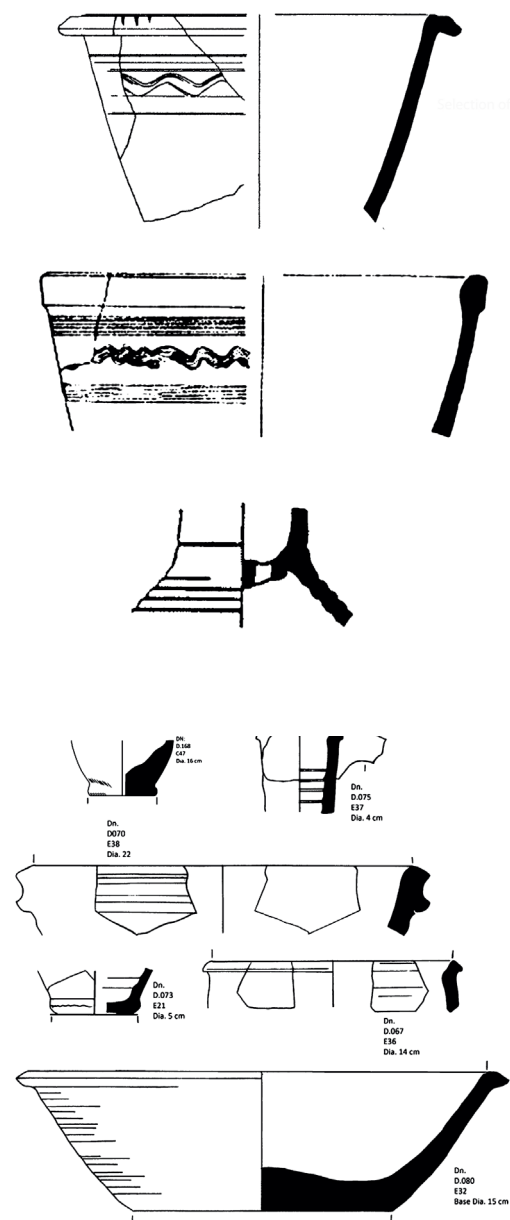


Figure 4 – Fatimid-era Cream Wares from Ayla–Aqaba (Damgaard 2013: 91, Fig. 4)

⁴ An albarello is a handle-less jar used in Europe from the 15th century to store medicine.

⁵ Naskhī is a medieval Arabic script used for everyday use. It was used by government officials for record-keeping and historians when they wrote chronicles. The letters are a typical, cursive form, as wide as they are high.

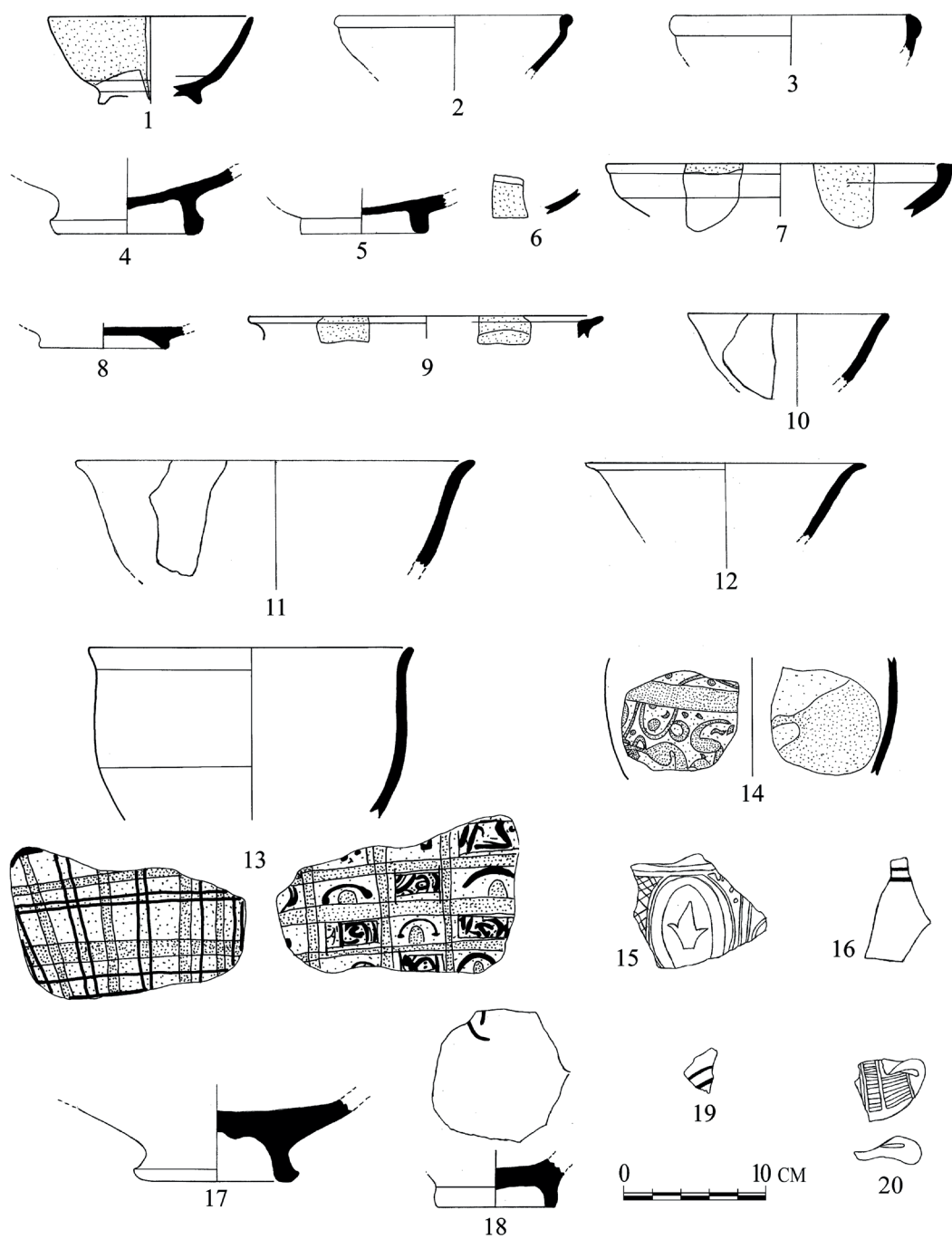


Figure 5 – Ayyubid glazed wares and lamps from Tall Hisban (based on Walker 2009: 549, Fig. 4.14 and p. 560, Fig. 4.17.14)

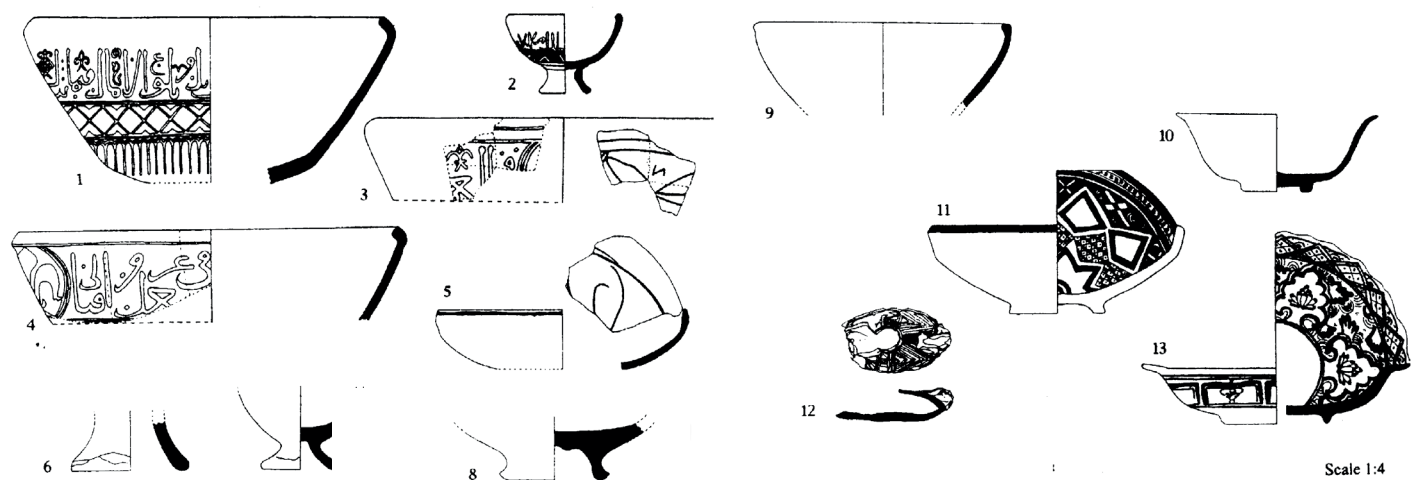


Figure 6 – Pottery from the storeroom of the Mamluk Citadel at Tall Hisban (Walker and LaBianca 2003: 465, Fig. 33)

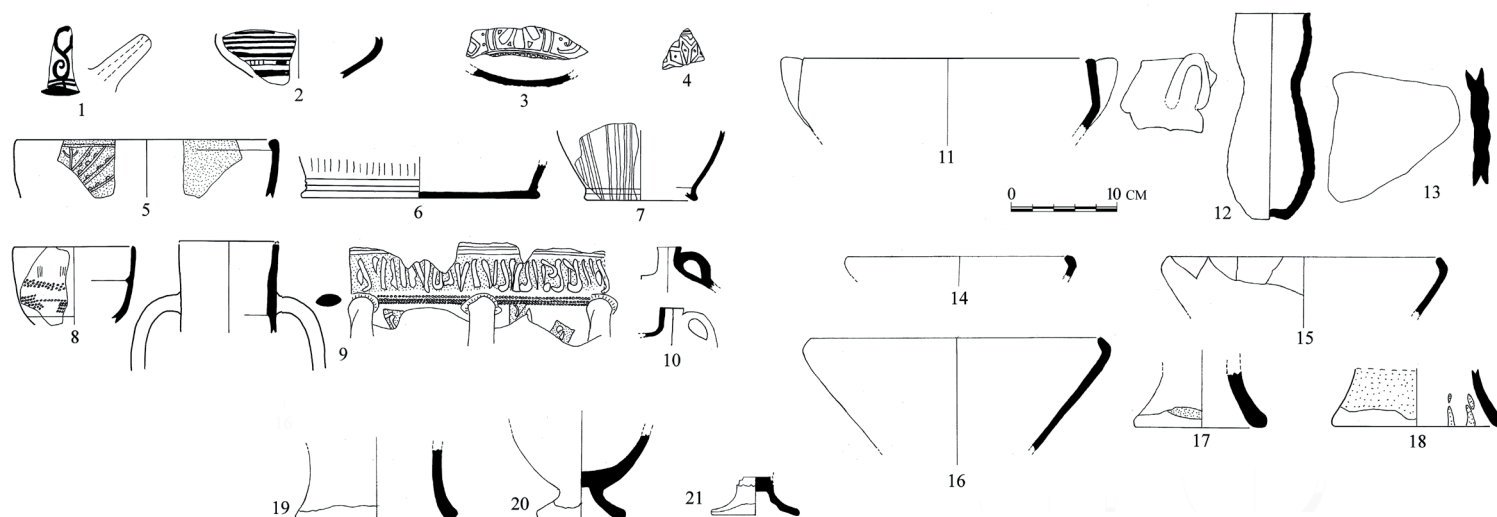


Figure 7 – Mamluk pottery from Tall Hisban (Walker 2009: 570, Fig. 4.20)

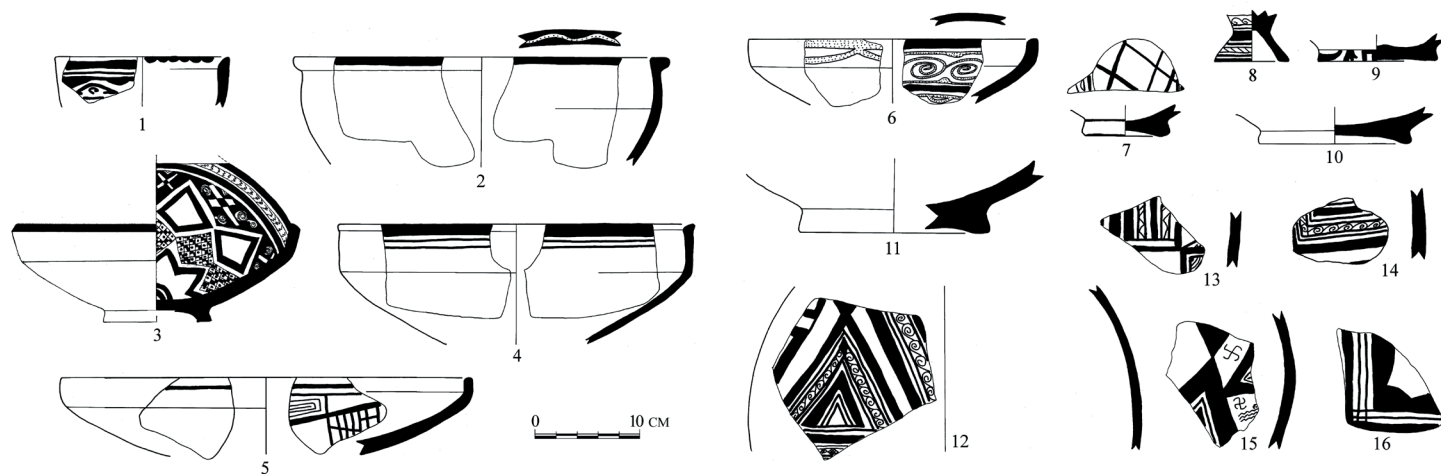


Figure 8 – Glazed wares from Tall Hisban (Walker 2009: 573, Fig. 4.21)

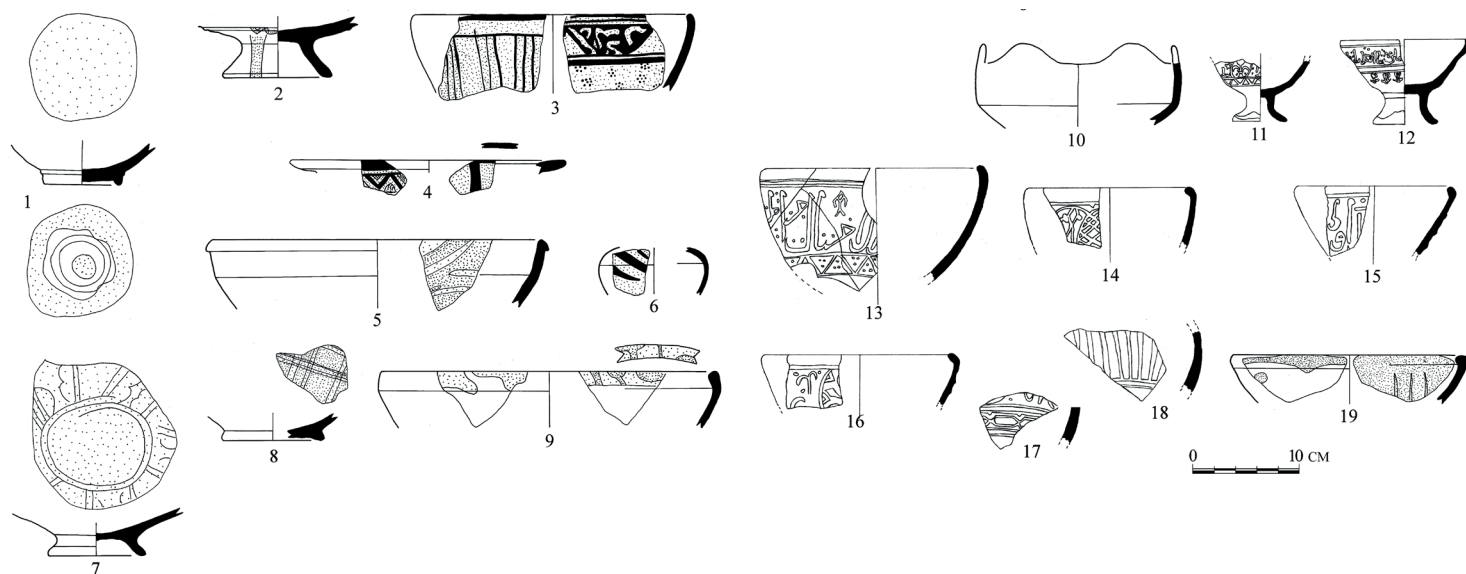


Figure 9 – HMGP Ware from Tall Hisban (Walker 2009: 581, Fig. 4.23)

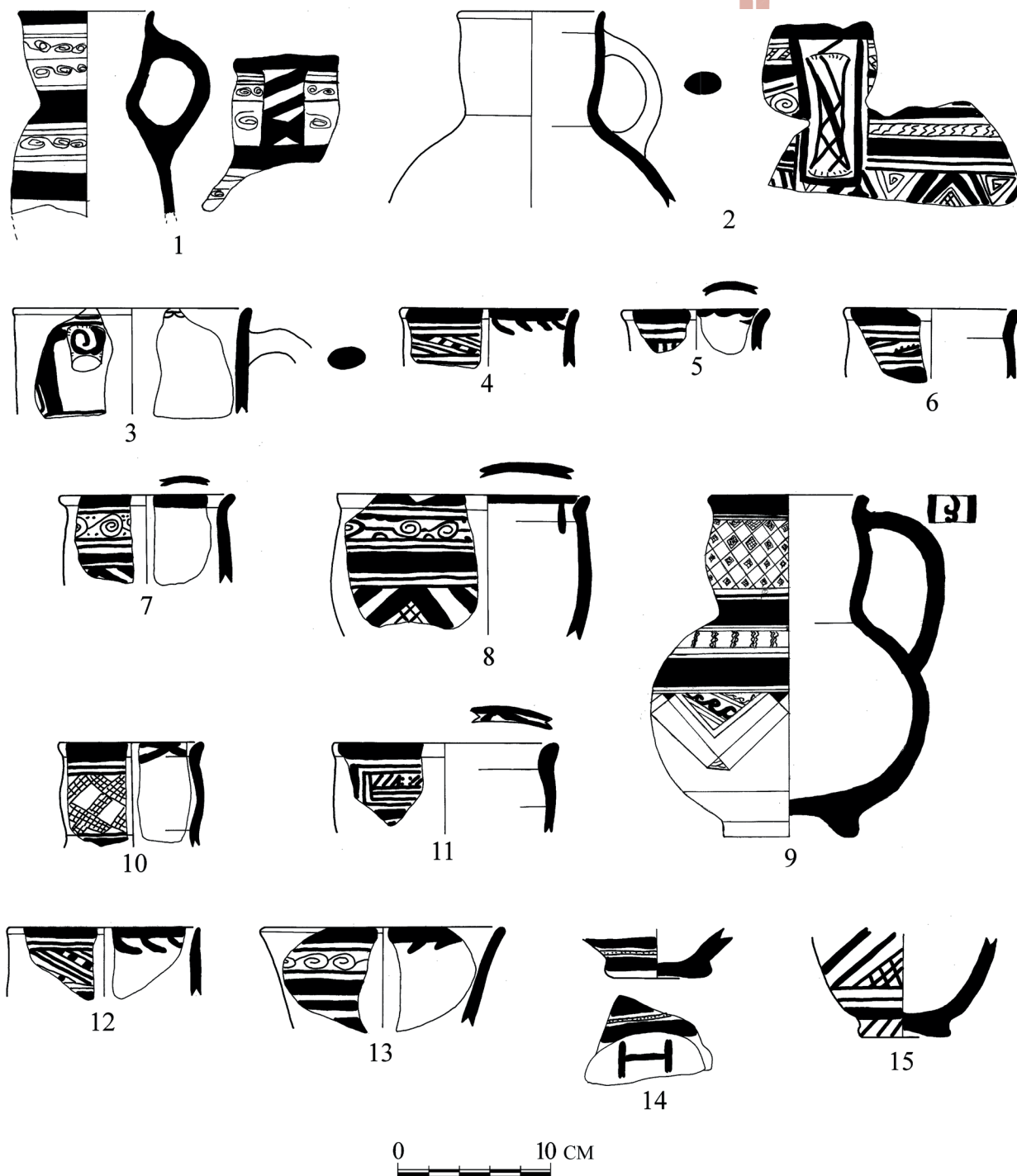


Figure 10 – HMGP Ware from Tall Hisban (Walker 2009: 584, Fig. 4.24)

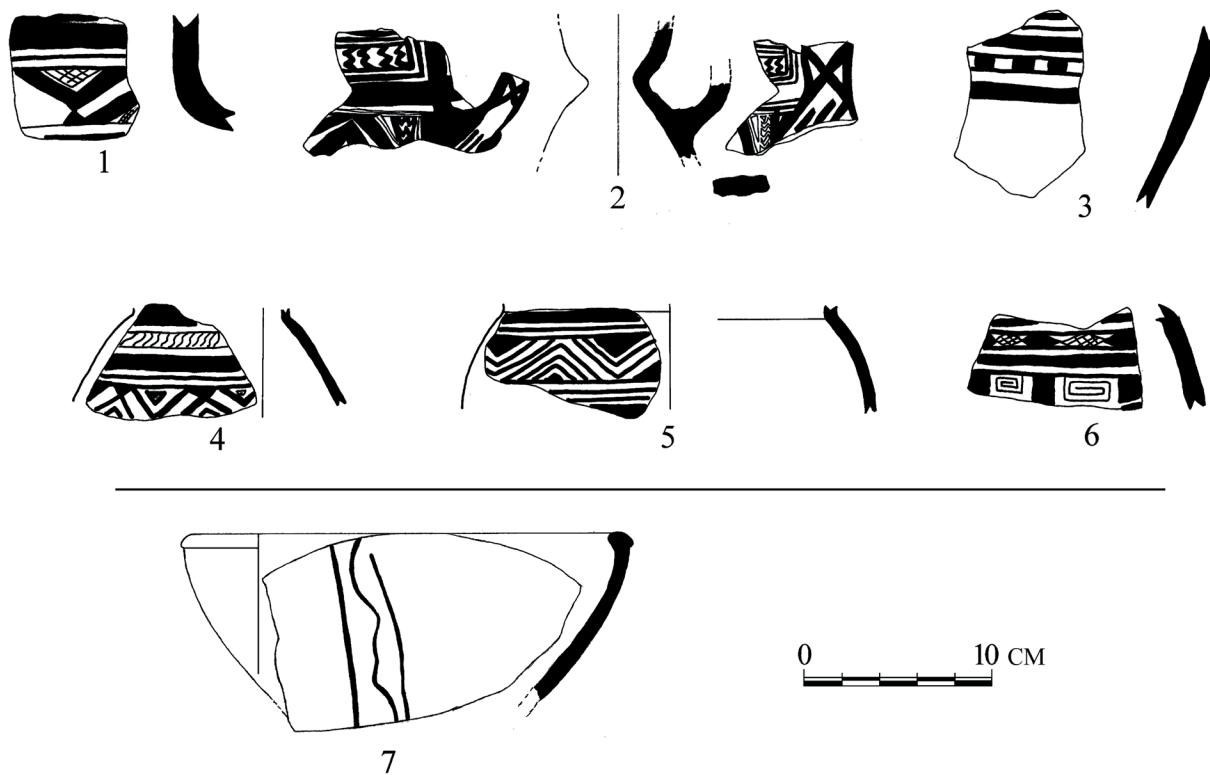


Figure 11 – More Mamluk pottery from Tall Hisban (Walker 2009: 5786Fig. 4.25.1–7)

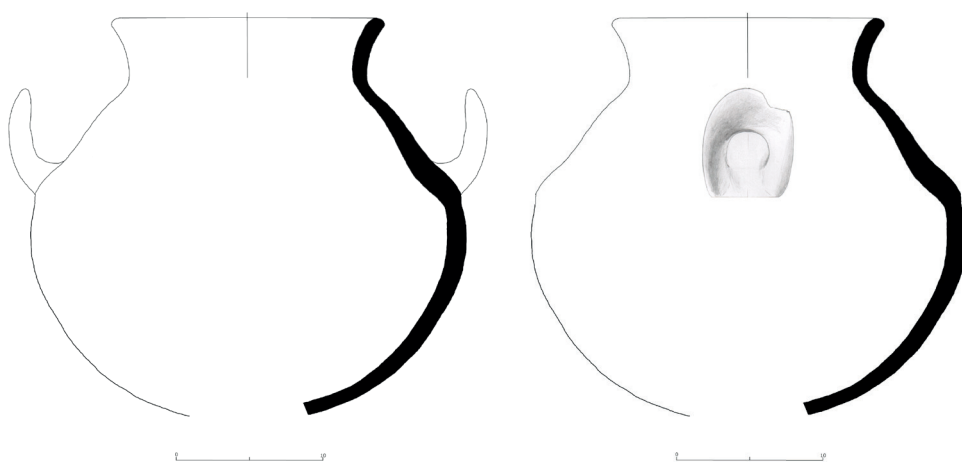


Figure 12 – Profile drawing of a cookpot from a tower of the Mamluk Citadel at Tall Hisban (University of Bonn files)



PLATES



Plate 1 – Fatimid Brittle Ware cookpot handle, Tall Hisban (University of Bonn files)



Plate 2 – Montage of Mamluk pottery from Tall Hisban (Heshbon Expedition files, Andrews University)

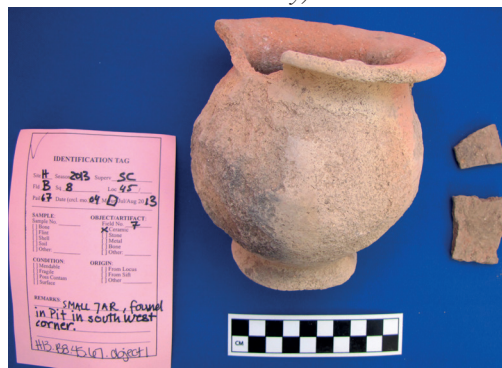


Plate 3 – Handmade jar from house pit at Tall Hisban (University of Bonn files)



Plate 4 – Handmade cookpot from southeast tower of Hisban Citadel (University of Bonn files)



Plate 5 – Montage of Mamluk pottery from Tall Hisban (Heshbon Expedition files, Andrews University)



Plate 6 – Mamluk-era Islamic Cream Ware jar, Tall Hisban (University of Bonn files)

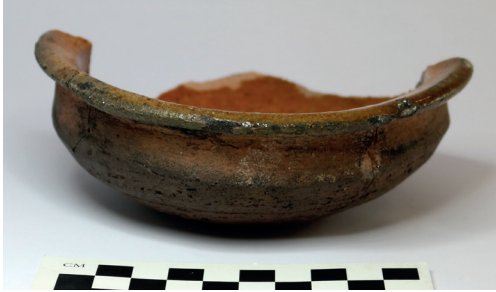


Plate 7 – Mamluk-era glazed cooking bowl, Tall Hisban (University of Bonn files)

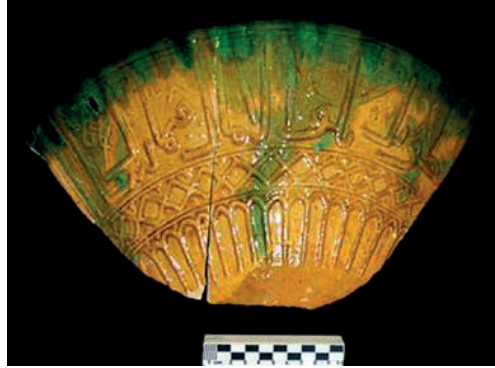


Plate 10 – Glazed Relief Ware bowl, from Mamluk Citadel storeroom at Tall Hisban (Andrews University files)

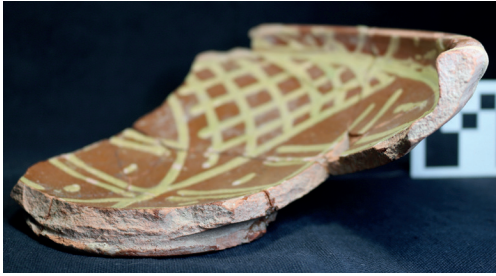


Plate 8 – Mamluk-era slip-painted bowl, Tall Hisban (University of Bonn files)



Plate 9 – Mamluk-era Underglazed Painted Ware jars from a house pit at Tall Hisban (University of Bonn files)



Plate 11 – Molasses jar, from the Mamluk Citadel storeroom at Tall Hisban (Andrews University files)

The Late Islamic Period

(Ottoman)

Basem Mahamid
(basemmahamid@yahoo.com)

The Ottoman rule extended more than four centuries and is one of the longest historical periods in Jordan. This period had a great impact on the social and economic formation of Jordan, and thus on industries and arts such as pottery manufacturing.

The Ottoman period in Jordan witnessed a gradual decline in the social and demographic systems, the decline of rural areas and villages (a complete abandonment in some cases), an increase in the number of nomads and the control of local Bedouin leaders over the region, which was a result of the collapse of the administrative system of the Ottoman Empire and the adoption of a new system for collecting taxes continuously during various phases of Ottoman Empire life.

In the years AD 1517–1740, the Ottomans called the Levant “Ayalat Arab,” “Wilayat Arab,” which means the Arab provinces; Jordan formed part of this province but it was not mentioned within the administrative organizations with borders or regions. Therefore, the same Mamluk administrative organizations continued to be adopted (Bayat 2007).

Between AD 1740 and 1831, a gap existed in the administrative organizations, and it seems that there was an almost complete abandonment of the population in the area. The traveler Lynch (1848) mentioned that he did not find residents in the villages that extended from the Jordan valley to Umm Qays. He found only a few farmers in the village of Samad; so, travelers Thompson (1857) and Schumacher (1840–1850) (Jaloudi and Bakhit 1992).

The traditional Ottoman administrative system continued until the year

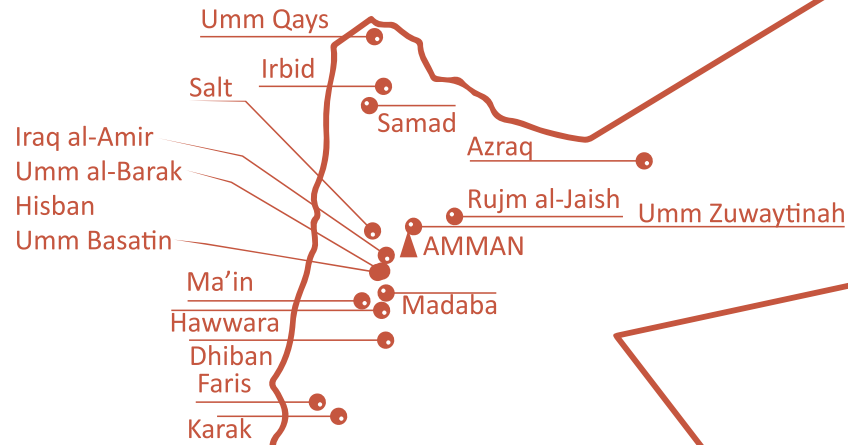
AD 1864, when the states system was adopted, and what is known as Saraya, the security centers for the Ottoman forces, emerged, such as the Saraya Irbid, Madaba, and Dhiban. This period also witnessed the establishment of castles and forts to control trade routes and protect the pilgrims' caravans and the Hijaz railway by the end of the 19th century (1864–1918).

Jordan encountered administrative turmoil during the Egyptian rule of the region (1831–1840), until the Ottoman states law was applied, and the state of Syria, to which Jordan belonged, was divided into regions: liwa', (sanjaks), districts, villages, and farms (Awad 1996).

It is noticeable that many researchers lack interest in studying Ottoman pottery in Jordan due to the presence of many historical documents, which substituted for studying pottery, in addition to the abundance of historical sources that had a great impact on knowledge regarding the nature of settlement and population movement. This includes the study of manuscripts and documents such as entitlement logs (records of land sale and purchase, land ownership, and socioeconomic life) and records of Sharia courts. Some studies of customs, traditions and issues related to popular mythology, especially amulets, necklaces, and spells (spells and incantations written on paper, then wrapped in a piece of cloth and attached to the person of interest). Studies of jewelry, costumes, beads, etc., and everything related to popular life, from spoken or material folklore, also spread.

The decline in settlement in most areas of Jordan in that period led to the absence of historical and archaeological layers dating back to the

JORDAN MAP
Sites in Pottery of Jordan
Manual
Late Islamic Period
AD 1517-1924



Ottoman period, the early 16th century to the early 20th century. Socioeconomic conditions also contributed to the emergence of a new type of settlement, known as seasonal settlement. Researchers and excavators in most of the archaeological sites in Jordan note the presence of this type of settlement. Seasonal settlement was dependent on tents and perches, which resulted in a scarcity of ruins as represented by the small number of pottery sherds. Sometimes it also depended on caves or ancient ruins, making it difficult to document or find these layers. It also led to the chronicling of the newer layers of the sites' settlements up to the Ayyubid Mamluk period. However, some villages continued to be populated or were abandoned at the beginning of the Ottoman period and became repopulated in the middle and late Ottoman period (early 19th century to early 20th century).

This study relied on studying the Ottoman pottery discovered in a number of archaeological sites such as Umm Zuwaytinah, north Amman, Umm al-Barak, north Madaba, Umm al-Basatin, and Rujm al-Jaish (Rujm of Army), and also based on the results of excavations at Hisban, Khirbat Faris, Karak, and the Amman Citadel.

Many researchers agree that methods of manufacturing Ottoman pottery, and the stages of development or decline, were a result and a reflection of the administrative and

political situations the region went through during the Ottoman period. Based on what was mentioned, we can say that there were three phases reflected in forms and types of pottery manufactured locally in Jordan, which follow below.

THE FIRST PHASE (1517–1740):

Characteristics and features of Ottoman pottery, especially at the end of the 16th century and the beginning of the 17th century, are very close to those of Mamluk pottery. This similarity may perhaps be due to the use of the same manufacturing techniques, firing methods, and general forms of pottery.

Paste: The paste of local Ottoman pottery is generally coarse, ragged and incoherent and abounds in impurities; sometimes there are remnants of straw and voids inside. It is mostly brown or gray colored and sometimes red and cream colored.

Firing: All samples of locally manufactured Ottoman pottery found at archaeological sites from this phase were fired at low temperatures. It is believed that kilns were open, leading to this inconsistency in burning and blackness on the body as a result of soot. However, we note that imported pottery is well fired, especially the glazed pottery, despite the scarcity of this type, and the paste is usually more homogeneous with less grits.

Grits: It is noticeable that locally manufactured Ottoman pottery contains different kinds of grits, which consist of crushed stone fragments, inclusions of lime, and some plant residues, which are normally straw.

Manufacturing methods: Ottoman pottery was either handmade or wheel-thrown. There is also painted or glazed pottery.



Colors and decorations: The same techniques of pottery manufacturing that were prevalent in the Mamluk period continued to be used at the beginning of the Ottoman period.

FORMS OF OTTOMAN POTTERY/ FIRST PHASE

JARS

Most of the jars found in many archaeological excavations are handmade, with few wheel-made, especially imported ones. These jars have multiple uses, such as for storage jars (Khawabi), water jars (Zeir) and food-preservation vessels. It is noticed that most jars, especially those dating back to the early Ottoman period, are spherical in shape with a disk-shaped base, or sometimes a flat-shaped base showing the remnants of the mats on which the jars were formed. Jars sometimes have two handles and sometimes four. There is another type of jar in the shape of a pear; this was common in jars imported from Gaza. These jars were distinguished by a long neck with a wide handle affixed to the body of the jar, which was decorated with slits down the handle on the body of the jar. Jars' bases were varied among discoid, annular, and sometimes flat bases.

COOKING VESSELS

Cooking vessels are characterized by a spherical body with thick walls. They have horizontal handles at a sharp angle. They also have a thick rim curved to the inside and are usually made of coarse paste with impurities in the form of white granules. They were fired in low temperatures and were made of brown or gray clay (Fig. 1). A type of handle known as

"elephant handles" appeared which accompanied cooking jars; usually these handles are linked to the body of the jars below the mouth on the spherical body; this was popular at the beginning of the Ottoman era (Fig. 2).



Figure 1 – Cooking pot from Khirbat Nawafila (in Wadi Musa), 1998, Jordan Museum

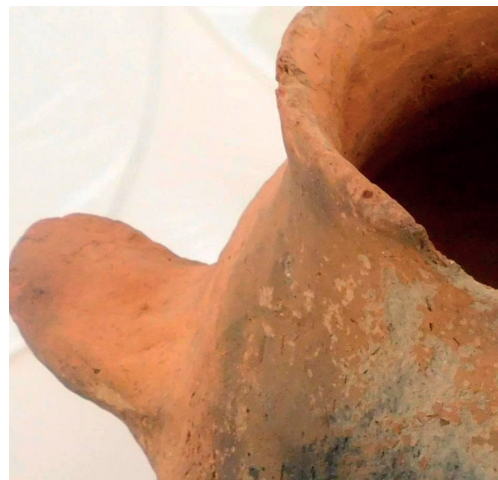


Figure 2 – Elephant handle from Khirbat Nawafila, 1998, Jordan Museum

CHIBOUK/TOBACCO PIPE

The tobacco pipe is common for the first time during this period, resulting from the practice of tobacco smoking. It is certain that this type of pottery was not locally made (Fig. 3). It was one of the most famous new shapes and was observed in most sites dating to the Ottoman period. The tobacco pipe is a distinctive feature of Ottoman-period pottery, often relied upon to date the archaeological layers from that period. Its manufacturing developed over time in terms of paste, the outer color, the diameter of the pipe mouth and the stem, which became longer and larger in size and tends to be black in color (Fig. 4).



Figure 3 – Chibouk (Tobacco Pipe), Dar Saraya Museum, Irbid



THE SECOND PHASE (1740–1864):

This stage witnessed a complete absence of documentation due to the lack of central control of the Ottoman Empire over the region. It also saw a decline in settlement, which had the greatest impact on the lack of pottery manufacturing that can be inferred, classified or dated, with the exception of pilgrim stations and castles; here was found imported pottery that accompanied pilgrims, types and characteristics dependent on the places from which it came. Imported pieces were found in all Ottoman periods.

THE THIRD PHASE (1864–1918):

This is considered the clearest phase, which witnessed the beginning of the emergence of Jordanian cities such as Irbid, Karak, and Salt, and villages such as Hisban, Ma'in, Huwwara, and Iraq al-Amir. It also witnessed the arrival of the Circassian, Armenian, and Shishans immigrants to the Amman and Azraq regions. The most famous forms and functions of pottery included Gaza Gray Ware, big storage jars "khawabi," the use of nargila (hookah), and sibeel, with the continued use of the pipe.

Paste: coarse but more homogeneous, with fewer impurities, its color tends to be creamy and creamy reddish.

Firing: fired at higher temperatures.

Grits: It is noticeable that locally manufactured Ottoman pottery at this phase has less grits, with inclusions of sand this time.

Manufacturing methods: Ottoman pottery was either handmade or wheel-thrown.

Colors and decorations: The

absence of coloring from the body of artifacts in the middle and the end of the Ottoman period was noticed. A new style of decoration appeared at the beginning of the 19th century, which is relief decoration on the body of the pottery. This relief decoration is usually in the form of a braid ending with a rose or a leaf, while the color of the decorated pottery is usually reddish-cream (Fig. 5).



Figure 4 – Set of tobacco pipes from Khirbat Nawafleh

Forms of Ottoman Pottery/Third Phase

Jars: It is noticed that most jars dating back to the late Ottoman period are creamy or reddish-creamy colored paste, spherical in shape with a flat-shaped base, a thin mouth that flared outward, and had handles on the body below the neck (Fig. 6). Jars were found with embossed decorations on the body as ones discovered in the courtyard of the reception hall at the Amman Citadel.



Figure 5 – Jar with relief decoration on body, Orthodox Museum of Baptism Site



Figure 6 – Reddish creamy jar (Khabiya), Orthodox Museum of Baptism Site



GAZA GRAY WARE

This pottery is characterized by the gray-color paste and is thrown on a wheel, as it is distinguished by its manufacturing techniques. It is believed that the manufacturer would add ash to the clay before the manufacturing process. As well, another technique was by firing the piece inside the oven to reach the oxidation level that makes it saturated with carbon dioxide, which sometimes gives it a dark gray, light, or black color. Shapes of Gaza Gray pottery varied significantly, including jugs, small and large jars, and water jars, which are the most common. This pottery is one of the most famous types of pottery dating to the Ottoman period, when Gaza was the main port in the Levant. Gaza was also a point of confluence for convoys; hence, we find Gaza pottery to be common in archaeological sites in southern Jordan. The manufacture of Gaza pottery continued from the early 16th century to the mid-20th century (Fig. 7).

JUGS

Jugs dating back to the Ottoman period are distinguished by their round body attached to a wide and curved neck. The bases are mostly in the form of concave disks, but some have flat bases. They normally featured brown, red, or gray decorations (Fig. 8).

HOMEMADE GLAZED POTS

It is often noticed that glazed pots were made in primitive ways and usually have a thin lining and sometimes appear without a lining. The glazing is mostly dark green, and the most important characteristic of locally glazed vessels is that they have a ring base.

A new type of glazed pottery appeared, which was used in making deep dishes and plates, which are usually vessels with sharply folded edges to the outside. These vessels and dishes were decorated with slits and drawings that appear under the glazing.

SIBEEL

This is another type of tobacco pipe which is believed to have appeared in the early 19th century. It is characterized by having a hand (leg) of long reeds fixed to the ceramic body of the pipe. The sibeel is distinguished by its larger size, creamy color, and broad base, and it is still used in rural areas of Jordan (Fig. 9).



Figure 7 – Gaza Gray Ware jar, private collection



Figure 8 – Black Ware jug, private collection



Figure 9 – Sibeel, Dar Saraya Museum, Irbid

PART 3

RESOURCES



Glossary

Terms	Definitions
Amphora (amphorae, pl.)	Tall ovoid pottery container with two loop handles, a pointed base, and a narrow neck
Amphoriskos (amphoriskoi, pl.)	Small amphora
Analysis	Examination of an object, action, material, or concept in detail by separating it into its fundamental elements or component parts. (From Getty Research – Art & Architecture Thesaurus Online)
Appliqué	Added piece of clay, typically attached for decorative purposes
Archaeological excavations	Field research to recover objects from previous times, whether by digging in the ground or systematic exploration on land or underwater
Archaeological site	Location with evidence of past human activities
Assemblage	Collection of varied artifacts found together
Assessment	The formulation of general results through the correlation and interpretation of existing and newly collected information. (Recording, Documentation and Information Management for Historic Places – Guiding Principles; Getty Conservation Institute, 2008).
Asymmetrical	Non–similar corresponding parts
Base	Bottom of a vessel
Base, button	Base of a vessel shaped like a button or knob
Base, disk	Base of a vessel in the form of a flat or concave disk
Base, string–cut	Base of a vessel cut from clay source with a string, creating a spiral effect
Body	Main part of a vessel between rim/neck and base.
Bowl	Typically open circular container
Burnishing	Finishing method used to smooth and seal a vessel surface, giving it a shiny appearance
Calcareus	Chalky, containing calcium carbonate
Carination	Ridge or sharp angle and change of direction in vessel wall
Celadon	Jade–green glazed pottery
Chalice	Footed bowl
Chert chips	Flakes of stone valued for their strength and ability to be shaped as needed
Clay	Microscopic natural deposits that derive from weathered rocks and becomes plastic and malleable when wet
Clay body	Microscopic clay particles plus any additives used by potters to make ceramic containers
Closed vessel	Vessel with a mouth or rim opening smaller than the body



Coating	Anything added on the interior or exterior surface of a vessel for decoration or to prevent seepage
Coiling technique	Use of ropes or coils of clay applied incrementally to construct vessels of any size, often combined with the use of a mobile turntable
Collar	Raised feature located below the rim, on the neck, or on or above the shoulder
Color system – Munsell	Predominant color–analysis system used in archaeology, based on color, color intensity, and lightness used to provide an objective description of clay color
Computer modeling	Computer software that processes XYZ coordinate points and builds up models that can be formed into different shapes of objects
Condition assessment	A record of the state of the critical aspects of objects at a given time
Cooking pot	Typical pottery form with rounded base, deep globular body, closed or open neck and rim, with or without handles, made of a clay body that can withstand repeated heating in an oven, over an open fire, or in a bed of coals
Corpus	Collection or body of finds
Cult, cultic	Associated with worship practices
Cultural activities, goods and services	“... activities, goods and services, which at the time they are considered as a specific attribute, use or purpose, embody or convey cultural expressions, irrespective of the commercial value they may have. Cultural activities may be an end in themselves, or they may contribute to the production of cultural goods and services.” (From UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions 2005)
Database	"Any collection of data, or information, that is specially organized for rapid search and retrieval by a computer. Databases are structured to facilitate the storage, retrieval, modification, and deletion of data in conjunction with various data–processing operations." (Encyclopedia Britannica)
Dating with ceramics	Systems for measuring time periods based on the presence or absence of particular pottery types
Decoration	Surface treatment, internal to the clay or added onto it, either before or after firing, to enhance aesthetic value
Diagnostics sherds	Pottery sherds used to identify pottery form and date–normally rims, bases, some decorations, sometimes ware or handles
Dipper juglet	Small closed container used to dip liquids or even grain from a larger vessel
Documentation	All of the records, written and pictorial, accumulated during the examination and treatment of an object; documentation includes the examination records and report, treatment proposal, owner consent, the treatment records and reports
Elite forms	Vessel types used in contexts of wealth and privilege



Elongated	Shape that is longer than wide
Everted	Tending or leaning outward but not flaring
Exterior	Outside, external
Fabric	Physical material attributes of vessel, including components
Fenestration	Window shaped
Firing	Burning process to harden clay into pottery
Flask	Round-bodied thin ceramic container with narrow neck and two handles for attaching carrying cord
Form	Type of vessel, e.g., bowl or jar
Glaze	Thin layer of transparent or colored glass produced by the application of metallic chemicals on a fired vessel surface(s) and then refired to a high temperature
Globular shape	Spherical body of vessel that is roughly as wide as it is tall
Graphic record	General term used for measured drawings, rectified photographs, ortho-photomosaics, or 3-D models, graphically or photographically describing the physical configuration of the object
Grits	Mineralogical grains either added to or mined with the microscopic clay particles, also known as tempering materials or inclusions
Grog	Type of additive to clay made from crushed potsherds
Handmade	Vessel crafted by hand and not wheel-thrown.
Handle	Clay strip or knob-like attachments on a vessel to carry, hang, or lift it and to tie down lids made of cloth, wood, plaster, or clay
Holemouth	Typically large vessel with inverted rim but no neck
Incise, incision	Type of decoration produced by the use of a sharp instrument such as a bone, shell, wooden, cane, or stone tool
Inclusion	Any material, usually mineralogical ceramic (grog) or organic (dung, straw, cattails, seeds, etc.) , mixed with clay to give it body
Intact	Complete, not separated or broken
Interior	Inside, internal
Interpretation	Understanding and meaning of vessel use and cultural significance
Inventory list	Comprehensive list of items
Inverted	Tending or leaning inward
Jar	Storage or transport container that is smaller than a pithos, often with two opposing handles and a narrow opening



Jug, juglet	Small and even smaller single–handled closed vessels used for beverage consumption, perfumes, precious fluids, and medicines
Kiln	Oven, built with stones or bricks, used for firing clay vessels, with a firing chamber where pots sit in heat from fuel burning underneath in a fire box
Krater	Large deep bowl with a wide opening, with or without handles, traditionally used to mix wine with water
Lamp	Vessel used with wicks to provide light, open in earlier times (through the Hellenistic Period) and closed, including molded, in later times
Levant	Variously used to describe countries along the eastern Mediterranean coast and inland
Levant, southern	Israel, Palestine, and Jordan (and sometimes the Sinai)
Level of firing	Firing temperatures and conditions
Lip	Tip of vessel opening.
Manufacture – domestic	Production of clay vessels in every household for exclusive family use
Manufacture – industrial	Production of clay vessels in industrial contexts (small and large) for sale
Material culture	Anything made by human beings
Materials	"Physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic place." (Getty Conservation Institute Glossary for Iraq Course 2004).
Measured drawing	"Drawing produced by using direct or indirect measurements on the object." (Recording, Documentation and Information Management for Historic Places – Guiding Principles; Getty Conservation Institute, 2008).
Metrics	Measurements, including methods and results
Micaceous	Consisting of mica
Mold	Soft (basketry) or hard (fired clay bowls or carved stone) objects on or in which clay can be shaped
Motif	Feature or decorative design
Neck	Vessel feature below the rim and above the shoulder, which can be tall or short, wide or narrow, flaring, bulging, or straight
Omphalus	The center of something, navel
Open vessel	Vessel with an opening as wide as or larger than the body
Paint	Slip with added pigment and applied to surfaces in a decorative pattern that does not cover the entire surface
Paste	Clay body of vessel
Period of significance	"The span of time during which significant events and activities occurred at a place." (Getty Conservation Institute Glossary for Iraq Course 2004)



Photogrammetry	Methods of image measurement and interpretation used "to derive the shape and location of an object from one or more photographs of that object. In principle, photogrammetric methods can be applied in any situation where the object to be measured can be photographically recorded." (Close Range Photogrammetry - Principles, Methods and Applications; T. Luhmann <i>et al.</i> , 2019)
Pinching	A technique to shape small vessels by pushing a hole into a ball of clay and then pinching it to form an open bowl no larger the length of the fingers, or two bowls attached so as to form a small jug or juglet
Pithos (pithoi, pl.)	Large immobile pointed storage jars, often embedded into the ground
Platter	Flat bowl
Pyxis	Small squat, square-shaped vessel with a lid and handles
Pyriform, piriform	Pear-shaped
Rim	Top of vessel, which constitutes the major diagnostic feature in the study of typology
Scale	"A ratio of the size of a drawing or photograph recorded image to the actual physical size of the subject. A large scale means higher accuracy and finer detail." (Recording, Documentation and Information Management for Historic Places – Guiding Principles; Getty Conservation Institute, 2008).
Sgraffito	Kind of decoration produced before firing by scratching through a surface (e.g., a slip), which will show a lower layer
Shape	Form or design of vessel
Sherd, potsherd, shard	Broken piece of ceramic vessel
Shoulder	Component typically at the widest portion of the vessel below the neck
Significance	"The meaning or value ascribed to a cultural resource based on the NRHP criteria for evaluation." (Design Guidelines for Department of Defense Historic Buildings and Districts; US Department of Defense, 2008)
Sites	"Sites: works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view." (UNESCO World Heritage Convention Art.1).
Sketch diagram	A rough, quickly drawn illustration that demonstrates overall proportions, size, and surface treatment
Slip	A slurry of extremely fine-grained clay particles that are sorted out from the raw clay matrix by soaking in water and used to cover the entire vessel or large areas inside and/or outside
Sourcing	Locating the place of origin of clay to determine where pottery might have been made
Tankard	Large cylindrical drinking vessel with single handle



Temper	Materials added to the clay particles because they are too fine for shaping pottery; temper serves as an infrastructure for the clay and reduces rapid shrinkage and/or expansion during the firing process – also known as grits or inclusions
Tournette	Horizontal disk used for turning pottery in the manufacturing process
Trefoil	Three–fold shape, at times in jug rims
Typology	Study of type or form
Use	Functions of an object within its cultural context
Utilitarian	Normal, non–elite, or non–specialized function; vessels used for regular or seasonal purposes
Value	"The positive characteristics attributed to heritage places and objects by legislation, governing authorities, and/or other stakeholders. These characteristics are what make a site significant, and they are often the reason why society and authorities are interested in a specific cultural site or object. In general, groups within society expect benefits from the value they attribute to the resource." (Getty Conservation Institute Glossary for Iraq Course 2004).
Votive	Something offered in fulfillment of a vow
Ware	All features of a collection of vessels, including components, color, hardness, surface treatment, and firing
Waster	Broken or over–fired vessel or sherd resulting from unfavorable firing conditions in the kiln or pit
Wheel disk	Wooden or stone lower half of circular disk on which potters throw their wares
Wheel–thrown	Manufacturing technique that allows both hands to shape the pot on a rapidly rotating surface that, once kicked by the foot, continues to spin under its own momentum

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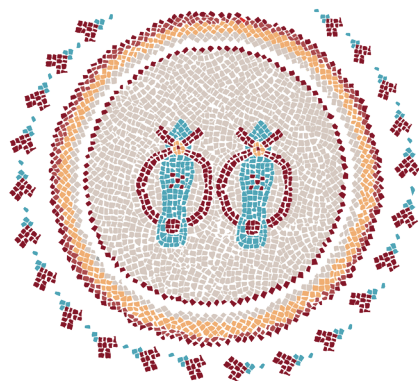
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Madaba Regional
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مشروع متحف مادبا
الإقليمي الأثري الجديد

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