

Ancient Pottery of Transjordan

An Introduction
Utilizing
Published
Whole Forms

Late Neolithic through Late Islamic

by

Ralph E. Hendrix
Philip R. Drey
J. Bjørnar Storfjell

Ancient Pottery of Transjordan

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In cooperation with the:



*Institute of Archaeology/
Horn Archaeological Museum
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Front cover design by Ralph E. Hendrix; Pottery example illustrations are redrawn from the publications cited in their descriptions.

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Foreword

How well I can remember my first season on an archaeological dig, sitting around the pottery tables in the afternoon watching the senior staff grouped around the dig director as the latter made confident pronouncements as to the dating of the various pottery sherds spread out before him. To the beginning student, this daily dig ritual appeared somewhat akin to a soothsayer looking into a crystal ball and seeing wonderful mysteries that were totally invisible to us mere mortals. And I can remember the frustration I felt as just when I thought I had the various shapes, forms, and ware figured out, the “pottery wizard” would make a call that destroyed my whole understanding! When I would ask, “Isn’t there something I could read to get this pottery thing sorted out?” the response was typically, “read Amiran [referring to Ruth Amiran’s book, *Ancient Pottery of the Holy Land*], but she is out of date and the only way to really know pottery is through long years of working with it, and read the publications”—not particularly encouraging to a beginning student!

Now, 16 years later, as I direct my own excavations and make my own pottery calls, I must admit I get a kick out of those same feelings I evoke in young students as they watch me appear to perform similar feats of wizardry. However, I have not forgotten the frustrations I felt when I was starting out as a field archaeologist. There is still no replacement for the years of working directly with the pottery, yourself—digging, reading, drawing, writing. However, I noticed that even the “masters” occasionally would check on a point in Amiran, and those of us who went on in our studies found Amiran’s book, in spite of its shortcomings, a useful skeleton or frame upon which to begin our understanding of the ancient pottery of Palestine.

The book offered here is intended to provide the same kind of support for the beginning student who wants to excavate in Transjordan. It is not a replacement for the years of field work, pottery drawing, and comparative studies that it really takes to master a region’s ceramic corpus;

nor is this book intended to be the “bible” for Transjordanian pottery—inevitably some forms have not been included for a variety of reasons—as the authors explain. Rather, it is intended as a pedagogic device to help students get into the pool and start paddling for themselves. In that role, this book will serve a most useful function. One significant way in which this book differs and, perhaps, improves upon Amiran is the inclusion of several “introductory” chapters that provide the student with the background of the ceramicist’s “magic.” Particularly useful will be the charts, tables, pictures, and explanations that help the new student wade through the myriad of terms employed by archaeologists in the process of describing the various types, forms, shapes and wares of the vessels they are studying. Hendrix, Drey and Storfjell are to be commended for pulling together, what I feel will be a most useful tool for those wanting to “get into” the pottery of ancient Transjordan.

Randall W. Younker, director

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October 14, 1996

Preface

The initial idea to produce a tool for pottery study was provided by J. Bjørnar Storfjell, Professor of Archaeology and History of Antiquity at the SDA Theological Seminary, Andrews University. At the time, the tool was conceived of as "pottery flashcards" for student use. The initial research was accomplished by Philip R. Drey during the process of his classwork. The question of publishing such a tool was brought to Ralph E. Hendrix in his capacity as Director of Archaeological Publication at the Institute of Archaeology, Andrews University. As the project progressed, it was determined that a flashcard format was not adequate to the scope of the project, and so, the flashcards grew to become this book.

The meticulous tasks of systemizing the data and establishing the form-based paradigm was done by Hendrix and Drey. They generated the driving methodology, wrote the text, digitized the graphics, initiated the association of consultants, and organized the final format of the book. After establishing a core of data (the initial text along with several hundred pottery examples), the material was passed before an international group of ceramic and archaeological specialists.

It is difficult to overstate the important contribution of these consultants. Despite their having evaluated the book only at an initial stage of its development, they provided an extremely collegial and helpful resource. The contributions of the consultants varied according to their areas of expertise and not only helped verify the academic content of the book, but assisted in clarifying the mode and form of its presentation. Where a particular consultant has been quoted *verbatim*, in-text credit is given as "personal communication."

The following is a brief alphabetical list of the consultants, their affiliations, and a brief description of their contributions. Piotr Bienkowski (*Liverpool Museum, England*) evaluated the Iron I-III periods, providing the period characterization of the Iron II "Edomite" subculture. Joseph A. Greene (*Semitic Museum, Harvard University*) evaluated the project,

giving very specific input on the target audience and scope of the book, as well as specific details on the various periods and valuable glossary entries (including the explanation of the Munsell system). Timothy P. Harrison (*University of Chicago*) provided a detailed analysis of the Early Bronze Age, and a review of the Byzantine and Early Islamic periods, as well as insightful comments on form and format. Larry G. Herr (*Canadian Union College, Canada*) provided a helpful perspective on the issue of alternate "function" names. In addition, his bibliography of published pottery provided a fitting starting point for research. His willingness to make that resource available in its pre-publication form—a publication which, in itself, is an extremely valuable tool—was of great benefit. Nancy Lapp (*Pittsburg Theological Seminary*) evaluated the Iron II-III, Hellenistic, and Early Roman periods—in the process, providing very valuable insights regarding the qualitative nature of stratigraphic and non-stratigraphic archaeological data. Gloria London (*University of Washington*) evaluated the glossary. Burton MacDonald (*St. Francis Xavier University, Canada*) read the initial manuscript and provided extremely worthwhile insights which helped direct the project to its final form. Gerald L. Mattingly (*Johnson Bible College*) evaluated the introductory portions of the manuscript as well as the Early Bronze and Iron Ages. Mohammad Najjar (*Ministry of Tourism and Antiquities, Jordan*) very thoroughly evaluated the Iron II-III and Early Islamic periods, providing highly-detailed corpus descriptions for the period characterizations. Friedbert Ninow (*Theologische Hochschule Friedensau, Germany*) was meticulous in his suggestions regarding the form and format for presenting the complex material of this book at the introductory level. Kay Prag (*Manchester Museum, University of Manchester, England*) provided much needed detail regarding the EB IV period, especially regarding specific pottery examples. Paul J. Ray, Jr., (*Andrews University*) evaluated the Late Bronze and Iron Ages, offering substantial input in the chronology section and the periodization descriptions. R. Thomas Schaub (*Indiana University of Pennsylvania*) very graciously evaluated the Early Bronze Age data and offered significant details as well as methodological advice. Robert Schick (*Bir Zeit University, Palestine*) provided great encouragement for broadening the Islamic periods. His subsequent evaluation allowed for a better representation of these important cultures. Udo Worschech (*Theologische Hochschule Friedensau, Germany*) evaluated the Middle Bronze and Iron Ages, and provided the period characterization of the Iron II "Moabite"

subculture. Our appreciation to these consultants is beyond words and it is unfortunate that a second evaluation of the book, one of its final form, was not possible.

In the process of making this book, thousands of bits of data from various authorities were collated. Chapter 5 most clearly represents this collation of data, and every effort has been made to acknowledge the scholarship and rights of those sources used to build the chapter. Each period characterization references the relevant sites and bibliography upon which the description which follows was based. Each pottery example is accompanied by a brief description which includes the citation of its original publication. The pottery examples were first digitally-scanned, then redrawn, proportioned, and standardized for style. Since the graphics have been modified thusly for the purposes of this book, any scholarly critique or analysis of specific vessels on the basis of their illustrations should use the original publication.

Vital to bringing this book to the point of final publication was the support of Andrews University, in particular, the University's long-term commitment to archaeological research as manifested in the Institute of Archaeology/Horn Archaeological Museum and of its Director Randall W. Younker and Curator David Merling. Without their direct support, this book would not have gone beyond the barest planning stage.

The material presented in this book has been made available because of the work of hundreds of professionals, students, and volunteers who recovered, analyzed, and published thousands of pieces of pottery during decades of data-gathering—sometimes under extreme social and physical pressures. We greatly appreciate the privilege of working through and building upon such hard-won data, however, any factual misapplication of the data must be our own responsibility.

Ralph E. Hendrix
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October 14, 1996

Chapter 1:

Researching Pottery Morphology

Several factors make pottery an especially useful agent for studying the ancient past of Transjordan. First, clay pottery broke easily and broke often. Second, due to its stone-like firing, pottery has remained “an important part of the archaeological record for millenia” (MacDonald 1996, personal communication). Third, because pottery was constantly being replaced, the characteristics of pottery vessels changed over relatively short periods of time—in much the same way as automobile body styles or clothing fashions change. Fourth, these morphological changes in pottery are easily recognizable and can be traced through the archaeological record. Fifth, since pottery morphology is directly associated stratigraphically with other aspects of the ancient culture, trained archaeologists have a direct window on the culture and chronology of the ancients. Pottery analysis therefore becomes an avenue for studying broader aspects of the culture.

William G. Dever has identified at least seven specific contributions which pottery analysis can provide, in addition to chronology:

- (1) shifts in settlement type and distribution;
- (2) continuity and change in local cultures;
- (3) the degree of isolation or contact with other cultures;
- (4) the level of technology;
- (5) social structure, stratification in particular;
- (6) subsistence, including adaptation to the environment and trade; and, not least,
- (7) shared aesthetic and religious traditions (1995: 204).

As the study of pottery broadens and new methods applied, more contributions of pottery analysis may be found, but all of these contributions are based on a fundamental sequence or “typology” of pottery.

Beginning with Sir Flinders Petrie in Egypt and at Tell el-Hesi in the 1890s, archaeologists have taken advantage of the physical characteristics of ancient pottery and have established a pottery typology. Ground-breaking work was done by W. F. Albright at Tell Beit Mirsim (excavated 1926-1932). A number of major excavations and survey projects during the 1970s, 1980s, and 1990s in Transjordan have detailed the pottery particular to that region. Specialists continue to refine the typology with every dig season as they understand more and more how the manufacture, surface treatment, and form of pottery changed through time. Thus the physical typology therefore provides a chronological sequence (called a "relative chronology" since it describes succession rather than specific historic dates—which would be called an "absolute" chronology).

Having established this relative chronology through careful stratigraphic excavation, archaeologists may then relate other finds (jewelry, figurines, pollen, bones, etc.) to their associated pottery, and therefore determine the archaeological period of the related finds. It is thus the relative chronology derived from pottery typology that provides the essential chronological framework to which archaeologists associate all other aspects of the past.

A thorough typology of pottery would include at least three aspects: 1) a detailed, competent analysis of the physical character of the vessel's clay and manufacture techniques; 2) a determination of the vessel's ancient function; and 3) an objective system by which to describe the form of the vessel. While none of these three aspects have been accomplished perfectly, there does exist a great deal of very useful data. One of the major challenges confronting the modern archaeologist is the rather daunting task of standardizing the body of available data in an effort to make the subject more uniform and easily understandable.

No single paradigm or publication is likely to resolve all the complexities of pottery analysis, interpretation, and description perfectly to everyone's satisfaction. Neither will this book attempt to do so. This book is simply one effort to provide a learning tool for introductory-level students, and, at the same time, provide some inertia to the process of systematization in the archaeological field.

Specifically, this book standardizes pottery terminology and provides basic introductory material for studying the typology and relative chronology of the ancient Transjordanian pottery corpus. The book is intended as a supplement for beginning students who are taking their first

class or field instruction in pottery or Transjordanian archaeology. For those more advanced, it might provide a more general reference. Where possible, the material is presented to a depth that is also useful for professionals who are approaching the subject from a cross-disciplinary perspective (such as religion teachers or historians). Thus, the book should prove a useful didactic resource as well as serve as a ready reference.

The pottery corpus under consideration is limited to published Late Neolithic through Late Islamic period pottery (whole or reconstructed whole forms) from sites which are east of the Jordan Rift Valley in the geographical area known as "Transjordan." Although the rift valley did not delineate a ceramic or cultural boundary during all periods, it is a useful demarcation for the limits of this book. Most of the pottery examples are indigenous Transjordanian forms or Transjordanian copies of imported forms. Imported forms are described where pertinent.

The research which went into this project was significant. This depth is reflected in the bibliography with its 228 entries including 206 specific pottery publications. From these publications, about 4000 whole or reconstructed whole forms yielded the 469 vessel examples which are used to illustrate the period characterizations. These examples were taken from the published reports of 55 separate Transjordanian sites and represent 23 archaeological periods.

As a pedagogical requirement, the pottery examples used in this book are limited to whole forms or reconstructed whole forms. (Reconstructed whole forms are those partial forms for which whole forms can be reasonably postulated.) The necessity of concentrating on whole forms may not be apparent at first, but it is the best way for placing a sherd into a typological context.

Without doubt, most pottery is found broken. When a sherd is found, two questions arise: "What was the whole form?" and "What is its periodization?" Other questions (function, technology, etc.) follow naturally. The experienced archaeologist, based upon years of practice, can immediately picture what the original whole form looked like. This is not so simple for those less experienced.

Although the student naturally excavates more shattered pottery than whole forms, it is impossible for that student to understand what the sherd is and of which form it was originally a part, without first knowing what the whole form looked like. This book, therefore, begins with whole and reconstructed whole forms. In order to know the whole form from

merely looking at a sherd, the whole forms must first be learned. This book therefore provides examples of the whole forms or reconstructed whole forms of each period in order to provide a context for referencing the larger corpus represented only by sherds.

In addition, pottery examples are limited to only published vessels in order to facilitate further research on the pieces if desired. Due to the incomplete publication of some important sites, it is not possible to present every whole form or reconstructed whole form which has been excavated. This limitation is recognized by those familiar with pottery study: "One only fully realizes the scarcity of published material for Jordan when one begins to look for comparative, pottery material" (Burton MacDonald 1996, personal communication).

Although pottery examples are provided for the majority of common whole forms or reconstructed whole forms currently published, there are not enough published to represent the full spectrum of all forms known to have been actually used in antiquity. Therefore published whole forms have been used as far as possible and published reconstructed forms were added where available and needed. Some forms are known to exist, but are represented only by sherds. Where neither a whole form nor reconstructed form is published (and therefore no illustration is available) a vessel description is included to the extent possible. Unfortunately, not all pottery forms are even described in the current literature, and consequently, there are surely form variations which are not treated at all in this book. None-the-less, it is the goal of this book to represent as many forms from Transjordan as possible by illustration (in the pottery examples) and/or by description (in the period characterizations). By comparing the period characterization with the diagnostic examples (rims, bases, handles, etc.) which are illustrated in chapter 2, missing forms may still be visualized to some extent even without specific illustrations.

Since extant published whole forms generally come more from tombs than from stratified excavation layers, the whole forms included in this book may be more typical of funerary corpora than typical domestic corpora. When distinctions are identified, the differences in the corpora are noted in the period characterization. While this may not be an issue for determining pottery periodization, it may impact other cultural studies.

In the process of including specific pottery examples in this book, the scholars' original periodization has been retained except infrequently, as noted. At the same time, it must be recognized that not all pottery was

originally excavated with identical precision nor were the various findspots all equally secure stratigraphically. This variability in the quality of the stratigraphy directly impacts the confidence with which the periodization based on such pottery can be held. As Lapp has noted “pottery chronology is based on stratification” (1996, personal communication). However, pending the competent re-evaluation and reinterpretation of thousands of vessel descriptions, the assignment of pottery to particular periods must remain at the level of scholarly typological consensus—notwithstanding its limitations. While the original periodization has remained largely unrevised, the authors’ original use of terminology has been standardized according to the definitions suggested in this book.

At some point, if for no other reason than the state of affairs in the archaeological discipline, there must be a tradeoff between absolute accuracy and pragmatic expediency. It is the purpose of this book to provide a beginning, a general overview, a reference for deeper analysis. It is the nature of a “beginning” to be less complex and more simplified. It is the nature of an “overview” to be less detailed—even at the expense of absolute accuracy—for what may be generally true at an introductory level may have so many exceptions at a deeper level that the generality appears inaccurate. Such is the price of an “overview.” In order to allow for the vagaries of generality, the book is designed to address certain crucial factors in the study of pottery forms—leading from simple-to-complex and from general-to-specific. Each chapter builds upon its predecessor, both in terms of cumulative knowledge and increasing complexity. The bibliography provides resources for deeper analysis.

Chapter 2: Analyzing Ancient Pottery describes and illustrates vessel components and surface treatments. It provides an introduction to the basics of vessel morphology, as well as to the relationship of the vessel parts to each other. Individual figures illustrate the various vessel parts and therefore provide a common vocabulary for vessel description.

Chapter 3: Standardizing Pottery Terminology includes a discussion of form and function in relation to naming pottery vessels. The issue of subjectivity and objectivity is explored. Standard root and branch vessel form names are provided, as is a refinement of currently-used size terminology. These standardized names and objectified size terminology are combined in a “form-based paradigm” which provides the framework for the categorization of pottery forms. Again, individual figures illustrate the root and branch vessels as well as their size variations.

Chapter 4: Summarizing Ancient Chronology provides a background to the history of periodization with notes about relative and absolute chronology (including a table of archaeological periods). The historical, political, and cultural aspects of each archaeological period is described in order to provide the context in which the ceramic corpus flourished, however, as this book is primarily pottery-, not history-driven, the chronological descriptions are not highly detailed.

Chapter 5: Characterizing Archaeological Periods describes each archaeological period in terms of its ceramic assemblage. A map of Transjordan locates the sites from which the pottery examples were taken. The description of each period includes a list of sites currently associated with the period, a synopsis of how the pottery of the period was made (technique), its aesthetic qualities (surface treatment), and a description of the particular vessels and vessel parts (forms) of that period.

The pottery examples included with each period characterization illustrate the whole form, or reconstructed whole form, pottery corpus of that period. The examples are numbered sequentially from Late Neolithic through Late Islamic. Each vessel is described on the facing page or occasionally above the figure. The majority of the pottery examples are scaled at the standard 20%. Many more pottery variations are described in the characterizations than it is practical to illustrate in the pottery examples, so it is by combining the period characterization descriptions and examples in chapter 5 with the manifold variations described and illustrated in chapter 2 that a more complete and realistic concept of the pottery assemblage for any given period might be achieved.

Glossary, Bibliography, and Index. Deeper analysis is facilitated by a glossary, a bibliography, and an index. The glossary of ceramic terms includes 329 entries and defines the basic vocabulary which is used by archaeologists in the discussion and publication of pottery. The 228 entries in the bibliography includes a complete list of the resources used in the production of this book. The index provides a quick reference to the text.

All of the material in this book is designed to facilitate a clearer and better understanding of the ancient pottery of Transjordan.

Chapter 2:

Analyzing Ancient Pottery

The analysis of ancient pottery begins with an understanding of the basic vessel parts (fig. 1). Most excavated pottery is found broken. Syro-Palestinian archaeologists call these broken pieces “potsherds” or merely “sherds.” Most recovered sherds are body sherds (“bods”) which have few

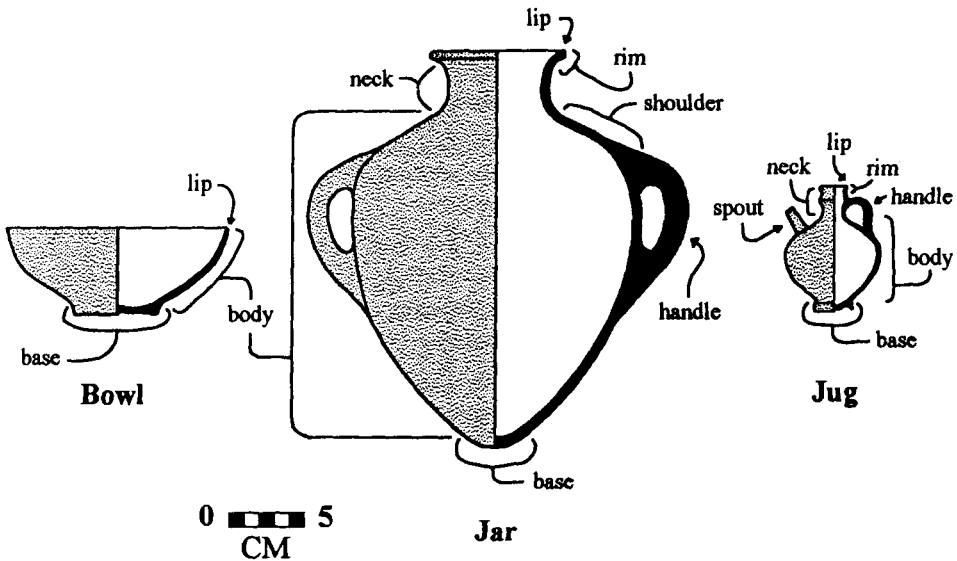


Figure 1. Parts of a pottery vessel (exterior darkened).

distinguishable characteristics since they are pieces from the side walls of the vessel which are not attached to a rim, base, or handle. Bits of bases, chipped rims, and broken handles are called "diagnostic" sherds since the archaeologist can use these pieces more easily to determine what the original whole form looked like than body sherds. Body sherds can also be "diagnostic" if they have a special surface treatment. While bods may not be as useful for establishing periodization and are seldom saved for this purpose, they may be saved by the ceramic technologist or other specialists for reasons other than to establish periodization.

The publication of pottery may involve either photographs or line drawings. Photographs, particularly color photographs, provide an excellent sense of the surface treatment. They can well illustrate the nature of clay temper and inclusions in cross-sections. However, due to expense, photographs are published sparingly and very seldom are they published in color. Drawings are used most often.

The art of drawing pottery has become somewhat standardized and a basic pottery drawing includes the whole or reconstructed vessel, detailed drawings of certain cross-sections (lip, handle, base, etc.), and a scale (normally 20% of the original). The pottery drawings in this book follow standard drawing conventions, although other publications may vary the style somewhat according to the idiosyncrasies of the archaeologist or publisher.

What does a pottery drawing look like? How is it read? Pottery is drawn in cross-section and exhibits several details: the overall shape of the vessel; the thickness of the vessel wall; and the shape of the parts of the vessel; as well as surface treatment (see fig. 2). The vessel is drawn as if cut in half down the middle. The left side shows the exterior of the vessel (along with any exterior surface treatment) and the right side shows the interior of the vessel (also, along with any interior surface treatment). Painting, slip, and glaze are indicated by grey tones. If the surface treatment has been reconstructed, the reconstructed portion may be represented by a lighter grey than the actual surface treatment.

The right edge of the drawing is a cross-section cutting through the lip, rim, neck (if any), handle (if present), body wall, and base. (This cross-section is what indicates the lip profile, the rim inflection, the rim profile, and the body wall profile—which are explained below).

If the vessel was found whole, all the exterior lines of the drawing will be solid. Missing or reconstructed parts are indicated by dashed lines.

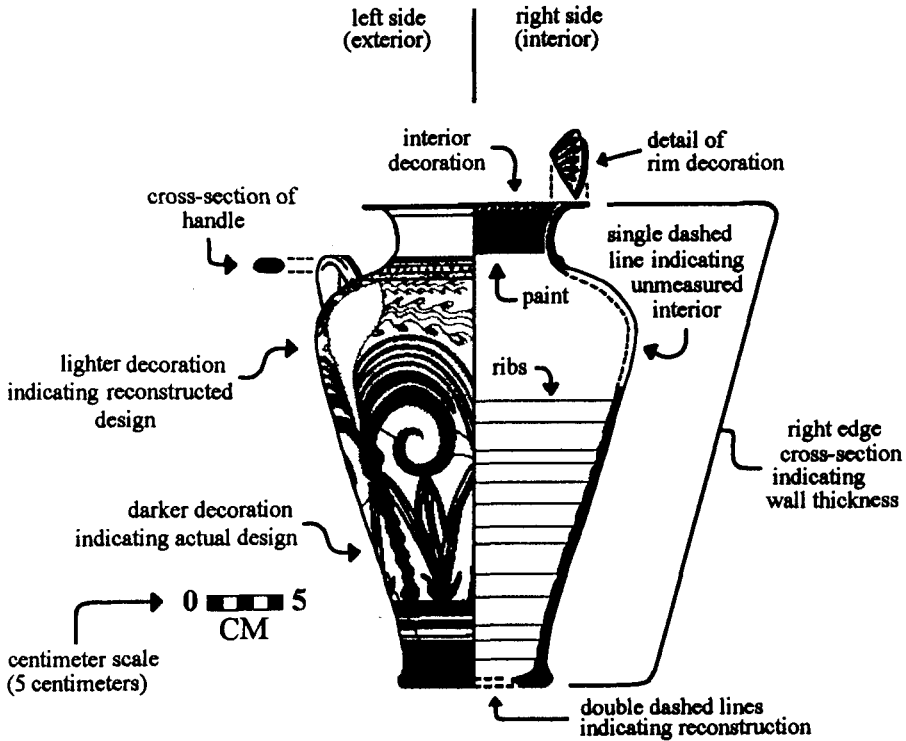


Figure 2. A typical pottery drawing (with annotations).

The thickness of the vessel wall is shown by a solid, black profile along the right edge of the vessel which indicated the actual (measured) thickness of the vessel cross-section. If the vessel exterior is known, but the interior is estimated, the outer line of the cross-section is drawn solid, but the inner edge is dashed, hence, a single dashed line along the interior of the right vessel wall indicates an estimated wall thickness. If the vessel was found incomplete, but the original can be hypothesized (based on the curvature of the extant pieces and the experience of the archaeologist), both lines of the cross-section are drawn with dashed lines. Therefore, a double dashed line along the right edge of the drawing indicates the vessel is incomplete and the double-dashed section is "reconstructed." Cross-sections of handles are provided beside the handles. Top views and special sections are provided of bases, lips, rims, and other special features as necessary.

The standard scale reduction used in this book is 20% of the full-

size (that is 1:5). This 20% reduction is found in many modern site reports. Some larger forms such as vats and storage jars may be published at 10% if necessary. A very few extremely large pieces may be published at 5%. Each vessel illustrated at a reduction other than 20 % has its own scale.

Vessels are described in terms of the nature of their lips, rims, walls, and bases (also necks and spouts, if present). Lip/rim descriptions are combined with (1) wall profile, (2) rim inflection, (3) rim profile, and (4) lip profile. A form described as "a cylindrical vessel with a vertical, thickened rim and a flattened lip" indicates that it has a "cylindrical" (wall profile), a "vertical" (rim inflection), a "thickened" (rim profile), and a "flattened" (lip profile). The difference between lips and rims, profiles, and

Lip, Rim, and Wall Terminology			
Lip Profiles (cross-section)	Rim Inflections (angle to body)	Rim Profiles (cross-section)	Wall Profiles (cross-section)
Angular	Angular	Doubled	Biconical
Flattened	<i>everted</i>	<i>folded</i>	<i>equal</i>
Rounded	<i>inverted</i>	<i>hooked</i>	<i>unequal</i>
Squared	Bi-angular	<i>pendant</i>	Carinated
Thickened	<i>everted</i>	Flattened	Conical
Thinned	<i>inverted</i>	<i>angular</i>	<i>V-shaped</i>
	Curved	<i>everted</i>	<i>Λ-shaped</i>
	<i>incurving</i>	<i>inverted</i>	Cylindrical
	<i>outcurving</i>	<i>horizontal</i>	<i>horizontal</i>
	Straight	<i>everted</i>	<i>vertical</i>
	<i>sloping</i>	<i>inverted</i>	Globular
	<i>vertical</i>	<i>τ-shaped</i>	<i>hemispherical</i>
		Offset	<i>ovoid</i>
		<i>everted</i>	<i>horizontal</i>
		<i>inverted</i>	<i>vertical</i>
		Pinched	<i>upright</i>
		<i>cup-shaped</i>	<i>upside down</i>
		<i>pinched</i>	<i>spherical</i>
		<i>quatrefoil</i>	Piriform
		<i>trefoil</i>	<i>upright</i>
		Simple	<i>upside down</i>
		Thickened	
		<i>external</i>	
		<i>symmetrical</i>	
		<i>internal</i>	

Table 1. Lip, rim, and wall terminology (for alternative terminology, see the text).

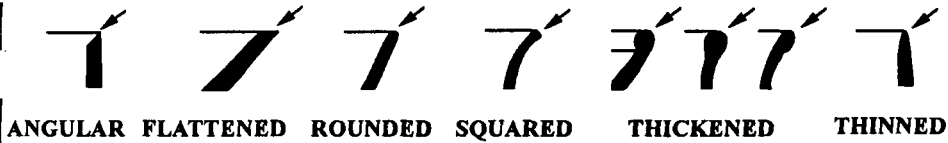


Figure 3. Lip profiles (cross-sections).

stances are somewhat ill-defined in current usage. Selecting the correct descriptive term is a skill that comes with practice, however, some clarifications are described below (see also table 1 and figs. 3-6).

Every vessel has a lip because the “lip” is the very edge tip of the vessel opening. Many vessels have “rims,” that is, a modeled section of the vessel wall between the lip and the body (or between the lip and the neck on jars and jugs). Every rim always has a lip at its edge. Since the determination of where a lip ends and a rim begins is somewhat subjective (resulting in many varying published descriptions) it is helpful to classify distinctive aspects of their form and thereby provide a common base for describing them. The following classification of vessel lips and rims defines “lip profiles,” “rim inflections,” “rim profiles,” and body “wall profiles.”

Lip profiles (cross-sections) vary in style according to period and vessel form (see table 1 and fig. 3). They may be angular (if not perpendicular to the axis of the wall), flattened (parallel to the base), rounded, squared (perpendicular to the axis of the wall), thickened, or thinned (aka: beveled or peaked). The lip may be on the edge of a body wall (as on most bowls) or on a rim/neck extension of the body wall (as on most jars and all jugs). A vessel on which the lip sits directly on a globular and closed vessel wall is called “holemouth” (the “mouth” of the vessel is a “hole”).

“Rim” is the general term for that modeled section of a vessel wall located just below the lip. In published descriptions, “rim” is often confused with the “lip.” There are two aspects of the rim that bear directly on the vessel description: rim inflection and rim profile. Rim stance, a third aspect, is the angle of the rim relative to the vessel opening. This measurement is made by archaeologists to determine the basic orientation of the original vessel. Many archaeologists use “rim stance” when they mean “rim inflection.” The difference will be explained below.

Rim inflection (table 1 and fig. 4) describes the angle at which the rim joins the body wall (or neck on jars and jugs). Inflection is not to be

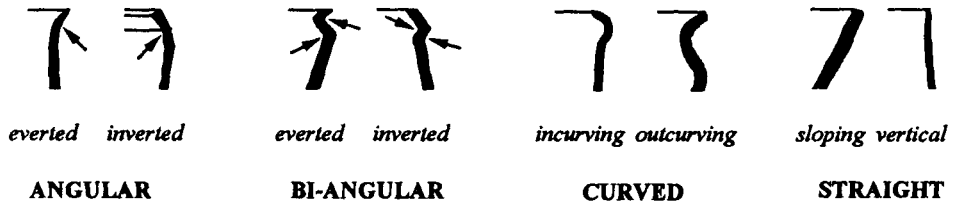


Figure 4. Rim inflections (angle of rim-to-body).

confused with stance. The angle at the top of the rim (rim-to-opening) is stance; the angle at the bottom of the rim (rim-to-neck/body) is inflection.

Rim inflections are angular, bi-angular, curved, or straight. Angular rim inflections have a single inflection point, either out from the vessel wall (*everted*), or into the vessel (*inverted*). Bi-angular rims (aka: articulated) are those rims with two inflection points (appearing similar to carination). The primary inflection point is at the joint between the rim and the neck or body. The secondary inflection point (from whence the name "bi-angular" derives) is located between the primary inflection point and the lip. Bi-angular rim inflections may be *everted* (if the primary inflection is inward and the secondary point inflects outward) or *inverted* (if the primary inflection is outward and the secondary inflection is inward). That is, the name of the bi-angular rim inflection derives from the direction of the topmost (secondary) inflection: if outward, then *everted*; if inward, then *inverted*. Curved rim inflections may be *incurving* (aka: bowed or concave) into the vessel or *outcurving* (aka: convex, flaring or "S"-curved) outside the vessel. A curved rim inflection has no specific point of inflection, but describes an arc. Straight rim inflections indicate the rim is a direct continuation of the body wall profile, with no measurable angle of inflection. As such, there may be no rim or at least no distinguishable rim apart from the body or neck. Straight rim inflections may be *sloping* (aka: splayed) or *vertical* (aka: upright).

The rim shape, called the rim "profile," is best described in cross-section (table 1 and fig. 5). It describes the modeling of the rim excluding the lip or the neck or the remainder of the body wall. Often the rim profile is nothing more than thickening or flattening, etc., immediately below the lip.

Rim profiles may be doubled, flattened, offset, pinched, or thickened. Doubled rim profiles may be either folded, hooked, or pendant

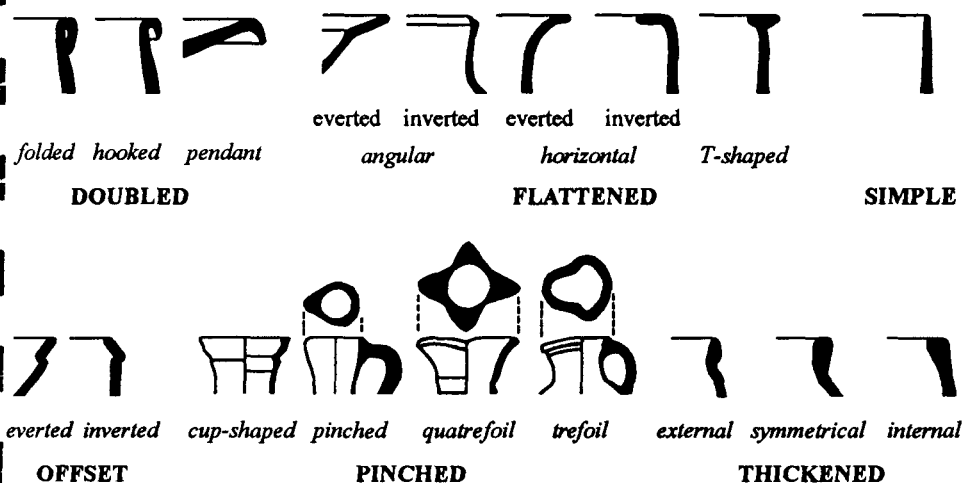


Figure 5. Rim profiles (cross-sections).

outside the vessel. Folded rim profiles are doubled to the extent that the fold actually or almost touches the vessel wall. Pendant rim profiles hang down with the edge of the rim pointing to the base, but with a gap between the doubled portion and the vessel wall. Flattened rim profiles may be angular, horizontal, or T-shaped (aka: hammer-head). Both of the first two may be everted or inverted. A T-shaped rim profile is thickened both outside and inside with inflection points on both the outside and inside. Offset rim profiles, either everted or inverted, show cross-sections where the rim is set apart from the vessel wall. Pinched rim profiles (aka: pushed or squeezed) are designed either for pouring or for holding a wick (in the case of some lamps). Jug and lamp rims may be cup-shaped, pinched, quatrefoil (four protrusions), or trefoil (three protrusions). A simple rim inflection shows no particular articulation. Thickened rim profiles may be external, symmetrical, or internal. Thickened rims are also called “knob” or “bulbous.” “Rilled” and “ridged” rims are thickened rims with exterior modeling.

The rim “stance” is the orientation of a broken rim sherd to the original whole vessel. Therefore, rim stance is determined by the angle of the rim relative to the horizontal plane across the vessel opening. Rim stance is not to be confused with rim inflection (the angle of the rim relative

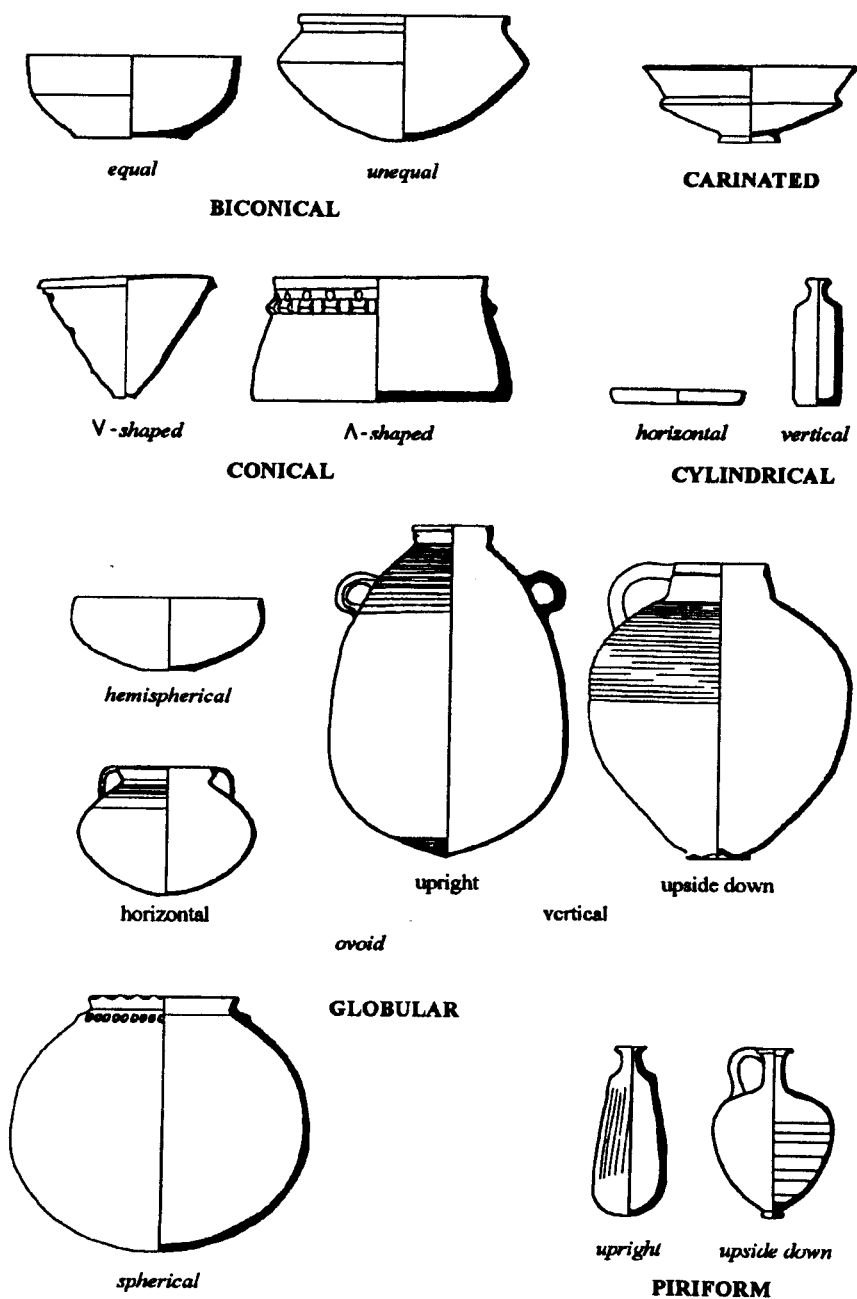


Figure 6. Wall profiles (cross-sections). Examples not scaled to each other.

to the body or neck). In published descriptions, rim stance is often used to describe a mixture of aspects of the rim inflection and wall profile.

The rim stance angle measurement is used to estimate the orientation of the whole form body wall profile, and hence, the "stance" of the original vessel. The rim stance is determined from the diagnostic rim sherd, by turning it upside down and rocking it on a flat surface to find its most stable position. This position represents the (inverted) stance of the rim as it was on the original vessel (assuming the plane of the opening was parallel to the floor on the original piece). In practice, the corpus of ancient pottery includes many vessels which were not exactly horizontal or symmetrical, even when new, so this derived "stance" may be hypothetical.

Body walls are described in terms of "profile" (cross-section). Vessel wall profiles can be generally described as biconical, carinated, conical, cylindrical, globular, and piriform (table 1 and fig. 6). These describe the general shape of the whole piece. Biconical bowls are formed by two cones, one atop the other, and may be equally or unequally divided. Carinated bodies have a unique pattern of conical portions in a very angular "S" curve. Conical bodies may be V-shaped ("vee" shaped) or \wedge -shaped ("delta" shaped). V-shaped conical bodies are broader at the opening and narrower at the base. \wedge -shaped conical bodies are just the opposite, having broader bases than openings. Cylindrical bodies with straight-sided profiles may be horizontal (if wider than tall) or vertical (if taller than wide). Globular bodies may be hemispherical, ovoid, or spherical (depending on how symmetrical they are). Hemispherical globular bodies are half-round. Ovoid globular bodies may be horizontal (if wider than tall) or vertical (if taller than wide). Vertical ovoid bodies may be upright (if wider at the bottom than at the top), or upside down (if wider at the top than at the bottom). Spherical globular bodies are round. Piriform (pear-shaped) bodies may be upright (if narrower at the top and wider at the base) or upside down (if wider at the top and narrower at the base).

Diagnostic sherds include bases, handles, necks, and spouts (see table 2), although bods may be diagnostic if they have characteristic surface treatment. Generally though, when archaeologists speak of "diagnostic" sherds, they most often mean bases, handles, necks, and spouts.

Bases (table 2 and fig. 7) include flat, curved, elevated, omphalos, and ring styles. Flat bases may be concave, disk, or flat. "String-cut" bases are flat bases cut from the clay or separated from the potter's wheel by passing a string at the bottom of the base. Curved bases may be pointed or

round. Elevated bases may be footed, knob, loop, pod, ring, stump, or trumpet. Omphalos bases are deeply concave. Ring bases may be simply a ring or split ring style.

Base, Handle, Neck, and Spout Terminology				
Bases	Handles	Handle Placement	Necks	Spouts
Flat	Bar	Rim-to-rim	Conical	Angular
<i>concave</i>	Knob	Rim-to-shoulder	<i>V-shaped</i>	<i>curved</i>
<i>disk</i>	Ledge	Neck-to-shoulder	<i>Λ-shaped</i>	<i>cylindrical</i>
<i>flat</i>	<i>envelope</i>	Shoulder-to-body	Curving	<i>straight</i>
Curved	<i>plain</i>	Shoulder	<i>bicurving</i>	<i>trumpet</i>
<i>pointed</i>	<i>wavy</i>	Body	<i>incurving</i>	Vertical
<i>round</i>	Loop		<i>outcurving</i>	<i>pillar</i>
Elevated	<i>horizontal</i>		Cylindrical	
<i>footed</i>	<i>flat</i>			
<i>knob</i>	<i>plain</i>			
<i>loop</i>	<i>wishbone</i>			
<i>pod</i>	<i>vertical</i>			
<i>ring</i>	<i>flat</i>			
<i>stump</i>	<i>stirrup</i>			
<i>trumpet</i>	<i>strap</i>			
Omphalos	<i>round</i>			
Ring	<i>basket</i>			
<i>ring</i>	<i>car</i>			
<i>split ring</i>	<i>elliptical</i>			
	<i>grooved</i>			
	<i>plain</i>			
	<i>stranded</i>			
	<i>double</i>			
	<i>triple</i>			
	<i>twisted</i>			
	Lug			
	<i>horizontal</i>			
	<i>pierced</i>			
	<i>plain</i>			
	<i>pointed</i>			
	<i>vertical</i>			
	<i>pierced</i>			
	<i>plain</i>			
	Tubular			

Table 2. Base, handle, handle placement, neck, and spout terminology.

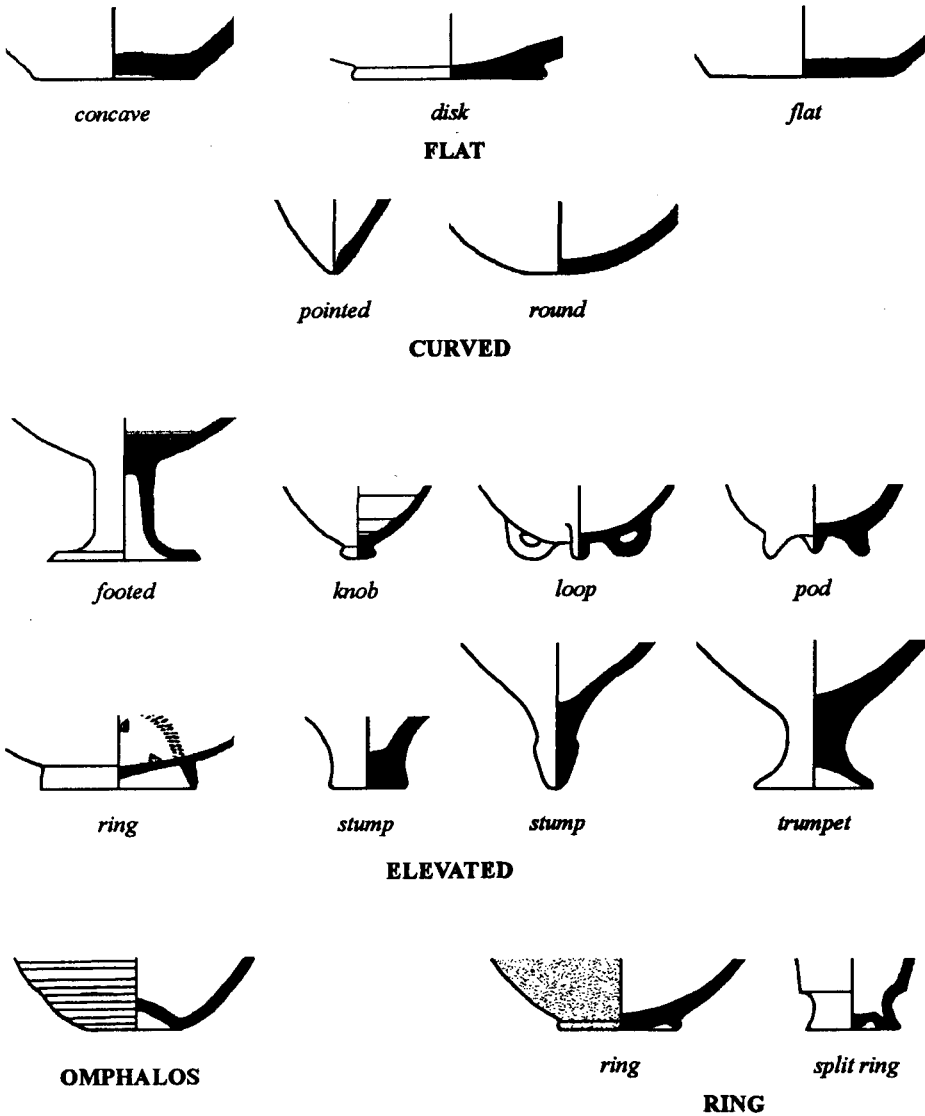


Figure 7. Base profiles (cross-sections).

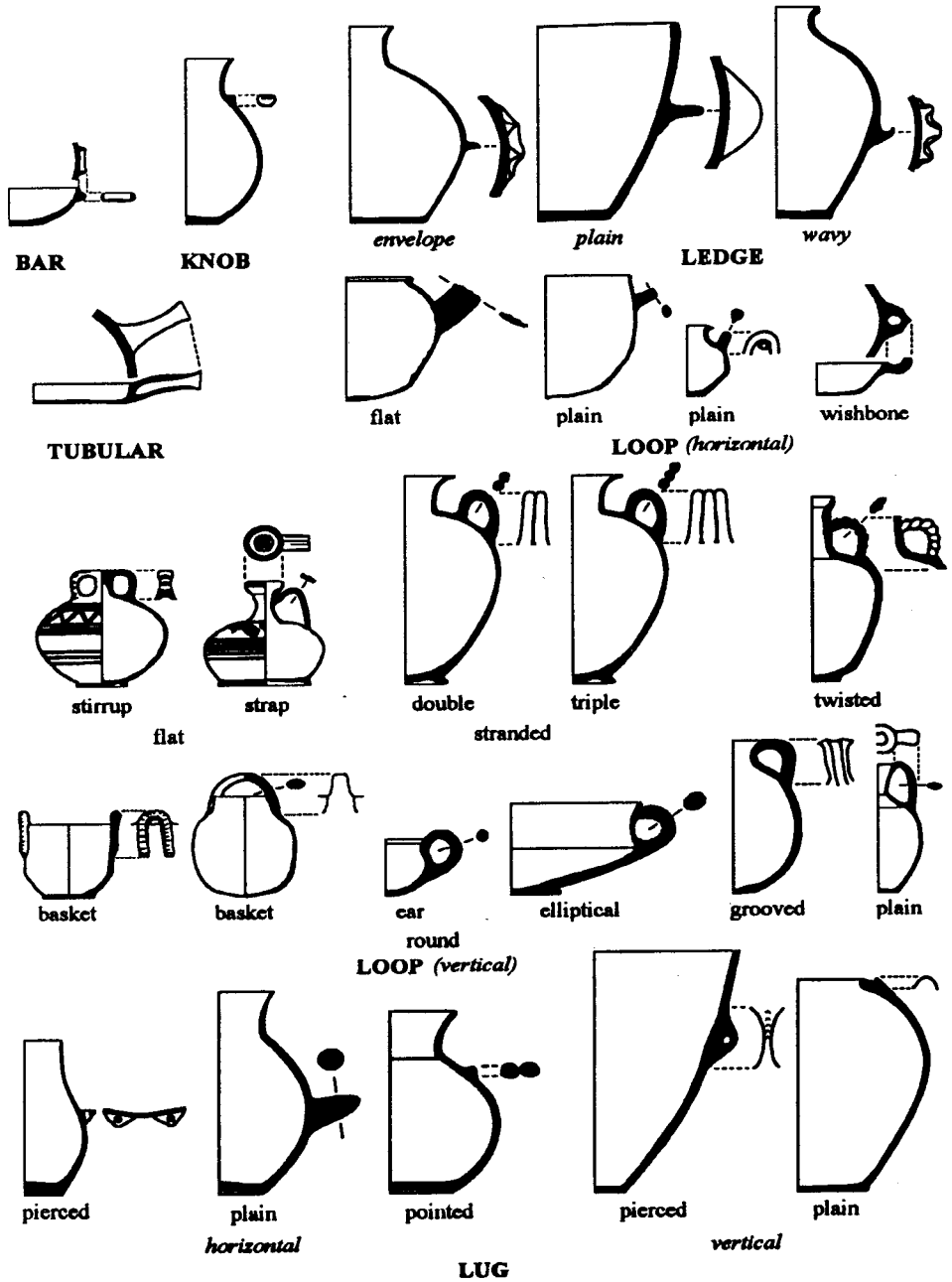


Figure 8. Handle styles.

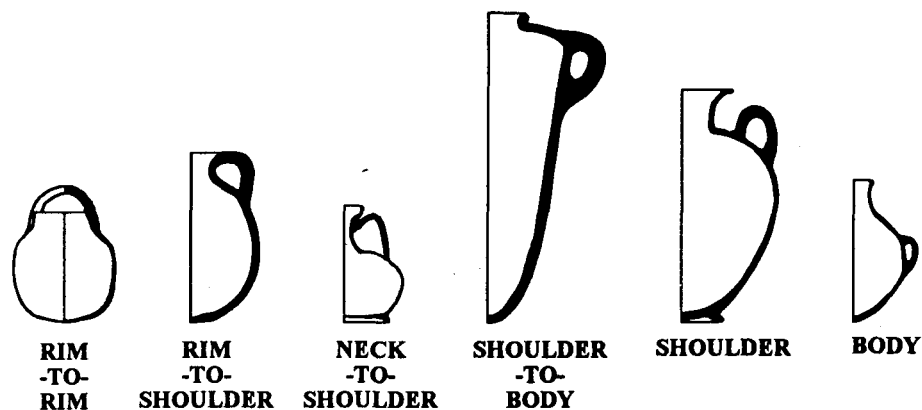


Figure 9. Handle placements.

Pottery handles (table 2 and fig. 8) include bar, knob, ledge, loop, lug, and tubular styles. These may vary in terms of position and placements. Bar handles curve horizontally around the vessel and may be perforated. Knob handles are generally conical clay appliqués. They may be functional, decorative, or a combination. Ledge handles are horizontally oriented and may be envelope, plain, or wavy (pie-crust or scalloped). Loop handles may be horizontal (flat, plain, or wishbone in style) or vertical. Vertical loop handles may be flat (stirrup or strap), round (basket, ear, elliptical, grooved, or plain), stranded (double or triple), or twisted. Lug handles may be horizontal (pierced, plain, or pointed) or vertical (pierced or plain). Tubular handles are found primarily on frying pans and are made of a tube of clay, one end attached to the vessel wall and the other end open, possibly for the insertion of a handle.

Handle placement (table 2 and fig. 9) may be anywhere on the body or neck, but is generally above the mid-point of the body. The most common placements are across the rim from rim-to-rim (side-to-side), from the rim-to-shoulder, from the neck-to-shoulder, from the shoulder-to-body, on the shoulder, or on the body. Curious examples of handle placement occur in many periods with interesting combinations of handle styles and placements on the same vessel.

Necks profiles (table 2 and fig. 10) are conical, curving, or cylindrical tubes that off-set the lip and rim from the vessel body. Conical

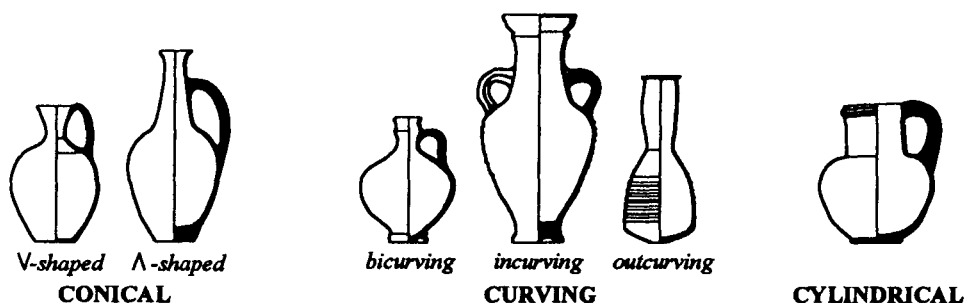


Figure 10. Neck profiles (cross-sections). Examples not scaled to each other.

necks may be V-shaped or Λ -shaped. Curving necks may be bicurving, incurving, or outcurving. Cylindrical necks have parallel sidewalls. Necks are found on all jugs (by definition: a jug is a necked vessel designed for pouring), and on most jars and a few bowls. The neck may include aesthetic as well as functional aspects: be tilted (as in the case of a "bilbil"), have a pouring lip (as on many jugs), or be designed for attaching a closure (as on some bottles and storage jars). A neck always has a lip (although it may, or may not, have a rim *per se*).

Spouts (table 2 and fig. 11) are pouring tubes which protrude from the vessel body and are often found in addition to an opening on top of the vessel. Spouted vessels may be found in bowls, jars, and jug forms. Spout shapes may be angular or vertical. Angular spouts styles include curved, cylindrical (aka: gutter), straight, or trumpet (with an outcurved or flared opening). Vertical spouts include the pillar variety.

Surface treatment categorization is another major tool archaeologists use to analyze ancient pottery. Essentially, surface treatment includes any manipulation of the pottery vessel on the surface of the clay, such as adding clay or making scratches or painting, etc. Such treatment may be for utilitarian reasons or for decoration. Often there was a combination of purposes. Some scholars may use "treatment" to connote utilitarian purposes while using "decoration" in the aesthetic realm, however, the division between function and aesthetics is often too blurry to delineate. "Surface treatment" is used in this book to describe any manipulation of the clay surface, no matter the intent whether functional or aesthetic or a combination.

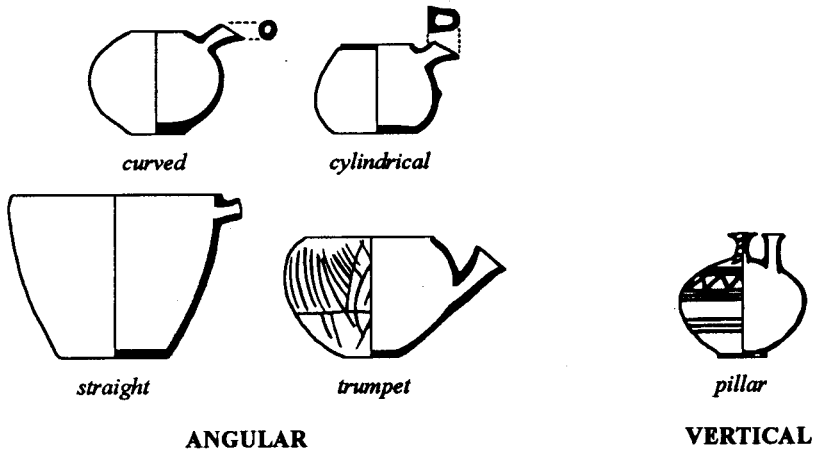


Figure 11. Spout styles (cross-sections). Examples not scaled to each other.

There are a very great many types and styles of surface treatment. A detailed study goes beyond the scope of this introduction, however, surface treatment can be broadly divided into categories of liquid and plastic treatments (see table 3). Often subtle differences in color, method of application, or location of surface treatments serve to distinguish vessels of different periods (see the period characterizations in chapter 5).

Surface Treatments		
Liquid Treatments	Plastic Treatments	
	On the Clay	In the Clay
Glazing Painting Slipping Washing	Appliqué Burnishing Molding	Excising Impressing Incising Molding Puncturing Smoothing

Table 3. Surface treatment terminology.

Liquid treatments included glazing, painting, slipping, and washing. As with ware colors, the color of surface treatments is best described using the Munsell system (see the glossary).

Glazing was the application of a particular mixture of pigments prior to firing, or between multiple firings, which turned glassy in high heat. In ancient Transjordan, the technology was found only in the Islamic periods and on imported Chinese porcelains. (Attic ware "glaze" is not vitreous and is therefore more properly a lustrous paint).

Painting, slipping, and washing were very common liquid surface treatments through most archaeological periods in Transjordan. Painting was accomplished by applying a thin mixture of pigmented clay in particular designs over the surface of the clay prior to firing. Painting was typically monochrome (one color), bichrome (two colors), or polychrome (three or more colors). Slipping was the application of a similar mixture of pigmented or unpigmented clay over large sections of the clay surface. Slip was generally applied prior to firing. A "secondary slip" was sometimes applied between a first and second firing, especially with glazed pottery. A "self" or "self-same" slip was simply a slip of the same clay as the vessel itself. Lustrous slip was always applied prior to firing and should not be confused with true glazing. "Matte" painting or slip describes a non-glossy or "flat" finish. Washing was similar to slipping, however the clay mixture was very thin and the wash was applied after firing.

Plastic treatments were manipulations of the vessel clay itself and can be separated into things done *on the clay* and things done *in the clay*. Things commonly done *on the clay* included appliqué, burnishing, and molding. Things often done *in the clay* included excising, impressing, incising, molding, puncturing, and smoothing. Each of these items possess numerous variations in style and subtypes. The glossary defines some variations (see Surface treatment). The following is a brief description of the most common plastic treatments.

Appliqué included clay applied on the vessel surface (either inside or outside of the vessel). These were designed by the potter before applying them to the exterior of the vessel wall. Burnishing was accomplished by scraping the surface of the clay with a smooth tool prior to firing. Various types of burnishing resulted depending on the pattern or direction of the burnishing strokes, whether done while the vessel was on the potter's wheel, etc. Burnishing oriented the surface clay particles sealing the clay surface and also producing a polished mark. Burnishing, especially in combination with slipping, was highly characteristic of particular periods and therefore, is diagnostic. Excising resulted when the potter used a tool to remove clay from the vessel wall. Incising differed from excising in that the

surface was merely scratched or grooved, simply pushing the clay material aside. Impressing was accomplished by pushing a tool or finger into the surface of the clay without removing any material. Molding was done both by hand (in terms of applying clay and then forming it) or by the mechanical means of actually pressing a mold onto the clay. (Hence molding may be done either *on* or *in* the clay). Puncturing involved pushing a hole completely through the clay wall of the vessel and was commonly limited to incense burners and strainers, as well as lug handles on many different vessel forms. Smoothing (or "wet" smoothing), like burnishing, was accomplished by rubbing the vessel with a mechanical object, usually a piece of cloth, prior to firing.

Specific surface treatment motifs, media, colors, etc., varied considerably according to culture and archaeological period. Because each ancient vessel was "custom-made" even similar surface treatments vary according to the skill (or whim) of the ancient potter. Some surface treatments are described in the period characterizations and illustrated in the pottery examples (chapter 5). Bear in mind that each vessel was different to a greater or lesser degree. While various surface treatments were diagnostic for particular periods, no two vessels were exactly the same.

This brief introduction to pottery illustration, vessel parts, and surface treatments provides a basic foundation for interpreting published pottery illustrations and understanding some of the general aspects of their descriptions. It follows that a similar introduction to basic vessel morphology (shapes) is also in order.

Chapter 3:

Standardizing Pottery Terminology

The Problem of Subjectivity

Archaeologists, ceramicists, ethnoarchaeologists—specialists of every stripe use a multitude of terms, some common and some technical, to describe and characterize ancient pottery. There are terms to describe every detail of every part of every aspect of the pottery vessel—form, shape, material, manufacture—each with its own set of categories and traditions. Unfortunately, since the terminological tradition has grown along with the archaeological discipline itself, this host of terms is not always used consistently or accurately (see Franken 1969, especially pp. 67-69).

The issue of standardizing the terminology used in describing the vessel material and manufacture (color, inclusions, levigation, construction technique, firing, etc.) is well beyond the scope and capabilities of this book, however there is an even more basic problem which can be addressed, that is, assigning objective names to vessels. After all, what is the exact difference between a “large cup” and a “small bowl?” Is a “krater” really an indigenous Transjordanian form or is it exclusively a Greek wine vessel? Did the ancients really brew tea in their “tea pots?” These questions focus on the role of form and function in the process of naming vessels.

Traditionally, chief archaeologists or ceramicists named pottery vessels in accordance with their own perspective, based on their own specialty, experience, and culture—perpetuating and adding to archaeological tradition. In current pottery publications, vessel names are often selected from a combined glossary of ancient, cultural, regional, modern,

morphological, and ceramic terms. With the proliferation of excavations and published reports, this eclectic system is proving too subjective and cumbersome. Hundreds of archaeologists describe thousands of vessels from scores of excavations, often with subjective and imprecise terminology. Of course, fundamental to any choice of names is "why choose that one name in particular?" In other words, assuming the archaeologist has decided to use English names and has chosen "cup" to name the vessel, why was "cup" chosen and not "small bowl"? Was there an objective reason to choose one and not the other?

Different specialists have different primary concerns, and hence, different naming schema. Ethnoarchaeologists may be more interested in the ancient manufacture or use (function) of a vessel as a window on how life was lived. Staff archaeologists who read pottery in the field may be more interested in typology based on shape (form) as a way of determining relative chronology. Many are interested in aspects of both function and form. These various interests have resulted in a hybrid vocabulary which blends functional names (cup, bowl, etc.), sizes (small, medium, large, etc.), and shapes (carinated, everted, etc.). Such terminology is useful to a degree and has the inertia that comes with tradition, however it is already proving to be frustratingly imprecise as specialists compare site reports, and will present increasing problems in the future—especially as the field of pottery analysis becomes more computer oriented. Databases and comparative diagnostic programs will demand more specific terminology. Can vessel names be standardized in some objective manner? Two basic options seem obvious: function-based names (like "drinking cup" or "serving dish") or form-based names (like "open" or "closed," and "small" or "tall").

Function-based Terminology

Each pottery piece was constructed in ancient times to perform a function. No matter what name or category modern archaeologists assign a vessel, in ancient times, the vessel was originally simply a tool meant to perform a utilitarian or aesthetic task. (For an excellent and detailed study of vessel function, see Rice 1987: 207-243). Since much of the recovered pottery appears to be analogous with modern vessels, it is natural that specialists would assign modern names to the pieces. This is convenient, perhaps inevitable, but fraught with obvious problems in terms of subjectivity and misinterpretation—especially if assigned by a non-specialist.

The function of some ancient vessels may be fairly accurately

interpreted (as in the case of large storage vessels), or quite well known (as in the case of sugar pots and jars). But mundane functional terminology like “cup” or “bowl” may be derived more from how the piece appeared to be used than any concrete knowledge about its actual use. (Strainers and censers look remarkably alike yet one was used to sift while the other was used to burn incense. Is the presence of soot, or its lack, always an indisputable method of distinguishing between the two?)

It is sometimes only because of an apparent similarity with modern pottery or modern use that a function (and hence a function-based name) can be assigned to an ancient piece of pottery. (It *looks* like a cup, therefore it *must be* a cup). Conscientious specialists may be careful to include some indication of the relative imprecision of such interpretive assignments of function, however once published in a pottery plate vessel description or in more popular media, the name becomes indelibly fixed.

The problem is clear: a modern name may attach a functional idea to an ancient vessel which that vessel never possessed—and once attached, is very difficult to remove. While current imprecision or subjectivity should not dissuade the modern ethnoarchaeologist from attempting to determine the ancient use of vessels, these reservations should give pause to any use of functional names as standardized pottery terminology.

In order to minimize miscommunication through subjectivity, and in order to standardize terminology for the purposes of database analysis, there must be a distinction between a morphological description of a particular ceramic piece (its form) and the vessel’s ancient use (its function). In much the same way as biologists use both technical and common names for flora and fauna, the archaeologist might well use technical (form-related) terms and common (function-related) names for pottery.

Form-based Paradigm

One would expect that a form-based standardization scheme has already been presented sometime in the long history of modern archaeology. To date, the very subjective relationship between form and function has not been generally defined, nor has a common form-based organization been generally accepted. Modern published examples of objective form criteria are rare and those in existence are limited to a particular site or corpus, to a particular vessel, or do not address certain aspects of the larger problem. By their very existence, they do, however, acknowledge the need for some resolution to the issue of form name systemization. Although standard

morphologically-based vessel names have been available to specialists for years (see Joukowski 1980) and have, no doubt been used religiously by some, by-and-large, they have not sifted down to the level of site reports.

Generally speaking, both student and scholar alike have been left with inexpertly and subjectively-conceived functional terminology. Technical terminology (by its nature) is too-often laborious or complicated and is therefore not very easily used. Such terminology is consequently seldom adopted and easily abandoned. The challenge is to produce a simple system with simple terms simply defined. In this book, common vessel names have been standardized by associating them with specific (well-known) shapes and specific mathematical dimensions and proportions. The goal is to provide a simple, precise technical terminology for pottery analysis. It is called the "form-based paradigm."

The form-based paradigm objectifies pottery terminology related to vessel size and vessel name. It allows specialists to objectively determine whether a particular vessel is a "cup" or a "bowl," and gives mathematical definition to currently vague concepts such as "small" or "deep."

The form-based paradigm is simple. "Form" is a combination of shape and size (that is $FORM = SHAPE + SIZE$). Shape is described by terms such as "open" or "closed" (both defined mathematically) along with other modifiers describing specific aspects of the vessel (the diagnostic parts described in chapter 2). Since "open" and "closed" are not very user-friendly, common names have been selected: "open" is always a bowl form, "closed" is always either a jar or a jug form. Size is described in mathematical terms of diameter and depth (for bowls), or of height (for jars and jugs). Objectifying shape and size provides "user-friendly" technical terminology for learning, discussing, and analyzing pottery.

In order to anchor the paradigm as much as possible in the tradition of which specialists are already a part, the paradigm has been based on about 4000 published whole vessels in 206 pottery reports from 55 Transjordanian sites representing 23 archaeological periods. These vessel graphics and descriptions were analyzed in order to determine how specialists have already been using traditional names (like "cup" or "plate"), and what mathematical dimensions they have been corresponding to terms like "small" or "deep." The definition of form-based terms used in this book are therefore based on the results of many hours of painstaking comparison of published reports. Therefore, the form names (bowl, jar, and

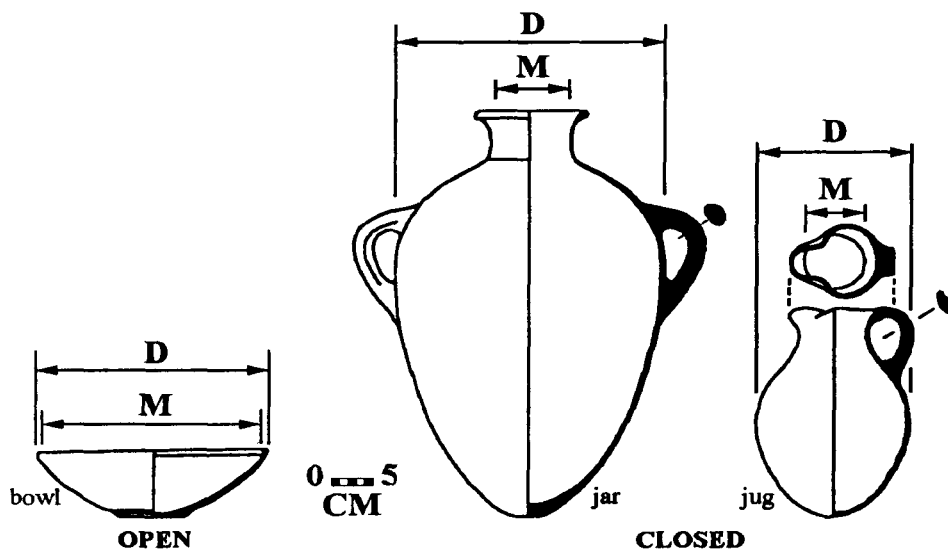


Figure 12. Open and closed vessel forms. (D = maximum outer diameter; M = minimum mouth diameter.)

jug) in this paradigm are defined morphologically (rather than functionally), the dimensional terms (small, deep, etc.) derive their mathematical standardization directly from current published use. Still, it should be understood that the specific dimensions, percentages, and categories offered in the paradigm represent an initial move toward the goal of clarifying vessel name terminology. Analysis and critique of this organization is encouraged, welcomed, and can only result in an even more usable terminological system. In the interim, the current paradigm provides a workable tool.

Explanation of the Form-based Paradigm

The first aspect of form to be considered is shape (see fig. 12). Shape is either "open" or "closed." These are determined by a comparison of the dimensions of the vessel opening with its body. The measurement of the "minimum mouth diameter" is the inner diameter of the narrowest constriction of the vessel opening (inside its mouth or neck, etc.). The measurement of the vessel width at the widest point of its outer diameter is its "maximum diameter." An "open" vessel is one, the minimum mouth diameter of which is 50% or more than the maximum diameter of the

vessel. A "closed" vessel is one, the minimum opening of which is less than 50% of the vessel's maximum diameter. Open vessels are always "bowls." Closed vessels may be either "jars" or "jugs" (depending on whether the vessel possesses a pouring lip. If so, then the vessel is a jug. If not, then the vessel is a jar.) Because the root form names are defined on the basis of objective criteria, they can be used as the "technical" name for the vessel. Although "bowl," "jar," and "jug" carry functional connotations in common parlance, used here as objective technical terms, these root form names describe the form of the vessel only and are not intended to denote the ancient function of the vessel.

Virtually all vessels can be divided into these three basic categories which are called "root" forms: bowl, jar, and jug. In terms of vessel analysis, either by human or computer, the determination of the root form is the initial step in describing the vessel. (Specialized pieces—such as funnels, lamps, lids, and spoons—are categorized as "miscellaneous vessels" in the period characterizations and are not systematically described or illustrated.)

Each root form has "branch" sub-forms. Branch forms are equivalent to the "common" name of the vessel and are more closely associated with possible functions of the vessel. At the same time, branch names are not subjective, but are based on specific objective criteria relating to shape or size (each defined below in-text and in the glossary). Branch form names are included in parentheses in the "form" column on the pottery example description. The root/branch tables are meant to reflect the general association of forms (alphabetically), not to establish function-based standardization.

The second aspect of form to be considered is size. Specialists tend to talk about vessels in terms of "small, shallow" or "large, deep," etc., followed by a general description which does not necessarily always include dimensions nor consistently relate those dimensions to the adjectives. Terminology used in this manner would be adequate as long as the descriptive terms are part of an objectively-defined system.

Some care must be taken in order to define dimensional terms objectively since the root forms themselves vary greatly in relative size. That is, a typical "large" jug is not nearly the size of a typical "large" jar; similarly, a "small" bowl is generally much smaller than a "small" jar. Any objective scheme must account for this. Size terminology in the form-based paradigm describes a specific mathematical dimensional quality appropriate no matter whether the vessel is a bowl, jar, or jug.

Bowls are essentially open vessels with horizontal orientations. Although bowls are seldom dramatically deeper than they are wide, in fact, most bowls are wider than they are deep, both dimensions are important. Bowls should therefore be described in terms of "diameter" and "depth."

Jars and jugs are vertically-oriented closed vessels, almost always as tall or taller than they are wide. There are exceptions, but this is generally true, therefore, with jars and jugs, diameter is less of a distinguishing factor than with bowls. Since diameter is not a salient measurement, depth (being a percentage of diameter) is also relatively meaningless: almost all jars and jugs are intuitively "deep" so a proportional measurement of depth cannot be used very effectively to describe the vessels. Jars and jugs are best described in terms of "height" where height is a linear measurement. (Since both "depth" and "height" are means of describing the vertical dimension, it is best to keep the terms clearly differentiated. In the form-based paradigm, "depth" is a percentage description of bowls; "height" is a vertical measurement of jars and jugs.)

One could devise a system wherein closed forms would be called "small-medium-large" based on the size range peculiar to specific branch forms. That is, a "medium" juglet would describe a different size than a "medium" storage jar since a juglet is a very small-to-small vessel and a storage jar is a large-to-very large vessel. However, having a single descriptor mean several different things depending on the context would be both unwise—the whole reason for terminological standardization is to provide a common communication base. Having the definition of terms vary depending on the type of vessel under consideration would compound, not alleviate, subjectivity. Such a method of definition would also be impractical as well. In order to objectify terms under such a situation, they would have to be defined in regard to proportion (as was done with bowl depths), however, since all closed forms would then be classified "deep-to-very deep," such a scheme would be inadequate.

The form-based paradigm therefore utilizes a system of size terminology wherein bowl forms are described in terms of diameter and depth. Jars and jugs are described in terms of height. These are more fully explained below (see table 4 and figs. 13-16).

Bowl diameter is easily defined as a linear measurement from zero to infinity—at least theoretically. In practical terms, bowls vary in diameter from a few centimeters in diameter to one meter, more-or-less. In a form-based paradigm, diameter (measured in centimeters) can be accurately

described by associating terms like “very small ... very large” along the likely spectrum. Based generally on published forms, a bowl diameter measurement of “very small” is < 10 cm and “very large” is > 75 cm, with the remaining adjectives (small, medium, and large) falling systematically in between (see table 4 and figs. 13 and 14). This association of term-to-dimension works well with bowl diameter, but what of bowl depth?

Bowl depth terms could be associated with linear measurements as was done with diameter terms, however, such an assignment is not adequate to the task of describing pottery. A linear scale for depth terminology is problematic because the root forms vary so much in relative size. To make “shallow” equal “10 cm” would be perfectly adequate for large vessels like platters, but would be misleading for very small vessels like cups. A 10 cm deep cup is cognitively not “shallow”; just the opposite: 10 cm may be “deep” for a cup, but “shallow” for a platter. So assigning absolute

Table of Dimensions

Bowls

Diameter (maximum diameter):

very small bowl:	< 10 cm
small bowl:	10 cm - 14.9 cm
medium bowl:	15 cm - 24.9 cm
large bowl:	25 cm - 75 cm
very large bowl:	> 75 cm

Depth (measured as a percentage

of the maximum height to the diameter):

shallow bowl:	< 20%
intermediate bowl:	20% - 74.9%
deep bowl:	75% - 100%
very deep bowl:	> 100%

Jars and Jugs

Height (maximum rim-to-base measurement):

very short	< 15 cm
short	15 cm - 24.9 cm
tall	25 cm - 75 cm
very tall	> 75 cm

Table 4. Root form term/dimension correlations.

dimensions to depth terminology is not adequate for a form-based paradigm. The alternative to assigning absolute measurements to depth terminology is to associate the terminology with proportional dimensions.

It may not be obvious at first blush that terms like "shallow" or "deep" are not measurements at all, but rather statements of proportion. Identical depth language is commonly used to mean very different things. For example, an archaeologist's "deep" trench (measuring one to several meters in depth) is not on the same scale as a "deep" canyon (which may be several kilometers deep). Again, a "deep" bowl, a "deep" pond, and a "deep" ocean are very different depths.

Try this mental exercise. Imagine a cup ... hand-sized in diameter and 15 cm in depth. This would probably be considered, intuitively, a "deep" cup. Now picture the vessel morphing in diameter—getting wider to maybe, 50 cm—while it remains 15 cm in depth. You can hold this new vessel comfortably in two hands, but this vessel no longer seems "deep" (although it is exactly the same measured depth as the cup). Its depth may seem more like "intermediate"—certainly not "deep" or "shallow." Now the vessel morphs again, this time until it is the diameter of a table top, slightly over a meter in diameter. It becomes a very large platter, and appears "shallow"—even though it is still 15 cm deep (like the cup and bowl).

The essential nature of depth terminology is proportion. A cup is "deep" in relation to its other dimension, just as a canyon is "deep" relative to its. Depth terminology, therefore, must be dependent on the other significant dimension of the object in question, namely, its diameter (or width).

The depth measurement in the mental exercise remained the same, yet intuitively, its depth description changed from "deep" to "intermediate" to "shallow"—depending on the diameter of the vessel. Bowl depth is therefore best described by proportionality-defined terms, that is, percentages of the diameter (see table 4 and figs. 13 and 14). "Shallow" is a description of a depth which is < 20% of the vessel's diameter. "Intermediate" describes a depth of 20%-74.9%, "deep" is 75%-100%, and "very deep" is > 100%.

To summarize: in the form-based paradigm, the size of bowls is described in terms of diameter (at the vessel's widest point) and depth (based on the vessel's maximum height). Bowl diameter is measured in centimeters and ranges from very small to very large. Bowl depth is expressed as a percentage of the maximum height in relation to the maximum diameter and ranges from shallow to very deep.

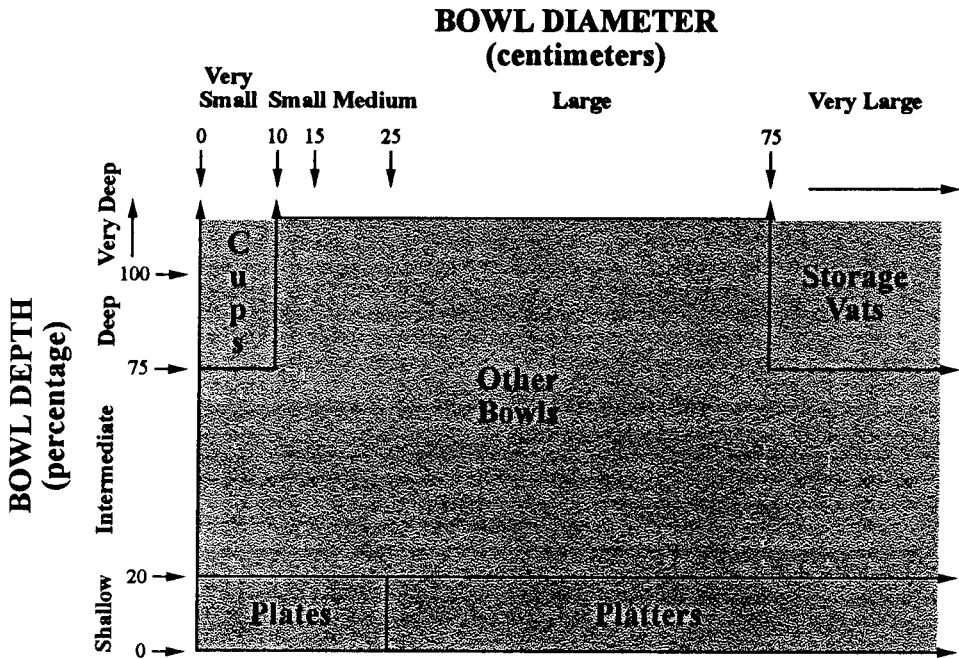
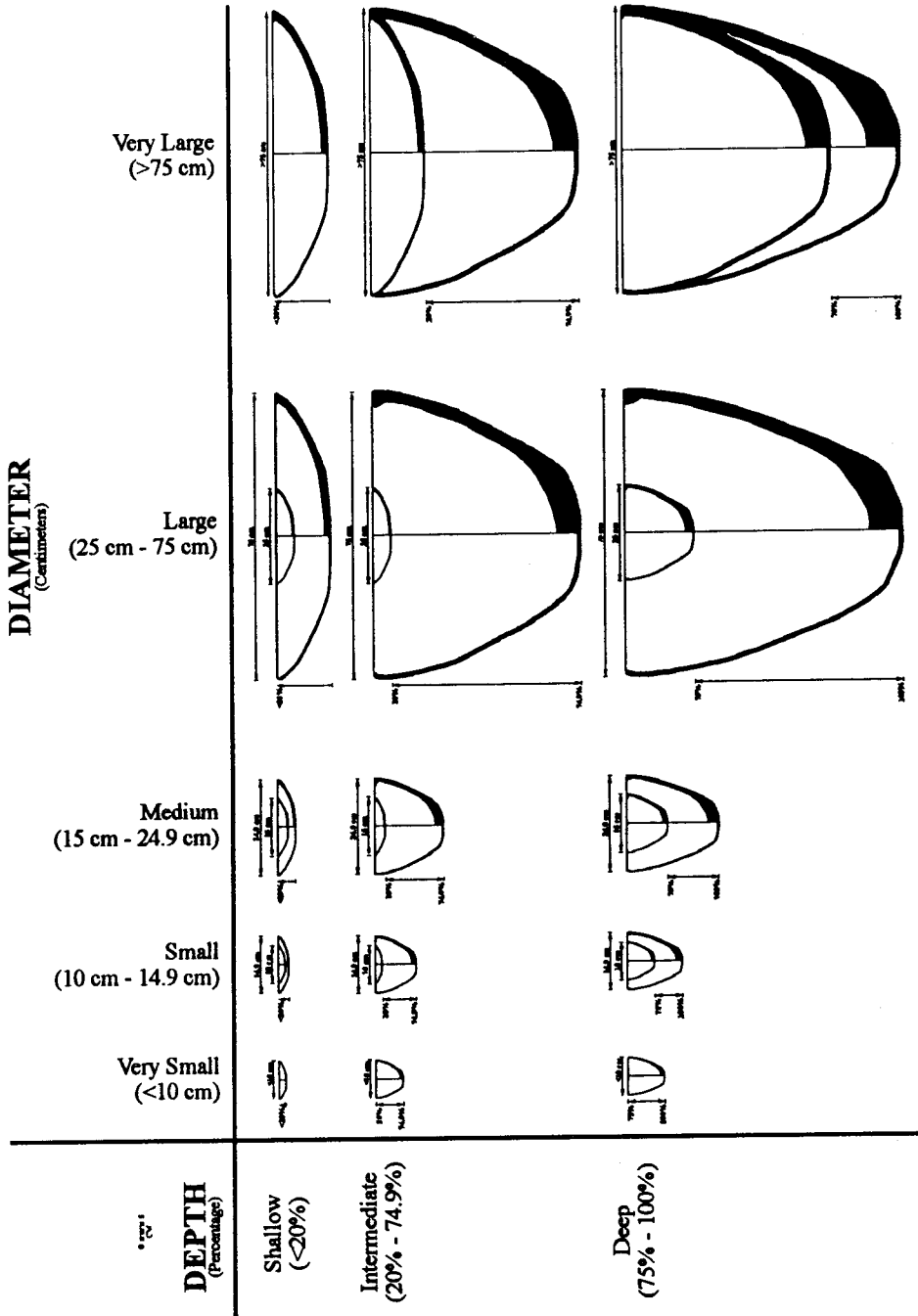


Figure 13. Bowl form size matrix.

Various combinations of diameter and depth account for every branch bowl form. In order to help visualize the relative sizes of various branch vessel forms when plotted in terms of diameter and depth, fig. 13 presents an illustrative matrix. While the majority of bowl forms overlap in regard to size (and must therefore be distinguished by shape), some branch forms are distinguishable by size alone: cups, plates/platters, and vats.

Figure 14 presents a single “bowl” vessel which has been computer “morphed” to the size dimensions of the form-based paradigm. This figure graphically illustrates the mental exercise suggested earlier in the chapter. Note that the smaller (inner) form represents the minimum size and the larger form illustrates the maximum size. Width is ranged across the top of the figure. Depth is presented along the left side.

In describing pottery, adjectives should be ordered systematically. The sequence of “width” then “depth” is preferred, hence, the top-left form would be described as “very small (diameter), shallow (depth) bowl” or the bottom-right form would be a “very large (diameter), very deep (depth) bowl.”



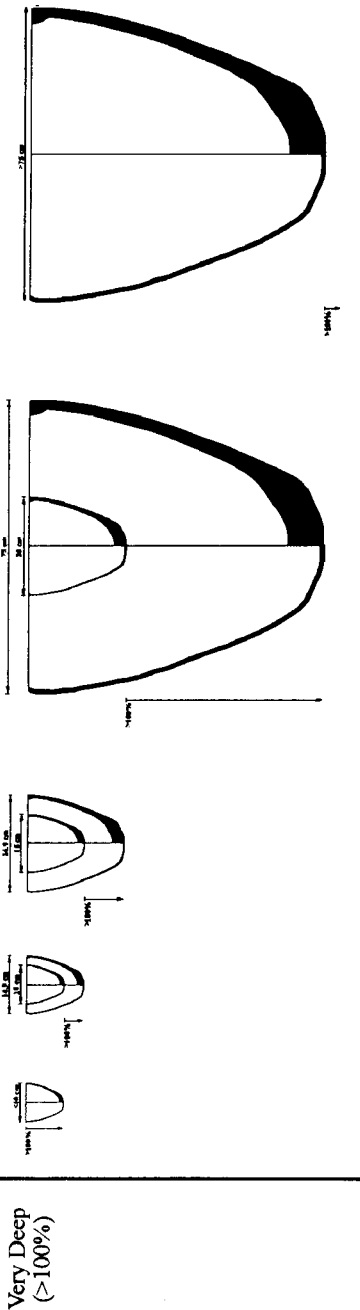


Figure 14. Bowl form dimensions (at 5% scale).

Jars and Jugs are best described in terms of their height: maximum rim-to-base measured in centimeters (see table 4 and figs. 15 and 16). In the form-based paradigm, “very short” describes a height which is < 15 cm, “short” is 15-24.9 cm, “tall” is 25-75 cm, and “very tall” is > 75 cm. (Note that “medium” is not used as a height descriptor in order to avoid possible confusion with “medium” as a bowl diameter.) While jars are generally taller than jugs, this spectrum of height measurements can be applied to all jars and jugs whether full-sized or diminutive, no matter the variety of size among similar vessels.

In order to help visualize the relative sizes of various jar and jug branch vessel forms when plotted in terms of height, fig. 15 presents an illustrative matrix. The jar branch forms are gathered to the left while the jug branch forms are indicated at the right. Note that the jar forms are generally much taller than are the jug forms.

Figure 16 presents a jar and a jug which have been “morphed” to the size dimensions in table 4. The smaller (inner) forms correspond to very short-to-tall sizes (in the case of jars) and very short-to-short sizes (in the case of jugs). Jars taller than the one illustrated would be “very tall.” The fact that jugs are generally shorter than jars is represented by having only the two more common jug sizes illustrated in the figure, however, some jugs are slightly taller than the maximum “short” dimension.

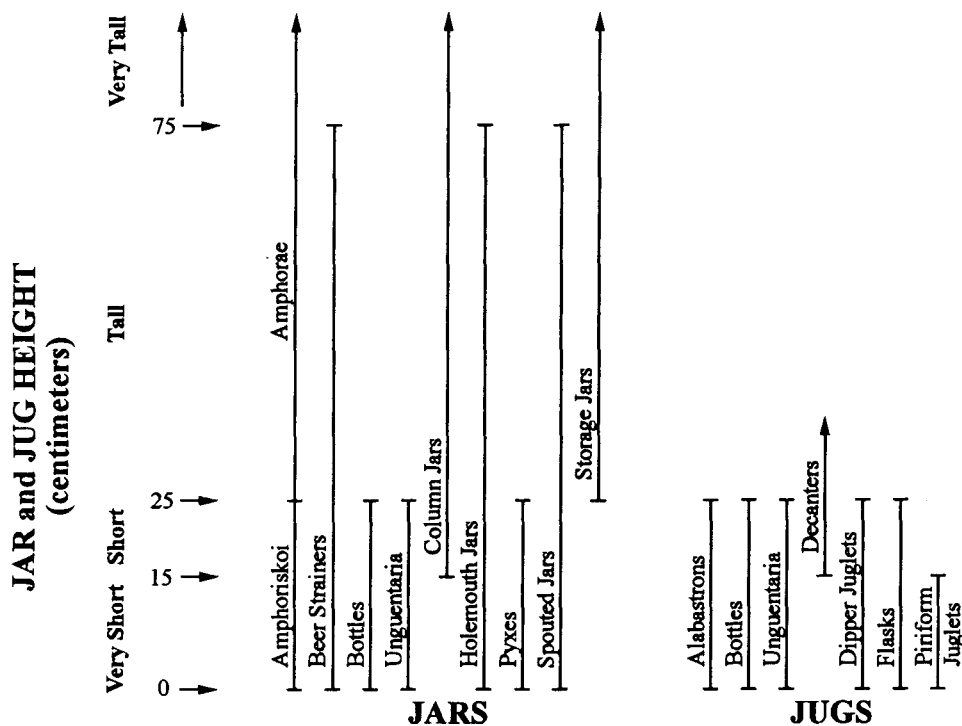


Figure 15. Jar and jug form size matrix.

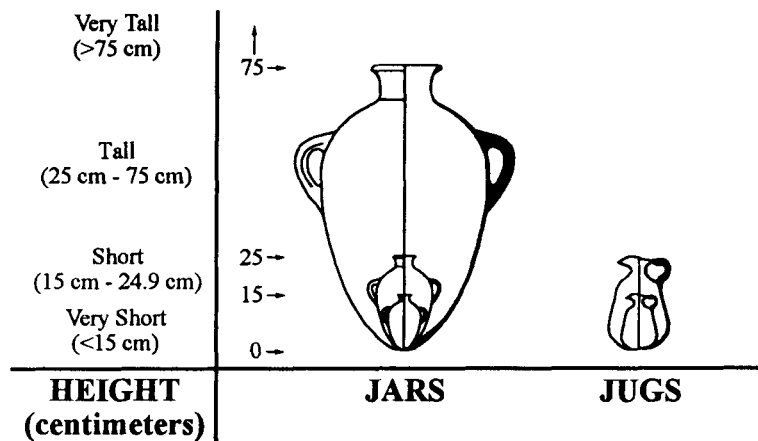


Figure 16. Jar and jug dimensions (at 5% scale).

Bowl Forms

A bowl is any vessel the opening of which is 50% or more of its maximum diameter, no matter the function whether cultic, domestic, funerary, or industrial, etc. (A vessel which is identical in all respects to a bowl, such as some cooking pots, but with an opening less than 50% of its maximum diameter, is a jar). Bowls may have handles, but seldom have necks.

The bowl opening, or "mouth," is measured at its narrowest inner diameter (inside any inverted lip, rim, or neck). The maximum diameter is the vessel's exterior diameter at its widest point. Bowl diameters are classified as "very small" (maximum diameter < 10 cm), "small" (10-14.9 cm), "medium" (15-24.9 cm), "large" (25-75 cm), or "very large" (> 75 cm). Bowl depths may be "shallow" (vertical percent of the maximum diameter < 20%), "intermediate" (20-74.9%), "deep" (75-100%), or "very deep" (> 100%).

Branch bowl vessels are listed in table 5. They include: basins, biconical bowls, carinated bowls, casseroles, cooking pots, cups (including: cornets, cups, goblets, and twin-cups), footed bowls (aka: chalices or pedestal bowls), hemispherical bowls, holemouth bowls, incense burners, hemispherical bowls, holemouth bowls, incense burners,

Bowl Forms

	Basin	
	Biconical bowl	
	Carinated bowl	
	Casserole	
	Cooking pot	
	Cup	— [Cornet
		— [Cup
		— [Goblet
		— [Twin-cups
	Footed bowl	
	Hemispherical bowl	
	Holemouth bowl	
Bowl	Incense burner	
	Krater	
	Plate	
	Platter	— [Pan
		— [Platter
	Spouted bowl	
	Sugar pot	
	V-shaped bowl	
	Vat	

Table 5. Bowl branch forms.

kraters, plates, platters (including: pans and platters), spouted bowls (aka: teapots), sugar pots, V-shaped bowls, and vats. These branch bowl forms are illustrated in figs. 17-21. Each branch form is distinguished by objective shape and/or size criteria (as defined in table 4 and illustrated in figs. 13 and 14.)

Basins are medium-to-large (diameter), intermediate-to-deep (depth) bowls. Although "basin" might connote some sense of domestic or industrial use in modern terminology, it is used in the paradigm simply to denote an open vessel of the specified dimensions.

Biconical bowls derive their name from their distinct shape. The bowls appear to be made of two cones, one atop the other and joined at their maximum diameter. The upper and lower portions may be equal or unequal.

Carinated bowls also have a distinct shape, having three cones atop each other forming a very angular "S"-shaped cross-section, often with elevated bases. Normally the upper cone is about half of the vessel depth, the middle cone is quite short, and the lower cone makes the remainder of the vessel wall. Carinated bowls are typical of the Middle Bronze period, although they are also found in the subsequent Late Bronze and Iron Ages.

Cooking vessels included casseroles and cooking pots. Casseroles are open, flat-based cooking vessels, frequently with two horizontal loop handles on opposite sides of the rim. They may, or may not, be associated with a lid. Cooking pots are small-to-large (diameter), shallow-to-deep (depth) bowls used for food preparation (aka: cook pot or cookpot). They are often made of clay mixed with large quantities of calcite or quartz powder, improving their resistance to heat and to temperature variation of flames. The thickness of the vessel sides must be constant, a detail distinguishing it from other vessels. The bottoms of cooking pots are usually rounded and often retain discoloration resulting from use.

Cup-sized bowls include cornets, goblets, and twin-cups. Cups are very small (diameter), deep-to-very deep (depth) bowl, with or without handles. A cup with handles may be called a mug or beaker in some published descriptions. Cornets are V-shaped cups with very pointed bases, almost unique to the Chalcolithic period. Goblets are cups with elevated bases. Twin-cups are simply two cups attached horizontally (at their body walls). They are typical of the Early Bronze period, but may appear in the Persian/Hellenistic repertoire as well.

Footed bowls (aka: chalices or pedestal bowls) are small-to-large (diameter), shallow-to-very deep (depth) bowls with elevated bases. An

important distinction should be noted here. A footed bowl is a "chalice," while a cup with an elevated base is a "goblet."

Hemispherical bowls are distinguished by the shape of their body walls. They have globular bodies shaped like half of a circle or ball.

Holemouth bowls have no rims, rather the vessel lip attaches directly to the vessel wall. They have a globular body or incurved wall profile, the opening ("mouth") of which is simply a "hole." Holemouth bowls are differentiated from holemouth jars only on the basis of whether the mouth is 50% or more of the vessel's maximum diameter; *i.e.* whether the vessel is "open" or not (see fig. 22).

Incense burners are open, footed vessels the walls of which are punctured with ventilation holes. They were filled with charcoal upon which was sprinkled aromatic resin such as frankincense or myrr. The incense burner (aka: brazier or censer) may be very difficult to distinguish from a strainer if no carbon discoloration is evident.

"Kratēr" is a Greek name for a large (diameter), intermediate-to-deep (depth) bowl generally with a "S"-curved wall profile and a flat base. Kraters (also spelled "crater") were originally for mixing wine and water, but may describe any vessel of the "krater" form, regardless of function.

Plates and platters are shallow bowls of increasing diameter. Plates are very small-to-medium (diameter), shallow (depth) bowls. Platters are large-to-very large (diameter), shallow (depth) bowls. The only difference between a plate and a platter is differing diameter dimensions. A platter with a long handle may be called a "pan" (aka: frying pan).

Spouted bowls (aka: teapots) are bowls possessing a spout attached to their bodies, often at an angle from the vessel shoulder. They are typical of the Early Bronze periods. As with holemouth bowls, the only difference between a spouted bowl and a spouted jar is the proportion of the vessel's mouth to its maximum diameter (see fig. 22).

Sugar pots are special V-shaped bowls used to store/prepare sugar. They are typical of the Late Islamic period.

V-shaped bowls (also, A-shaped bowls, although they are less common in the pottery corpus) have conical wall profiles.

A vat is a large-to-very large (diameter), deep-to-very deep (depth) bowl. It is of similar dimension to tall and very tall storage jars, but since they are open in form, must be associated with other bowl forms. The term "vat" is not used in the paradigm to connote a particular domestic or industrial use, simply as a convenient term for these extraordinary vessels.

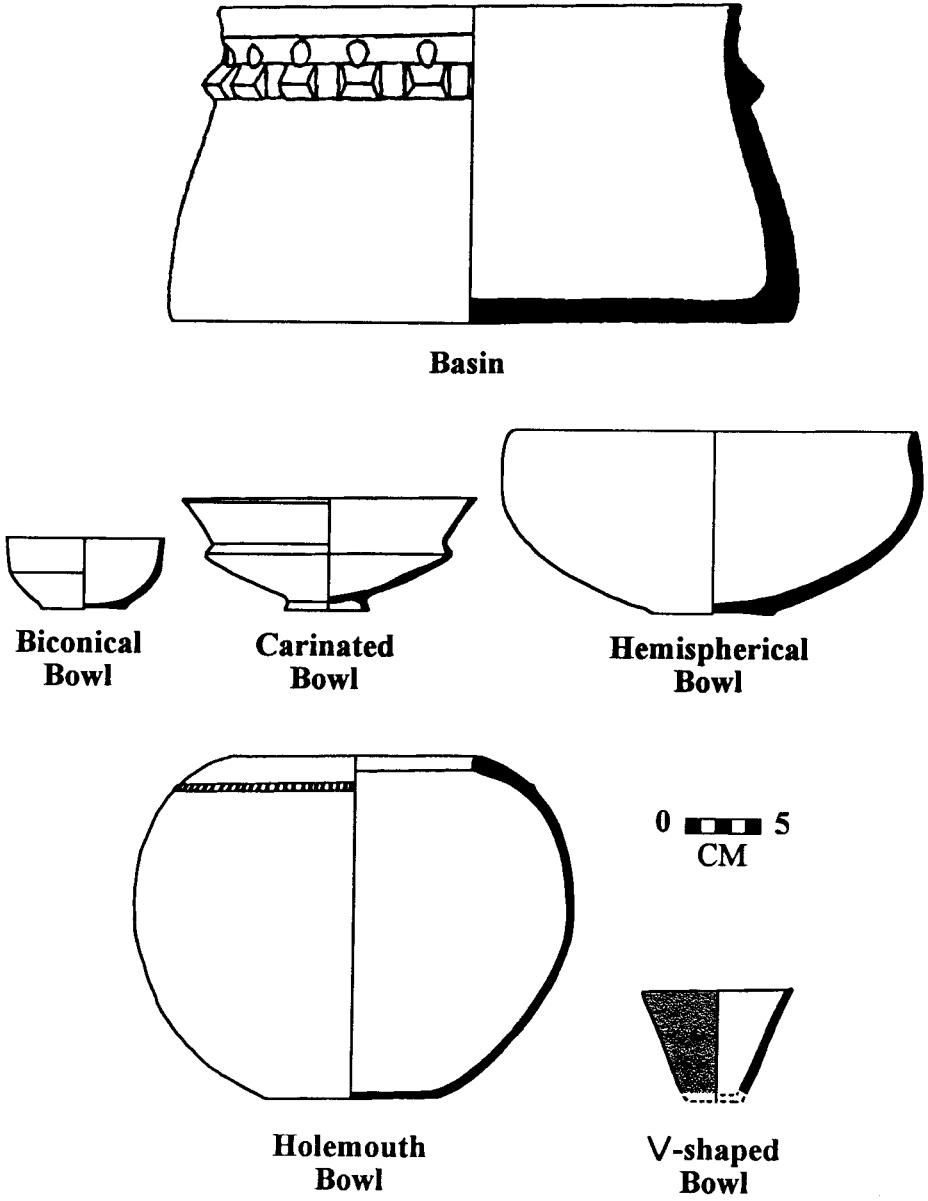
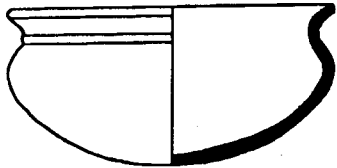
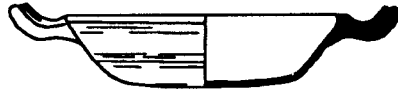


Figure 17. Typical bowl forms: basin and various bowls.



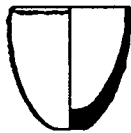
Cooking Pot



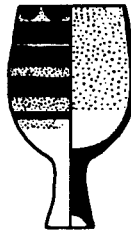
Casserole



Cornet



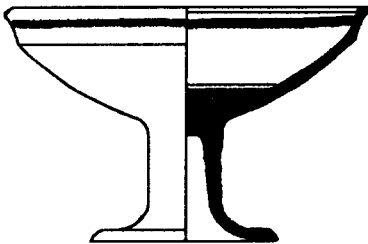
Cup



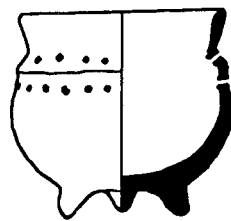
Goblet



Twin-cups



Footed Bowl



Incense Burner

Figure 18. Typical bowl forms: cooking vessels, cups, footed bowls, and incense burner.

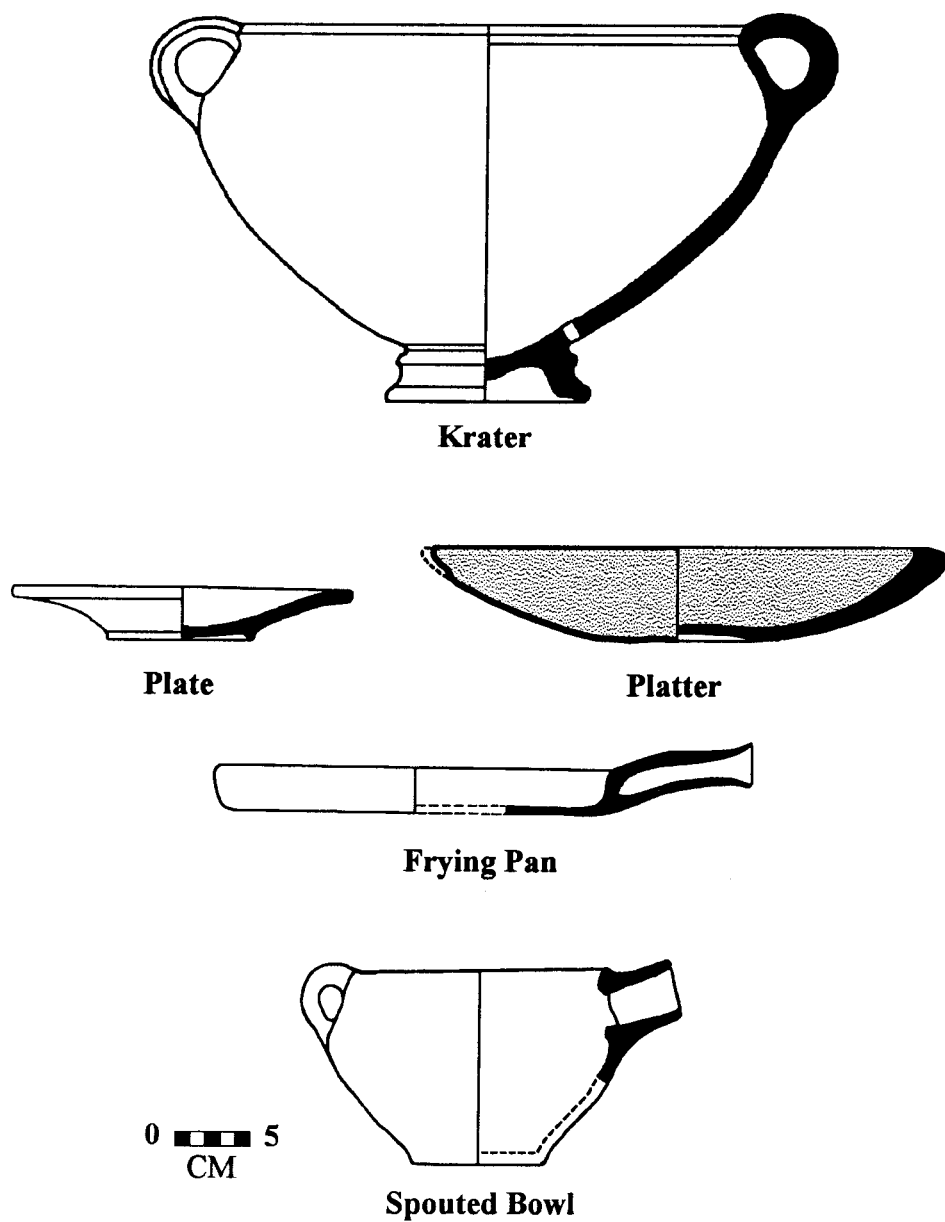
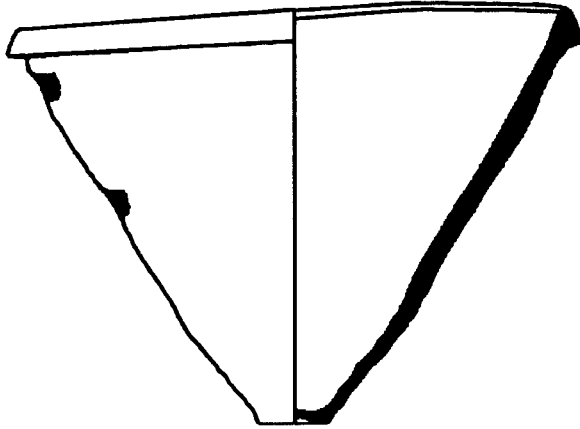
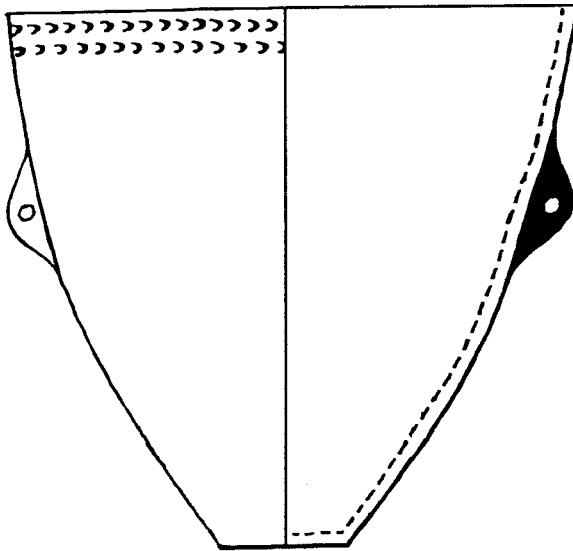


Figure 19. Typical bowl forms: krater, plate vessels, and spouted bowl.



Sugar Pot

0  5
CM



Vat

Figure 20. Typical bowl forms: sugar pot and vat.

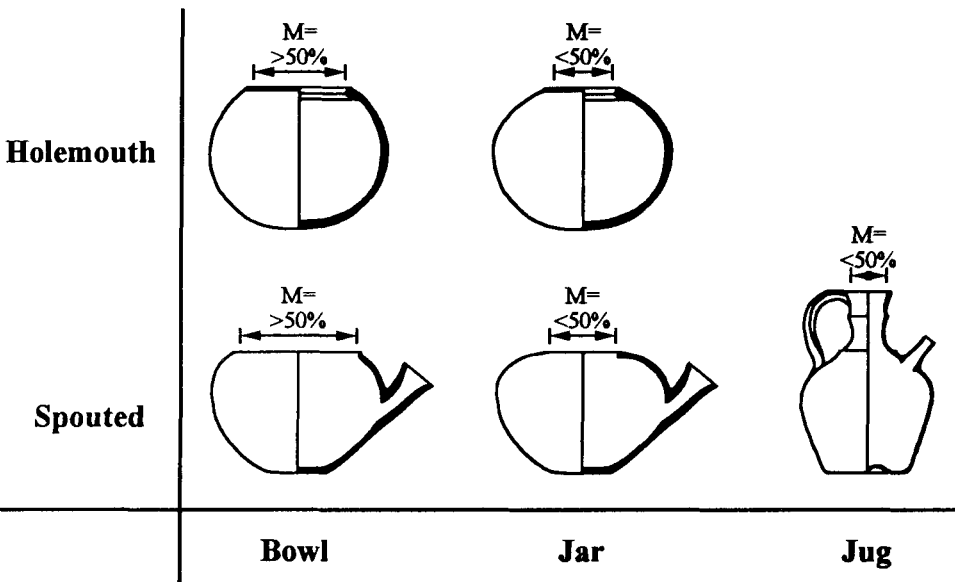


Figure 22. Holemouth and spouted vessel comparisons. (M= the interior diameter of the vessel opening as compared to the maximum diameter of the vessel).

Holemouth vessel forms are variously named “bowls” or “jars” in the relevant literature, often without precise differentiation. The difference between a holemouth bowl and a holemouth jar is determined by the relative proportion of the vessel opening. If the vessel is “open” (with a minimum mouth diameter > 50% of the vessel’s maximum diameter), then the vessel is a holemouth bowl. If the vessel is “closed” (with an opening < 50% of its diameter), then the vessel is a holemouth jar. These are illustrated in fig. 22. Here it may be seen that the holemouth form provides a kind of transition vessel from open-to-closed forms, that is, from bowls-to-jars.

Since spouted bowls and jars are often holemouth, examples of these forms have been included in fig. 22 as well. The pertinent characteristic of the spouted vessel is still the proportion of its opening: open = spouted bowl, closed = spouted jar. A spouted jug, while unlikely to be an issue of confusion, is included in the illustration for comparison.

Jar Forms

A “jar” is a closed form, the minimum mouth diameter of which is

< 50% of its maximum diameter. It is distinguished from jugs (which are also closed forms) by its lip/rim structure. Most often, a jar possesses a short neck and lip/rim structure designed for fastening an enclosure making it ideal for the long- or short-term storage, preservation, or transportation of goods. By contrast, jug lips are designed for pouring. Jars were made with or without handles, but typically had either one or two handles. In terms of size, jars may be "very short" (height < 15 cm), "short" (height 15-24.9 cm), "tall" (height 25-75 cm), or "very tall" (height > 75 cm). See table 4 as well as figs. 15 and 16.

Branch jar vessels include: amphorae, amphoriskoi (including: amphoriskoi and twin amphoriskoi), beer strainers, bottles (including: bottles and unguentaria), column jars, holemouth jars, pyxes, rhytons, spouted jars, storage jars, and sugar jars (see table 6 and figs. 23-26).

Jar Forms

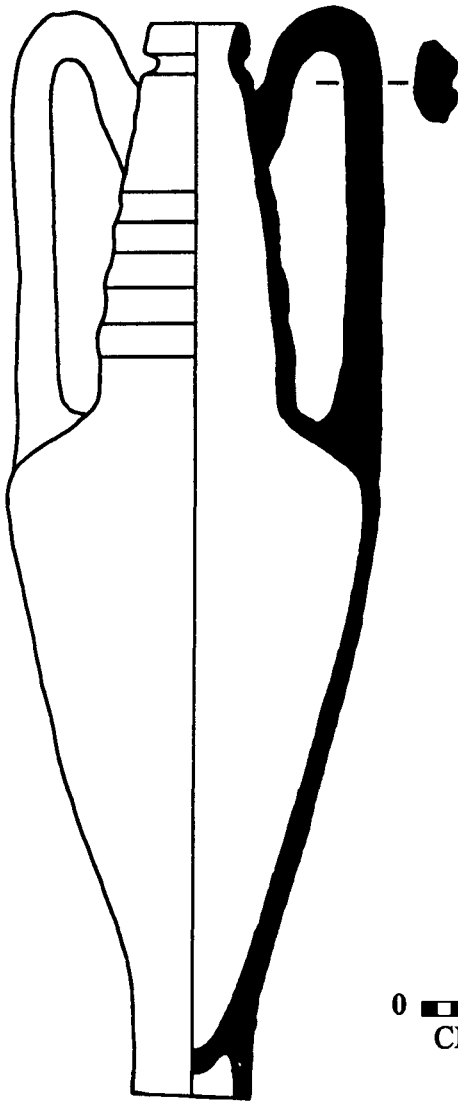
Amphora		
Amphoriskos	—	Amphoriskos
		Twin amphoriskos
Beer strainer		
Bottle	—	Bottle
		Unguentarium
Jar	{	
Column jar		
Holemouth jar		
Pyxis		
Rhyton		
Spouted jar		
Storage jar		
Sugar jar	}	

Table 6. Jar branch forms.

Amphorae are tall-to-very tall jars, usually with two handles which are normally located on opposing shoulders. Amphoriskoi are very short-to-short version of amphorae. Twin amphoriskoi are two amphoriskoi attached at their bodies.

Beer strainers are very short-to-tall spouted or necked jars used in the processing of beer or wine. The body wall inside the spout or inside the neck is punctured to form a strainer (aka: beer jug).

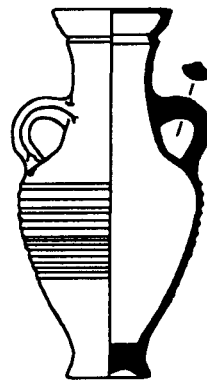
Bottles are very short-to-short jars (without pouring lips), often with a cylindrical body and generally without handles. Unguentaria are very



Amphora

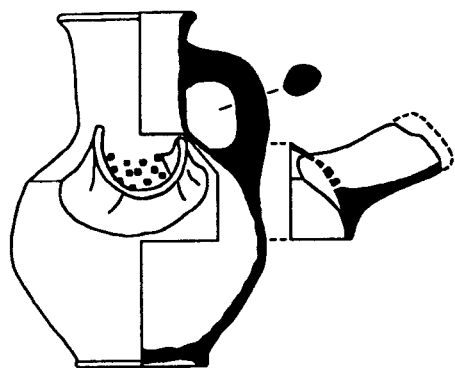


Twin Amphoriskos



Amphoriskos

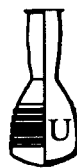
Figure 23. Typical jar forms: amphora, amphoriskos, and twin amphoriskos.



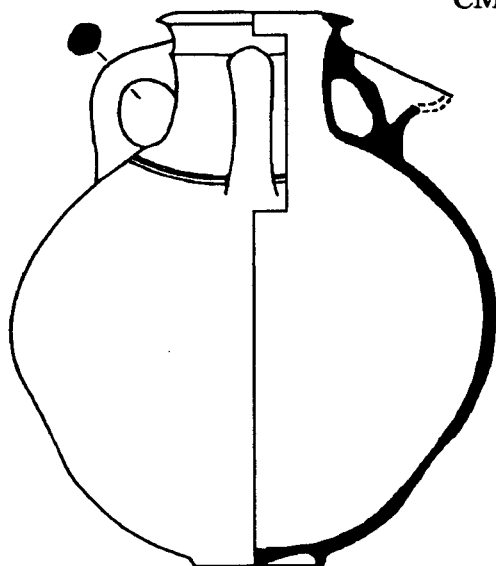
Beer Strainer



Bottle



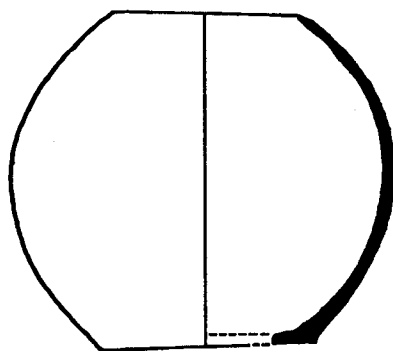
Unguentarium



Column Jar



Pyxis



Holemouth Jar

Figure 24. Typical jar forms: beer strainer, bottle, unguentarium, column jar, holemouth jar, and pyxis.

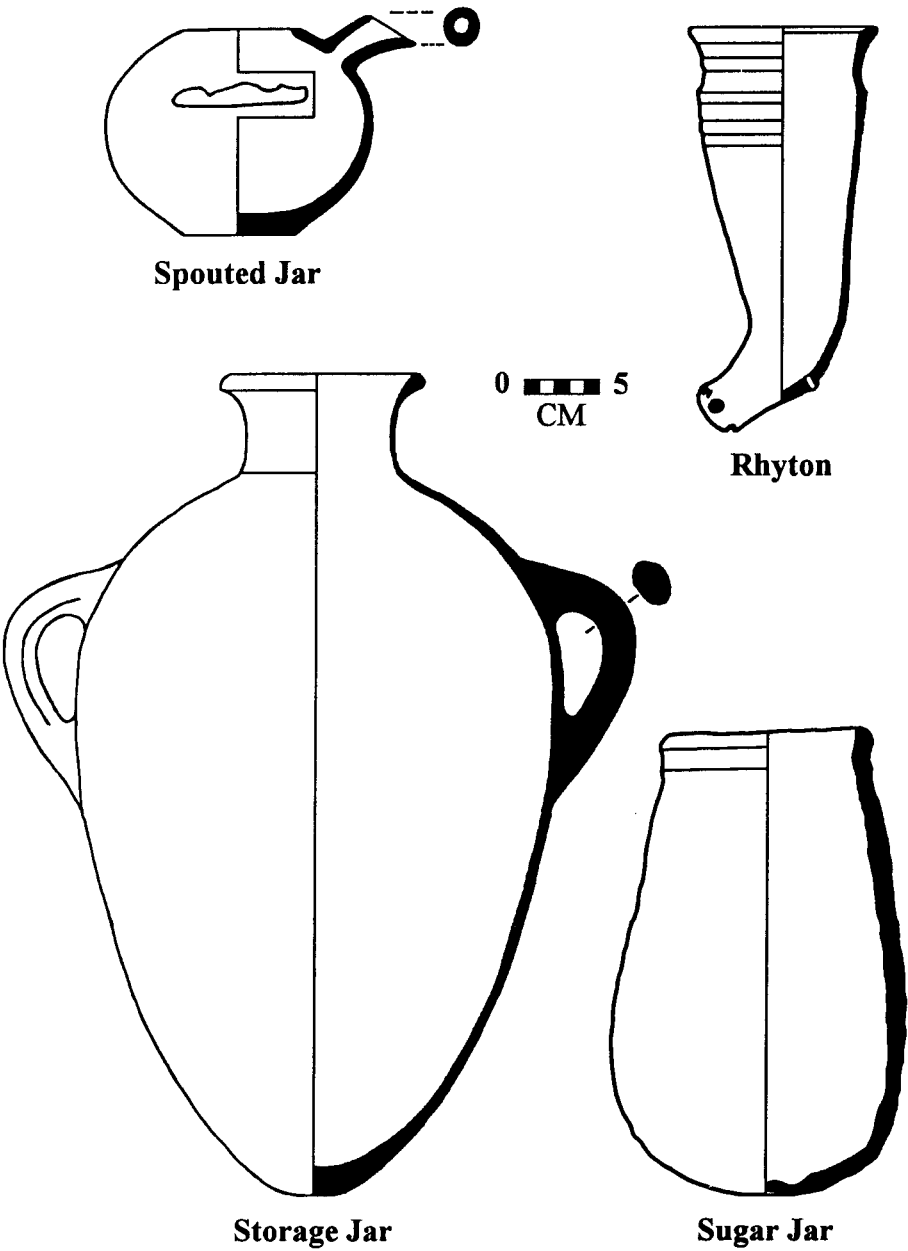


Figure 25. Typical jar forms: rhyton, spouted jar, storage jar, and sugar jar.

short-to-short bottles used for conserving perfume oils, precious liquids and balms (“unguents”).

Column jars are short-to-tall jars with column-shaped support beside or attached to the neck for the purpose of holding a dipper juglet.

Holemouth jars have no rims, rather the vessel lip attaches directly to the vessel wall. These very short-to-tall vessels have a globular body or incurved wall profile, the opening (“mouth”) of which is simply a “hole.” Holemouth jars are differentiated from holemouth bowls only on the basis of whether the mouth is $< 50\%$ of the vessel’s maximum diameter; *i.e.* whether the vessel is “closed” or not (see fig. 22).

“Pyxis” is a Greek name for a very short-to-short squat, cylindrical jar with angular shoulders. Pyxes are typical of the Hellenistic period and later.

Rhytons are small zoomorphic jars, often shaped like a horse or mule head, also typical of the Hellenistic period and later.

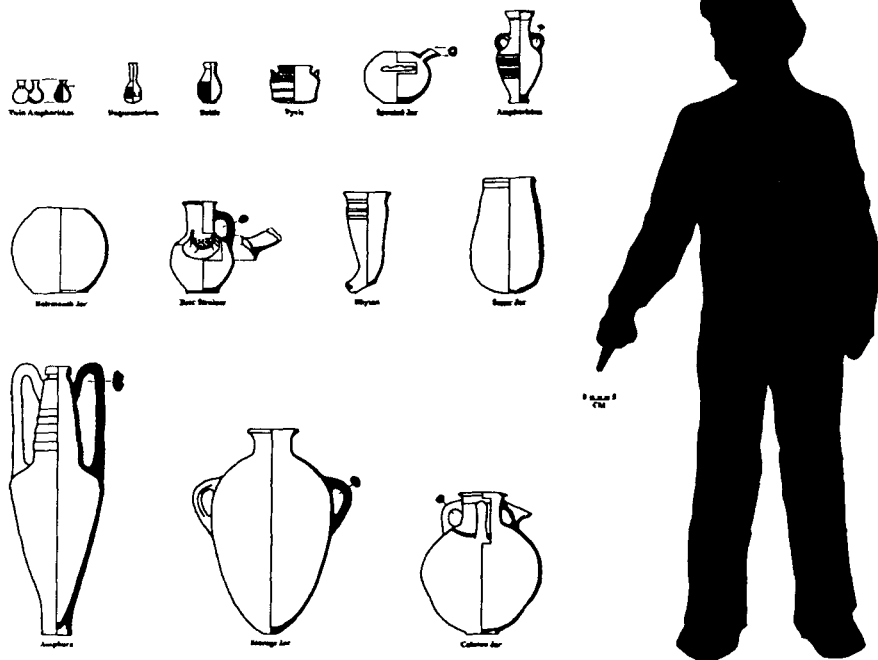


Figure 26. Jar forms relative to a human scale.

Spouted jars (aka: teapots) are very short-to-tall jars possessing a spout attached to their bodies, often at an angle from the vessel shoulder. They are typical of the Early Bronze periods. As with holemouth jars, the only difference between a spouted jar and a spouted bowl is the proportion of the vessel's mouth to its maximum diameter (see fig. 22).

Storage jars are tall-to-very tall jars (aka: store jars, pithoi).

Sugar jars were jars used to store/prepare sugar, typical of the Late Islamic period.

Figure 26 presents some typical jar forms relative to the human dimension (all reduced to 5% of full scale). As with bowls, this figure clearly illustrates the size range of typical jar forms. Some variation may be found in the broader Transjordanian jar corpus.

Jug Forms

A "jug" is a specialized closed form characterized by a pouring lip. Like all closed forms, the mouth of a jug is < 50% of the vessel's maximum diameter. A jug differs from a jar in that the lip/rim structure of the jug is designed for pouring, often with a pouring lip. The body is often globular with a tall neck. Jugs typically have one handle, but some branch forms have none or two. A jug may be "very short" (height < 15 cm), "short" (height 15-24.9 cm), "tall" (height 25-75 cm), or "very tall" (height > 75 cm). See table 4 and figs. 15 and 16. Juglets are diminutive (very short-to-short) jugs. Branch jug vessels include: alabastrons, bottles (including: unguentaria), decanters, dipper juglets, flasks (including: pilgrim flasks), lagynoi, piriform juglets, and spouted jugs (see table 7 and figs. 27-29).

Jug Forms

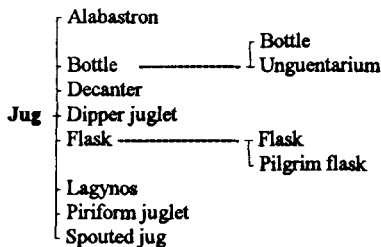


Table 7. Jug branch forms.

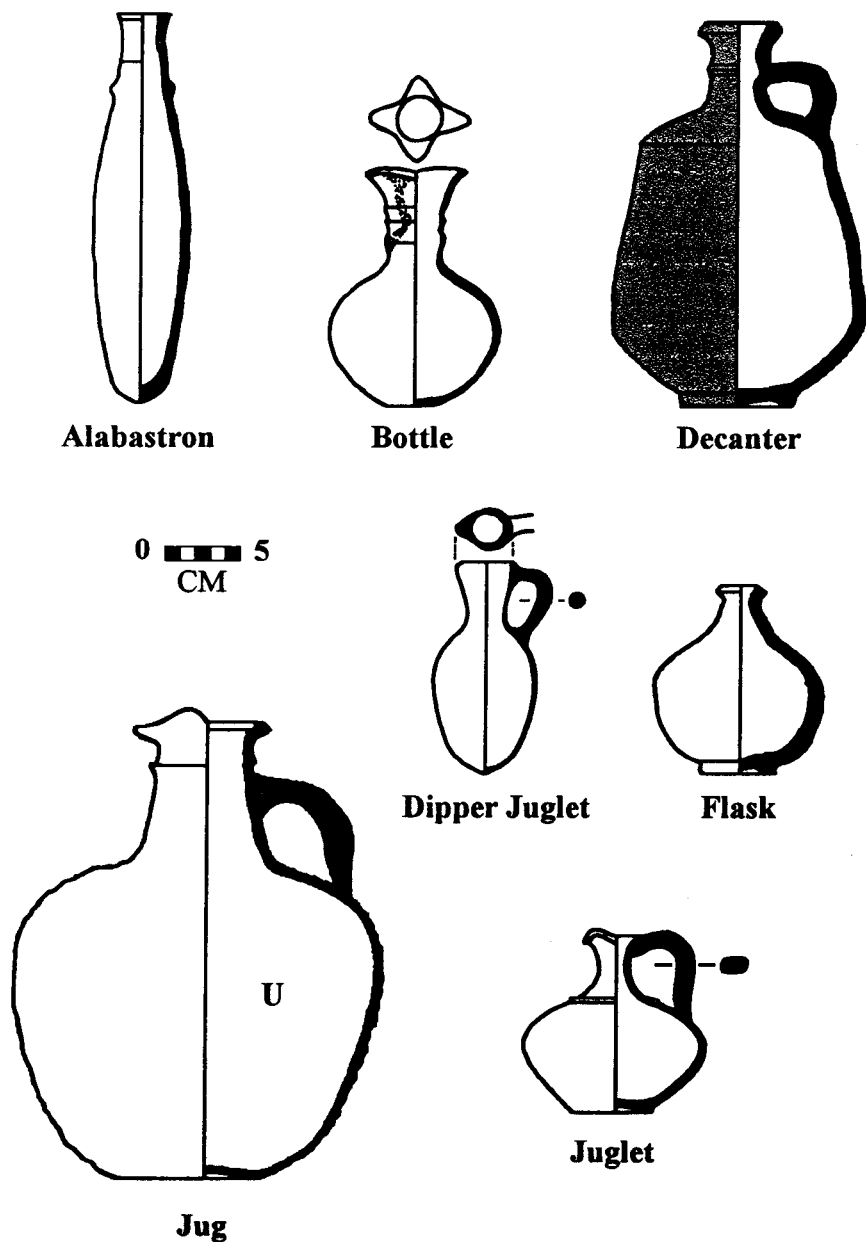
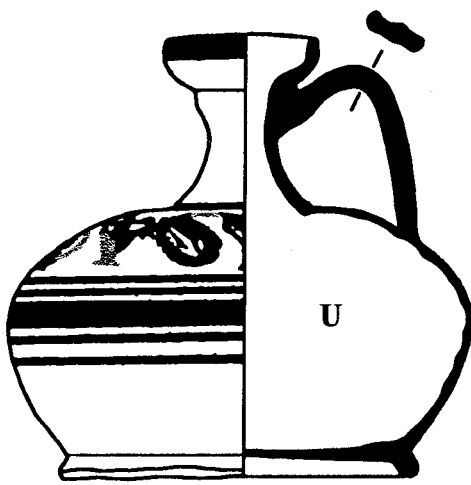
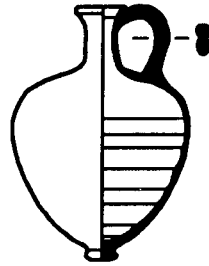


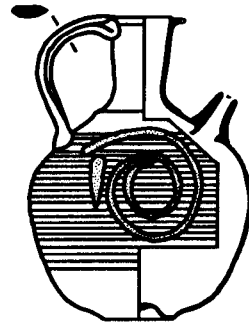
Figure 27. Typical jug forms: alabastron, bottle, decanter, dipper juglet, flask, jug, and juglet.



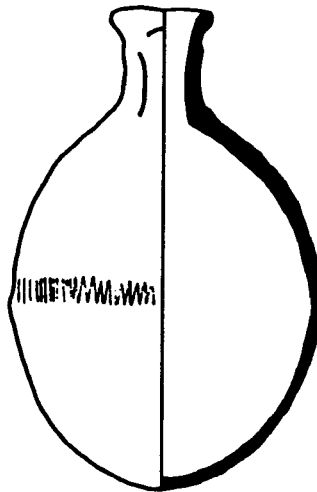
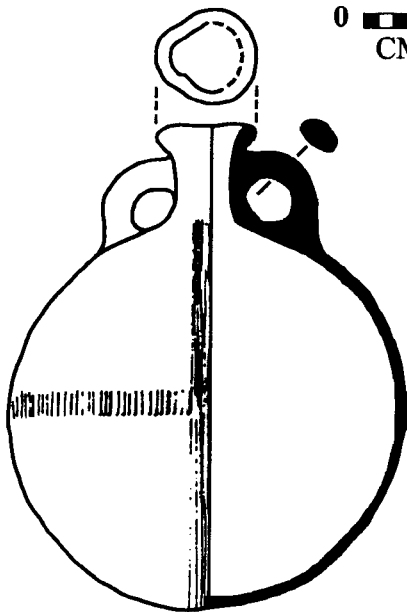
Lagynos



Piriform Juglet



Spouted Jug



Pilgrim Flask

Figure 28. Typical jug forms: lagynos, pilgrim flask, piriform juglet, and spouted jug.

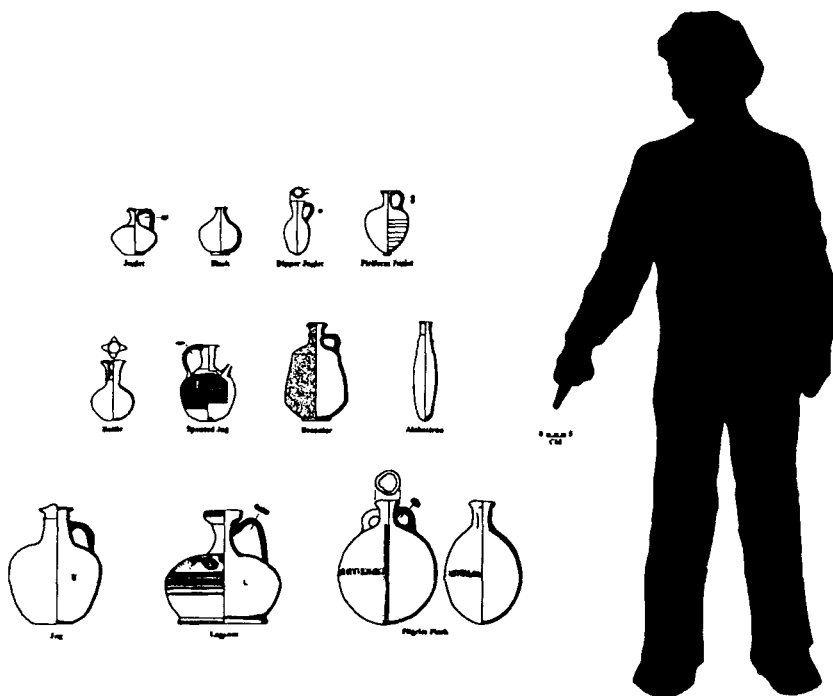


Figure 29. Jug forms relative to a human scale.

Alabastrons are very short-to-short, elongated, narrow-necked jugs mimicking an earlier form made from alabaster (stone). Alabastrons were used for the storage of perfumes and precious oils and often possessed flattened, disk-shaped lips useful for applying perfume without wasting it.

Bottles are very short-to-short jugs (with pouring lips), often with a cylindrical body and generally without handles. Unguentaria are very short-to-short bottles used for conserving perfume oils, precious liquids and balms ("unguents"). Most unguentaria have no pouring lip and are therefore more properly "jars."

Decanters are short-to-tall jugs, most often with sharp angular shoulders. Bodies tend from rather cylindrical to more globular.

Dipper juglets are very short-to-short jugs with elongated bodies. They were used for dipping liquid to/from other vessels, sometimes recovered in association with column jars.

Flasks are very short-to-short jugs often characterized by their

ovoid or lenticular bodies. A pilgrim flask is a specialized flask, generally an Iron II period and later form with a round body (with ovoid cross-section) and most often possessing two handles—one on each side of the neck.

Lagynoi are particularly-styled short-to-tall, very narrow-necked jugs from the Hellenistic period.

Piriform juglets are very short, pear-shaped jugs.

Spouted jugs (and less often, juglets) are basic very short-to-tall jug forms to which a spout has been attached. The spout is most often located at the vessel shoulder.

Figure 29 presents some typical jug forms relative to the human dimension (all reduced to 5% of full scale). As with bowls and jars, this figure clearly illustrates the size range of typical jug forms. Some variation may be found in the broader Transjordanian jug corpus.

Typology and Chronology

The emphasis of this chapter has been the standardization of vessel name terminology in order to clarify and facilitate the description and analysis of ancient Transjordanian pottery for the purpose of fine-tuning form-based ceramic typology. To this end, the “form-based paradigm” offers objective, mathematically-defined “technical” and “common” names which categorize vessels into bowl, jar, and jug root forms.

The form-based paradigm addresses part of the typological task, namely, the issue of standard morphological terms. The paradigm provides common terminology for pottery typology. Equally important is an understanding of chronology and periodization as used by archaeologists, for the goal of the field archaeologist is to integrate typology and chronology—standardized terminology is simply a means toward that end. Chapter 4 briefly addresses ancient chronology.





Chapter 4:

Summarizing Ancient Chronology

History of Periodization

The system of naming archaeological periods may appear at first to be a collection of names based on technologies (like “bronze” or “iron”), then political empires (like “Persian” or “Roman”), next religious groups (“Byzantine” or “Islamic”), and finally, temporal (“Modern”). This is the result of progressive evolution in period terminology.

In 1819, the Danish archaeologist Ch. J. Thomsen proposed the Three Age System. This system divided early periods into three major “Ages”: the Stone Age, the Bronze Age, and the Iron Age. The names of these ages were supposed to denote the primary industrial material of that ancient time. In other words, stone was used for tools in the Stone Age, bronze in the Bronze Age, and iron in the Iron Age. This was an idealized system based more on philosophy than science. Archaeologists soon realized that a particular material was not used exclusively in that age. For example, stone was used in the Early Bronze Age; bronze was used well into the Iron Age; iron was first used in the Late Bronze Age. Although the system had become accepted, it required modification. Later, as a practical matter, long ages of hundreds of years allotted each “age” was not specific enough for modern stratigraphic archaeology.

A copper-stone age (Chalcolithic Age) was inserted between the last Stone Age (Neolithic) and the Bronze Ages. The Bronze Ages were separated into Early, Middle, and Late Bronze Ages. Ages were then further divided into “periods” I, II, III (largely by W. Albright) and “sub-periods”

A, B, and C. So, archaeologists now deal with cultural periods such as EB IV C or Iron II A. Following the Iron Age, comes the Classical periods (political) which are subdivided: Hellenistic (Greek), and Roman; and then, Religious periods: Byzantine (Christian) and Islamic. The Islamic periods were also separated by religio-political subdivisions, based on the location of the capital or rival capitals (Caliphates) of the ruling dynasty.

In Transjordan, periodization has largely been adopted from Cisjordan. Some political and historical events in Cisjordan have little relevance for Transjordan, and therefore increasing effort is being made to establish a more Transjordanian-based periodization for the region. In particular, there is currently an increasing move toward re-arranging the Islamic periods in accordance with changes in the material culture rather than political or religious events (see especially, Whitcomb 1992).

Relative and Absolute Chronology

Period terminology refers to a "relative" chronology, (*i.e.*, one artifact is older or younger than another). Periodization suggests relative order and succession. It deals with the evolution in the shapes and forms of ancient artifacts, not primarily with absolute historical dates. While the cultural periodization is generally agreed upon by contemporary archaeologists, the actual historical dates are subject to minor adjustments. "Absolute" chronology refers to actual dateable events derived via textual material cross-referenced between cultures (such as Egyptian king lists and texts, critically assessed). The periodization presented here is relative and any association with historical dates is subject to scholarly debate.

Archaeological Periods

When being introduced to archaeological periodization, it is important to become acquainted with not only the basic chronology, but also with issues that impact chronology. The archaeological periodization in table 8 provides the basic chronological framework used in this book. The first column represents the separation of the periods used herein. The second column provides typical abbreviations for the periods encountered in published materials. The third column suggests historical dates. The fourth column provides alternative periodizations which have been popular in the past or are currently being suggested.

Period	Abbr.	Dates	Alternate Periodization
Late Neolithic	LN	ca. 6000 - 4300 BC	
Chalcolithic	Chalco	ca. 4300 - 3500 BC	
Early Bronze	EB	ca. 3500 - 2000 BC	
<i>EB I</i>		ca. 3300 - 3050 BC	
EB I A		ca. 3300 - 3150 BC	
EB I B		ca. 3150 - 3050 BC	
<i>EB II</i>		ca. 3050 - 2700 BC	
<i>EB III</i>		ca. 2700 - 2300 BC	
EB III A		ca. 2700 - 2500 BC	
EB III B		ca. 2500 - 2300 BC	
<i>EB IV</i>		ca. 2300 - 2000 BC	
EB IV A		ca. 2300 - 2200 BC	
EB IV B		ca. 2200 - 2100 BC	
EB IV C		ca. 2100 - 2000 BC	
Middle Bronze	MB	ca. 2000 - 1550 BC	
<i>MB I</i>		ca. 2000 - 1800 BC	¹ Middle Bronze II A
<i>MB II</i>		ca. 1800 - 1550 BC	¹ Middle Bronze II B-C
Late Bronze	LB	ca. 1550 - 1200 BC	
<i>LB I</i>		ca. 1550 - 1400 BC	
LB I A		ca. 1550 - 1500 BC	
LB I B		ca. 1500 - 1400 BC	
<i>LB II</i>		ca. 1400 - 1200 BC	
LB II A		ca. 1400 - 1300 BC	
LB II B		ca. 1300 - 1200 (1150) BC	
Iron	Iron	ca. 1200 - 332 BC	
<i>Iron I</i>		ca. 1200 - 925 BC	
Iron I A		ca. 1200 - 1150 BC	
Iron I B		ca. 1150 - 1000 BC	
Iron I C		ca. 1000 - 925 BC	¹ Iron II A
<i>Iron II</i>		ca. 925 - 539 BC	
Iron II A		ca. 925 - 722 (732 or 701) BC	¹ Iron II B
Iron II B		ca. 722 - 539 (600 or 586) BC	¹ Iron II C
<i>Iron III</i>		ca. 539 - 332 BC	¹ Iron II/Persian
Hellenistic	Hel	332 - 63 BC	
Roman	Rom	63 BC - AD 324	
<i>ERom</i>		63 BC - AD 135	
<i>LRom</i>		AD 135 - 324	
Byzantine	Byz	AD 324 - 640	
<i>EByz</i>		AD 324 - 491	
<i>LByz</i>		AD 491 - 640	
Early Islamic	EIsl	AD 630 - 1174	
<i>Umayyad</i>		AD 630 - 750	² Early Islamic 1 AD 600-800
<i>Abbasid</i>		AD 750 - 969	² Early Islamic 2 AD 800-1000
<i>Fatimid</i>		AD 969 - 1171	² Mid. Islamic 1 AD 1000-1200
Seljuq-Zengid		AD 1071 - 1174	² Mid. Islamic 2 AD 1200-1400
Crusader		AD 1099-1187	
Late Islamic	LIsl	AD 1174 - 1516	
<i>Ayyubid</i>		AD 1174 - 1263	
<i>Mamluk</i>		AD 1250 - 1516	² Late Islamic 1 AD 1400-1600
Ottoman	Ott	AD 1516 - 1918	² Late Islamic 2 AD 1600-1800
Modern	Mod	AD 1918 - Present	² Modern AD 1800-?

 Table 8. Archaeological periodization (¹often used; ²Whitcomb 1992).

The Stone Age

The Late Neolithic period. The Late Neolithic period has been generally dated *ca.* 6000 to 4300 B.C. The Neolithic period (meaning, the "new" stone age) marks the first appearance in Transjordan of pottery with the presence of dark-faced burnished ware. It is therefore called by some, the "Pottery Neolithic." Almost always when archaeologists speak of "Neolithic" they mean this pottery Neolithic phase. The Late Neolithic period may be subdivided into LN I (the Yarmukian culture and the "Jericho PNA stratum IX" material from Dhra') and LN II (the "Jericho PNA stratum VIII" material from Grubba). Late Neolithic I and II are also referred to as Pottery Neolithic A and B elsewhere.

The appearance of pottery in the Late Neolithic period coincided with the more general "revolution" in life and culture which involved the domestication of animals, the rise of villages, and adaptation of agriculture. Villages were often located at wadi mouths. Larger towns (such as Baida near Petra) were atypical. Pottery was constructed by hand on reed mats.

The LN I Yarmukian culture (associated with 'Ayn Ghazal, 'Ayn Rahub, Jabal Abu Thawwab, Tabaqat al-Buma, and Wadi Ziqlab) continued the lithic industry typical of the aceramic Neolithic period. Figurines were both anthropomorphic and zoomorphic. There was trade with coastal sites and sites to the north. Yarmukian architecture included rectilinear and rounded buildings. Pits were used for storage and rubbish. The culture at Dhra' was characterized by pit dwellings and a flint industry resembling that of the Yarmukian culture. The LN II culture is associated with Abu Hamid, Ghrubba, Sahab, Tall ash-Shuna (North), and Tulaylat al-Ghassul. The manufacture of flint tools continued. Pit dwellings characterized the Transjordanian domestic architecture. The Late Neolithic period transitioned into the Chalcolithic period.

The Chalcolithic period. The Chalcolithic period has been generally dated *ca.* 4300 to 3500 B.C. The Chalcolithic ("copper-stone") period received its name because of the transition in technology which brought about a wider use of copper in metal implements. The Chalcolithic period marks a change in settlement patterns as compared to the Late Neolithic: settlement appears at the desert fringe. Dolmens, megalithic architecture associated with burials and seasonal cache sites, first appeared in this period and continued into EB I. Ossuaries (secondary burial bone boxes) were unique to the Chalcolithic period in Transjordan. The domestication of plants and animals continued and remained a permanent character-

istic of economic life. The use of the tournette (sometimes called a "slow" potter's wheel) in ceramic manufacture (along with continued use of the reed mat) is a hallmark of Chalcolithic pottery. The Chalcolithic period transitioned into the Bronze Age.

The Bronze Age

The Bronze Age (divided into Early, Middle, and Late Bronze) follows the Chalcolithic period, and received its name from the dominant use of bronze (a mixture of tin and copper) in metal working. The Bronze Age transitioned into the Iron Age.

The Early Bronze Age. The Early Bronze Age (ca. 3500 to 2000 B.C.) is divided into EB I-II-III-IV (with subdivisions). The Early Bronze culture was "distinguished from Chalcolithic by changes in social organization and material culture" (Brown 1991: 176) and evidenced "strong continuities and developmental trends from EB I through EB IVA" (p. 179).

The Early Bronze I period. The EB I period was transitional. Occupation occurred in small, open villages and at cave sites. Dolmens (which first appeared in the Chalcolithic period) continued to be used. Burial sites included caves, shaft-tombs, and cyst-burials. Trade along the north-south trail (later, the "King's Highway") probably dated to this period. The EB I ceramic corpus was clearly distinguished from the Chalcolithic, although some continuity existed.

The Early Bronze II-III period. The EB II and EB III periods were so similar that "EB II-III" can be generally treated together in terms of pottery culture. The EB II period was the first "urban" period in Transjordan, that is, the EB II period marked the rise of true town-sites. Towns were located near water sources: springs, wadi mouths, etc. Some EB II sites were no longer occupied in the EB III period, while very few new EB III sites were established (such as Tall al-'Umayri). North-south trade along the "King's Highway" continued during the EB II-III period. Settlement at the very end of the EB III period may have become more nomadic. In the EB II-III period, burial practices utilizing cave burials, shaft-tombs, and cyst-burials continued, while charnal houses (as at Bab edh-Dhra) were rare. Several vessel types were found throughout the EB II-III periods which were a development of EB I forms. "EB II-III ceramics represent a more standardized repertoire" than in EB I, with "a less clear-cut dichotomy between the kinds of vessels found in burial deposits and those associated with occupational contexts" (Brown 1991: 180).

The Early Bronze IV period. The EB IV period was a transitional period preceding the MB I period. Evidence of the EB IV period is scarce in Syro-Palestine, except in Transjordan where it provides the missing link between EB III and the Middle Bronze Age, and, at the same time, remains distinctively Early Bronze. Typical EB IV settlement was no longer predominantly sedentary, but rather almost entirely nomadic (an exception being Khirbet Iskander with its town wall and tower). Because of the general lack of sedentary occupation sites, EB IV cemeteries were isolated (such as at Khanazir) and not associated with townsites or tells. However, the occupation of several sites along its path indicates possible continued trade along the "King's Highway." Ceramics of EB IV A represent a continuum from EB II-III in respect to technique, surface treatment, and form.

The Middle Bronze Age. The Middle Bronze Age has been generally dated ca. 2000 to 1550 B.C. The beginning of the Middle Bronze Age has been traditionally seen as transitional, hence, the EB IV is sometimes called MB I (or the "EB IV/MB I transition"). This terminology is especially true of periodizations which divide the Middle Bronze Age into MB II A and MB II B-C, with no separate MB I. However, though "relatively unknown" due to the paucity of excavated settlements (and therefore, of published pottery), some see that the "Middle Bronze Age ceramic tradition represents a clear divergence from the preceding EB IV period" (Brown 1991: 184) as well as continuities. In periodizations that see a separate MB period distinct from the EB IV period (as in this book), the Middle Bronze Age is divided into MB I and MB II, and the EB IV stands on its own as a distinct period from MB I. Therefore, MB I in this book = MB II A found elsewhere, and MB II = MB II B-C (for a discussion, see Brown 1991; Dever 1973, 1980).

The Middle Bronze I period. The MB I period evidenced a transition in settlement patterns from the more nomadic movement of the EB IV period into a more sedentary system. The MB I period also marked a transition in settlement location from non-tell to what have become tell sites with subsequent layers of ancient cities. The MB I period evidenced the first appearance of true "tin" bronze (the "bronze" of the Early Bronze period being more properly a "copper"). In terms of pottery technology, the MB I period witnessed the appearance of the weighted potter's wheel (sometimes called a "fast" wheel) which enabled the development of sharply articulated rim and wall profiles.

The Middle Bronze II period. The MB II settlements were a continuation of tell occupation, including the advent of large rampart fortifications and the rise of monumental architecture (such as civic complexes, etc). North-south trade along the "King's Highway" is implied by the presence of several sites, but still sparse. During the MB II period, burials in chamber-tombs began, while the use of caves and shaft tombs continued (some re-used and some newly-carved). This burial characterization continued into and throughout the Late Bronze Age. Ceramic imports from the Aegean region (via the Jezreel Valley in Cisjordan) first appeared in Transjordan during the latter part of the MB II period (see table 9). The Middle Bronze Age transitioned into the Late Bronze Age.

Imported Ware	Period
Cypriot White Slip I	Very late MB II and LB I LB II
Cypriot White Slip II	
Base Ring I	Very late MB II and LB I LB II A-B
Base Ring II	
Mycenaean I	MB II
Mycenaean II	LB I
Mycenaean III A	LB II A
Mycenaean III B	Early to mid-LB II B
Mycenaean III C1a	(Appears only in Cyprus)
Mycenaean III C1b	Iron I
Late Minoan I-II	LB I
Late Minoan III A	LB II A
Late Minoan III B	LB II B

Table 9. Comparison of imported wares and periods.

The Late Bronze Age. The Late Bronze Age (ca. 1550 to 1200 B.C.) is divided into LB I and LB II periods (each subdivided).

The Late Bronze I-II period. The LB I period was brief and transitional between the Middle and Late Bronze Ages. The LB II period is not yet thoroughly excavated at many sites in Transjordan and the nature of its settlement is currently undetermined. Evidence is too sparse to currently reconstruct economic and trade patterns on a detailed scale. Based on the surface sharding and some excavation, LB I-II settlement appears to be

diminutive on tells (north of the Wadi Zarka), and is more sedentary towards the south (characterized by isolated shrines and burials). Compared with previous periods, the LB I-II period marked an increased Egyptian presence in Transjordan evidenced by scarabs, frit/faience ware, and iconography on stelae, as well as references to Transjordanian locations in Egyptian literature of the period. What has been excavated and published regarding the LB I-II period (represented by only about 10 sites, mostly north of the Wadi Zarqa) appears to indicate that the MB II, LB I, and LB II periods can be separated on the basis of imported wares such as Cypriot White Slip "milk" ware, Base Ring ware, Mycenaean ware, and Late Minoan ware (see table 9). Seeking to understand indigenous Transjordanian cultural changes by noting the variations in imports is of questionable value, especially when attempting to relate imported wares to the domestic wares and occupation of the average people.

There appears to be more distinction between LB I A period and LB I B period forms than between LB I and LB II forms (see Brown 1991: 193). The LB I B period forms have been seen as degenerations of the Middle Bronze pottery in terms of stylization and manufacturing techniques. The Late Bronze Age transitioned into the Iron Age.

The Iron Age

The Iron Age (*ca.* 1200 to 332 B.C.) has been divided into the Iron I and Iron II periods which were (traditionally) followed by the Persian period, the Hellenistic period, etc. Many archaeologists use an "Iron I-II-II/Persian or II C/Persian" framework. This book follows the Iron I-II-III periodization framework where Iron I in this book = Iron I found elsewhere; Iron II A, here = Iron II A, elsewhere; Iron II B = Iron II B-C; and Iron III = Iron II/Persian. Careful attention to the dates provided in table 8 will be helpful should the need for clarification arise.

Iron I and II are divided into A and B, according to historical events. In Transjordan, however, while Persian cultural influences were evidenced, there is yet to be clearly defined a separate "Persian" historical period *per se*. Therefore, the period where these Persian influences occurred is called the "Iron III period" rather than the Persian period. In fact, the available published materials do not maintain the separation of the two [the Iron II and Persian] periods. The main bulk of ceramics continued to be the same down to the fifth and fourth centuries B.C. Of course during this period some prestige items were imported either from Persia or Greece (Najjar 1996, personal communication).

Unpublished material seems to indicate that the Persian influence may be better clarified in the near future, but for the present, Iron II-III is treated as a single period in terms of pottery culture, with appropriate acknowledgment to cultural influences. In terms of pottery, in Cisjordan, Iron I is associated with red slipped, hand-burnished wares, while Iron II A-B is associated with red slipped, wheel-burnished wares. This also seems to hold true for Transjordan. In Transjordan, Iron III is associated with black ware.

The Iron I period. The Iron I period was somewhat transitional. The ending of the Iron I period (associated by archaeologists to *ca.* 925 B.C.) is related to Pharaoh Shishak's incursion into Syro-Palestine (more attested archaeologically in Cisjordan than in Transjordan). The Iron I period is typically divided into Iron I A-B-C. Iron I A is associated with Mycenaean III C1b ware in Cisjordan; Iron I B, with Philistine Bichrome ware in Cisjordan; and Iron I C, with the advent of red-slipped wares in Cisjordan. However, only red-slipped ware appears with any frequency in Transjordan, making the Iron I A-B-C division somewhat arbitrary at this time. There is some possibility of dividing the Transjordanian period by other indicators, perhaps multicultural surface treatment pattern motifs, etc., however this remains to be determined. The metal repertoire of the Iron I period continued to be dominated by bronze until about 1000 B.C. when smelted iron became more prominent. The Iron I settlements were tell sites. Settlement walls (some casemate) and ramparts continued in use or were built. Monumental architecture continued. Burials occurred in nearby cemeteries (in predominantly shaft and chambered tombs).

The Iron II-III period. Archaeologists date the beginning of the Iron II-III period *ca.* 925 B.C. and ending, *ca.* 332 B.C. with the arrival of Alexander the Great. Iron II sub-periodization dates are currently associated with Cisjordanian events: the end of the Iron II A period with either the fall of Samaria (*ca.* 722 B.C.) or the fall of Damascus (*ca.* 732 B.C.) or the invasion of southern Cisjordan by the Assyrians (*ca.* 701 B.C.); and the end of the Iron II B period with either the rise of the Persian empire (*ca.* 539 B.C.) or the destruction of Jerusalem (*ca.* 586 B.C.). Neither the Babylonian assertion of power during the reign of Nebuchadnezzar II nor the Persian inheritance of nominally Babylonian-held Transjordan following the Persian conquest of Babylon resulted in much measurable cultural change in pottery. An ending date of *ca.* 600 might be more appropriate for the end of the Iron II B period in Transjordan as this marks the approximate date that Ammon, Moab, and Edom became vassal states of Babylon.

The Ammonite, Moabite, and Edomite cultures flourished in the Iron II period, in large part due to trade along the "King's Highway." Iron II settlement continued with tell occupation. Monumental architecture increased dramatically. Few burials have been excavated at tell sites, but some evidence is available that Iron II cemeteries may have remained near the settlement. Agricultural settlements (farmsteads and towers) increased. Sedentarized settlement seems to have broadened in almost all aspects: number of sites, density of occupation, amount of agricultural, number of population, etc.

Iron III Persian cultural influences in Transjordan are just being recovered archaeologically and therefore information on this period is growing with each field season. Some administrative small finds (seals, etc.), monumental architecture, culturally-distinguishable pottery, and some field towers (rujim) seem to indicate identifiable Persian influences in Transjordan. Coinage first appeared throughout the Levant during the Iron III period. The Iron Age in Transjordan is understood to have ended *ca.* 332 B.C. with the advent of Alexander the Great and the resulting Hellenistic cultural influx.

The Classical Periods

With the close of the Iron Age, archaeologists begin referring to ancient epochs according to historical political and religious events.

The Hellenistic period. Transjordanian political organization during the Hellenistic (Greek) period followed the political fortunes of the Ptolemies, Seleucids, and Hasmonaeans. The Ptolemies followed in succession after the death of Alexander the Great. Ptolemaic control of Transjordan was characterized by a veneer of centralized authority and complex political subdivisions which had marginal effect on the local material culture—outside of the effects of trade and resultant imports. Victorious in a series of internecine wars between the Ptolemaic and Seleucid heirs of Alexander's empire, the Seleucid administration consolidated the Ptolemaic civil organization and established some rather autonomous cities in northern Transjordan such as Abila. The urban Hellenizing trend weakened toward the south, resulting in a highly Hellenized northern Transjordan and a more Arabic southern Transjordan. The role of the Nabataeans in southern Transjordan began to grow at this time.

Most of the third century B.C. in Syria-Palestine was taken up by extensive war. There were four Syrian wars fought in attempts to displace Ptolemaic rule in the area. ... It was against this violent

backdrop that the Late Hellenistic period in Transjordan unrolled (Mitchel 1992: 36).

The Hellenistic period witnessed a dramatic technological and economic growth in Transjordan: an improved plow, use of the Archimedian screw in irrigation, a new type of wheat, crop rotation (using lupin as a cover crop), etc. Hellenistic settlement marks the appearance of several large sites but otherwise sparse outlying population. Hellenistic town planning (those built or rebuilt in Hellenistic) included a regular pattern of rectangular town blocks (such as Philadelphia, modern Amman) with a large open space (Agora) for a marketplace. There was some local minting of coins in the Hellenistic period. The Hellenistic ceramic repertoire is easily differentiated from the later Nabataean and Roman corpora (see the period characterizations, below). The Early Roman and Nabataean assemblages show continued development of forms and wares derived from the Hellenistic corpus.

The Roman period. Archaeologists date the Roman period in Transjordan from about 63 B.C. (the conquest of the region by Pompey in the name of Rome) to about A.D. 324 (the conversion of Roman emperor Constantine I to Christianity). These are convenient dates which, although they do not directly impact the Transjordanian pottery culture, do serve to separate the period in a useful way.

Transjordan was part of the *Provincia Arabia*. With Roman control of Transjordan came an increased focus on the north-south trade corridor from Syria to Egypt which would define Transjordanian existence and culture over the next few centuries. The Roman road system facilitated economic activity, communications, and travel, but especially military traffic and it is therefore no wonder that much road development was in the hands of the military. The main north-south road, essentially following a route used for centuries (the old "King's Highway"), was the *via nova Traiana* from Syria to the Red Sea (built A.D. 111-114). The *limes* road system skirted the eastern frontier and was built to facilitate military maneuvering. There were significant earthquakes in 31 B.C. and in A.D. 130.

Roman period settlement patterns relied less on local water sources than on road systems and trader networks. Trade/travelers' houses (caravanserais) were built along the roads. Roman city planning modified Hellenistic designs from a rectangular pattern to square with major intersecting main streets and centralized administrative buildings. The Roman "forum" replaced the Greek "agora" (see Petra, Jerash, etc.). Towns were built with fewer walls. Roman period burials included several types

ranging from simple cysts and shaft tombs to very extensive multiple loculi tombs with interior architecture reminiscent of Roman house planning.

The Early Roman period. During the Early Roman period, the availability of convenient road systems for communication and travel greatly impacted Transjordanian life and the resulting material culture by making trade and travel more convenient and safe. New "industries" such as tourism and meeting traveler's needs provided economic augmentation to more traditional lines such as animal husbandry and agriculture. Import/export became big business with imports from Arabia and Egypt far out-valuing exports to the west. Glass was first manufactured industrially (as opposed to natural glass from lightning strikes, etc.). Coinage became common and therefore left a nearly unbroken archaeological trail.

(Although a warning might be entertained about the relation of coins to archaeological periodization. Due to the inherent value of coins, they were kept in ancient times, just as today, for many years after being minted and first circulated. Therefore, coins may provide a convenient beginning date for the associated strata, but say little or nothing about the ending date. That is, a particular stratum *could not* date *before* a certain coin was minted, but *could* date to any time *after* the coin. Therefore, pottery typology still remains the best way of determining relative chronology.) There was a steady and general rise in population during the Early Roman period.

The Late Roman period. As imperial attention in the latter centuries became less focused on the provinces, a greater political autonomy began to be felt in Transjordan. By the 2d century A.D., many villages had a complex system of local officials who operated somewhat independent from direct Roman rule, including controlling the minting of coins. Trends which began in the 2d century A.D. continued in the 3d century: rising population, increasing autonomy, accelerating inflation and currency devaluation, and decreasing social order. Toward the end of the Late Roman period, Roman government reasserted itself in Transjordan in an attempt to restore control and stability. The southern portion of *Provincia Arabia* was reorganized as *Palestina III* which had the effect of stimulating trade and building, and served to reverse, somewhat, the downward spiral earlier in the period. Yet the Roman political bureaucracy became more complex (with resultant inefficiencies), wage/prices continued to inflate, and taxes continued to rise. Farming became less practical which encouraged a depopulation of rural areas (in favor of the cities) and a marked decrease in agricultural production. The state took over control of certain essential

industries as well as import/export trading. Trade reached as far as China and India, but more locally, Iraq, Iran, Yemen, and Hadhramaut.

The Byzantine period. Archaeologists date the Byzantine period (also called the "Early Church" period by some) from about A.D. 324 to 640. Early and Late Byzantine are divided at about A.D. 491 (the beginning of the reign Anastasius I). There were significant earthquakes in A.D. 363, 502, and 551. The Byzantine period witnessed a transition in the "official" religion in Transjordan from the Roman/Greek pantheon to Christianity, with the resulting conversion of Roman temples into Christian churches. As the period progressed, more and more material culture decorations reflected Christian motifs (lamps, plates, mosaics, etc.). Otherwise, the Byzantine period marked a continuation of the Late Roman period in many respects: a steady growth in population and settlement patterns in direct progression from the Roman period. Inscriptions and coinage continued to use the Latin language. Population in Transjordan reached its peak during the Byzantine period, not surpassed until the late 19th century A.D. The ending of the Byzantine period at *ca.* A.D. 640 coincided with the end of a decade-long war between Islamic and Byzantine forces which resulted in the expulsion of the Byzantine armies from the Levant.

The Islamic Periods

The Islamic periods spanned from the Islamic victory over the Byzantines in about A.D. 640 until the coming of the Turkish Ottomans in A.D. 1516. Transjordan passed into Islamic hands by about A.D. 636. The Islamic periods get their name from the dominance of the Islamic religion in the Levant, and more specifically, from a simplified list of the ruling lines (often competing lines) of Islamic caliphs: the Umayyads, the Abbasids, the Fatimids, the Seljuqs, the Ayyubids, and the Mamluks (see Russell 1989: 27-34; Sauer 1982: 329-337). These changes were not always immediately reflected in pottery culture. In fact, the cultural divisions during the Islamic periods were more characterized by moderate succession and progression, than stark contrast and dramatic change. The framework by which the periods are currently divided has been found increasingly inadequate in terms of material culture. The alternative chronological framework offered by Whitcomb (1992) recognizes the arbitrary nature of the current historical divisions, but introduces its own arbitrary chronology by separating the periods into 200-year blocks. It is now generally agreed that there are identifiable differences between the Early and Late Islamic

periods, along with stylistic variations between sub-periods, but that the major ceramic trends continue throughout the periods. This succession/progression concept is evidenced in the transition from Christianity to Islam for while the conversion was, no doubt, tumultuous in some ways (as exemplified by wars between Islamic and Byzantine forces), at the level of the common people, the transition seems not to have been such the bloody revolution or forced conversion once thought. There was a continuity of Christian material culture (pottery, architecture ... including the use and repair of churches, etc.) well into the Abbasid period paralleled by a moderate and steady increase in Islamic culture. Generally, only in the Fatimid period (some 300 years after the end of the Byzantine period) can a "mosque" be clearly identified as an Islamic place of worship. Population during the roughly 900 years between the Islamic conquest and the Ottoman conquest fell by almost 90%.

The Early Islamic period. The Early Islamic period, *ca.* A.D. 630 to 1174, overlapped the Byzantine period by about ten years and encompassed the caliphates of the Umayyads, the Abbasids, and the Fatimids. The later Fatimid rule overlapped both a number of petty caliphates, notably the Seljuq-Zengids, and also the invading European Crusaders.

The Umayyad period. For a brief time, beginning *ca.* A.D. 636, Islamic Arabs controlled Transjordan. In A.D. 661, the capital of the Umayyad caliphs was established in Damascus. Its proximity to Transjordan, as well as the pilgrimage route which passed through, brought continued growth and prosperity. Most Late Byzantine sites continued to be occupied into the Umayyad period. New sites were located in the Jordan valley and the eastern desert. Except for the specific locations of battles between Islamic and Byzantine forces early in the period, there was no widespread or immediate change in material culture. The dominant lifestyle combined agriculture with animal husbandry. Although most churches fell out of religious use during this period, conversion to Islam was not demanded nor particularly encouraged by the strongly Arab Umayyads. Umayyad period mosques are not common in the archaeological record. Obviously, the system of forts along the old Roman and Byzantine *limes* ceased to be used as a barrier against Arabs. The language of inscriptions and coinage transitioned from Latin to Arabic. There appears to have been a series of earthquakes towards the end of the Umayyad period, including a major earthquake in A.D. 747. These temblors destroyed many of the older,

stone-constructed cities, some of which were not rebuilt to their former extent.

The Abbasid period. The Abbasids overthrew the Umayyads in A.D. 750 and established the caliphate in Baghdad. The removal of the center of the Islamic power from the region resulted in Transjordan languishing in somewhat of a backwash. The new pilgrimage route from Baghdad (the Kufa-Mecca road, called the "Darb Zubaydah") contributed to Transjordan's isolation. Most major Umayyad sites in Transjordan were abandoned or greatly reduced in size with the rise of the Abbasids and the Abbasid period is not well represented in Transjordan. Settlement seems to have been in smaller, rural villages. Water-powered sugar mills, more economically significant in later periods, may have been established during this period. Aqaba was the primary trade city, a port which provided contact with Iraq, India, and China. Revised taxation policies encouraged conversion from Christianity to Islam, although non-Islamic peoples had definite legal protection. Direct Abbasid control over regions in Syria and Transjordan began to weaken in the mid-13th century and political power was increasingly divided among petty caliphs.

The Fatimid period. The Fatimid period is also not well-attested in Transjordan. From the paucity of Fatimid sites and occupations, it seems the decline of the Abbasid period continued in this period. Very few major sites remained occupied, with Fatimid occupation generally being smaller villages or rural sites.

The Seljuq-Zengid and Crusader periods. These periods overlapped the later Fatimid rule. The Seljuq-Zengid period was one of several during which petty caliphates ruled portions of Transjordan. Also during the later Fatimid period, Christian Crusaders invaded the Levant with repercussions in Transjordan (notably, Crusader "Castles" at al-Karak and esh-Shobak.). The Crusaders dominated parts of Transjordan from A.D. 1099 to 1187, and remained in the Levant until A.D. 1291.

The Late Islamic period. The Late Islamic period, ca. 1174 to 1516, spans the time from the expulsion of the Crusaders to the arrival of the Turkish Ottomans.

There is enough current evidence to at least suggest that some of the apparent radical change that characterize Ayyubid-Mamluk assemblages can in fact be traced to developments within the Early Islamic period (Brown 1991: 232).

Again, cultural changes during Late Islamic period were more a matter of progression than of stark contrast. Currently, the Ayyubid and Mamluk

caliphates are treated as a combined cultural period by archaeologists.

The Ayyubid-Mamluk period. The expulsion of the European Crusaders from Transjordan by Salah al-Din ("Saladin") marked the beginning of the short Ayyubid period (which lasted about 70 years until the late A.D. 1250s). The Mamluk period, which spanned from the end of the Ayyubid period to A.D. 1516, saw an initial rise in occupation, including a few of the classical sites. Many sites are evidenced archaeologically from the Ayyubid-Mamluk period, some with substantial remains. This period witnessed the wide establishment of water-powered sugar mills for processing sugar beets (which resulted in specialized ceramic vessels). The presence of such water-intensive sites in wadis that are now relatively dry may suggest slightly increased rainfall during the period. The latter Mamluk period was characterized by increasing political division, foreign invasion, and internecine conflicts. Population, already only one-fourth of what it had been at the time of the Islamic conquest, decreased by a third during the Ayyubid-Mamluk period, largely as a result of the bubonic and pneumonic plagues. Transhumant nomadism replaced sedentary agriculture as the dominant method of producing food. Political control became more tribe oriented for a short period prior to the arrival of the Turkish Ottomans.

This brief characterization of chronological periods has set forth major events and trends which demarcate the non-ceramic culture of the Late Neolithic through Late Islamic periods. The Ottoman and Modern periods are not included within the scope of this book.

In the preceding chapters, the reasons for studying pottery morphology have been explained, the technical aspects of analyzing ancient pottery has been explored, the form-based paradigm for standardizing pottery terminology has been presented, and certain aspects of periodization have been summarized. All of this leads directly to the subject of chapter 5, the ceramic character of the Transjordanian archaeological periods.

Chapter 5:

Characterizing Archaeological Periods

The following characterizations describe the pottery culture during each archaeological period. The characterizations bring together, in one convenient resource, bits of data which are individually published in many places, but which would be troublesome and time-consuming to collect. They fill a gap where current published descriptions are lacking. They provide a quick reference tool for grasping the pottery culture of each period. For the purposes of this book, the period characterizations greatly augment the pottery examples. The following periods are considered: Late Neolithic; Chalcolithic; Early Bronze I, II-III, IV; Middle Bronze I-II; Late Bronze I-II; Iron I, II-III (including the Ammonite, Moabite, Edomite, and Persian cultures); Hellenistic; Early and Late Roman (including the Nabataean culture); Byzantine; Early Islamic (subdivided according to Umayyad, Abbasid, Fatimid, Seljuq-Zengid, and Crusader periods); and Late Islamic (the Ayyubid-Mamluk period). Information regarding the historical nature of these archaeological periods is included in the chronological periodization section (chapter 4, above) and where pertinent to the actual pottery, in the specific period characterizations themselves.

In order to facilitate the study of Transjordanian pottery, this book includes 469 pottery examples selected from published vessels. These are representative of the ceramic corpus from the Late Neolithic period through the Late Islamic period and are included in each period characterization. Of course, there were many more vessel variations extant in a given archaeological period than are possible to provide in the pottery examples,

however, by combining the period characterizations with the various vessel parts (figs. 3-11; tables 1 and 2) a broader spectrum of vessels can be visualized for each period than are provided in the pottery examples themselves.

When studying the many variations in pottery shapes, surface treatments, and technologies, several concepts must be understood. First, while pottery forms constantly changed, they did not always improve. Each period had its mixture of the new and the old, the sophisticated and the mundane. The pottery of any particular period might be more, or less, "advanced" than its predecessors.

Second, each ancient pottery vessel—being custom made by individuals—was invariably unique. Potters had their own styles, techniques, and traditions. While the archaeologist can speak generally of the ceramic corpus of a particular period—such generalization only approximates any given specific vessel.

Third, not all pottery was originally excavated with the same preciseness nor were the various find spots all equally secure stratigraphically. This variability in the quality of the stratigraphy directly impacts the confidence with which the periodization based on such pottery can be held. Generally speaking, vessels (most often sherds) excavated from tells can be dated stratigraphically while those from tombs (more often whole pieces) must rely on typology for their dating assignment. In practice, a combination of stratigraphy and typology normally informs the archaeologist for periodization. Periodization assignments of pottery vessels included in this book are generally those of the authors of the original reports, any exceptions have been noted in the "comments" section of the description accompanying the particular vessel.

Fourth, it is also possible that since vessel styles and potters' traditions did not abruptly begin or end at the arbitrary limits of an archaeological period, a particular vessel could be actually more representative of a different period than the one in which it was found. While it is possible that a particular vessel was found in a specific stratigraphic context, the majority of known examples may have been dated to an earlier or later period. Methodologically, archaeologists associate all artifacts (including pottery) with the latest (*i.e.*, the youngest) period to which it can be dated. (This maxim is particularly important for transitional periods and for less archaeologically-known periods.) The pottery examples selected in this book are related to the period in which they are more typical.

Each period characterization contains four parts. An *Introduction*, *Technique*, *Surface treatment*, and various *Forms* make up the pottery repertoire of that period—each with related pottery examples. The contents of each of these parts are further divided according to specific descriptors (the definitions of which are found in the glossary) which are explained and exemplified in chapter 2 (figs. 3-11; tables 1-3).

The *Introduction* to the period characterization indicates the principal sources from which the characterization was compiled as well as a list of some of the sites currently identified with the pottery culture of that particular period. The map (figs. 30 and 31) indicates the location of sites from which the pottery examples were excavated.

The *Technique* section (subdivided according to entries found in the glossary) is generally introductory and comparative with adjacent time periods. The *Surface treatment* section (also subdivided according to glossary entries) may be supplemented by referring to the pottery examples which include illustrations of many of the treatments in question.

The *Form* section is divided according to “root” vessel forms: bowl, jar, jug, miscellaneous vessels, and vessel parts. Each form is followed by a listing and description of “branch” forms which are specific to that period—referenced, where appropriate, to specific vessels in the pottery examples. Due to the paucity of published materials and the introductory focus of this book, not all branch forms are equally described—a situation which it is hoped can be remedied as future excavation publications become available. The form section is illustrated by pottery examples of the period. The examples are numbered sequentially (#1-#469) from Late Neolithic through Late Islamic. These examples have been scanned from original site reports and have been re-illustrated, made proportional, and a scale indicator showing five centimeters (5 cm) has been added. Since they have been modified for the purposes of this book, any scholarly critique or analysis of the vessels should use the original publication. Each example is accompanied by a brief description on the facing page which includes the citation of its original publication. To facilitate comparison, most vessels are presented at the standard 20% scale, however a few are printed at a reduced scale or unscaled. Each pottery example plate includes a 20% scale. Reduced vessels include a reduced scale printed beside the vessel graphic. Unscaled vessels have a “U” inside the graphic, but have been sized to an approximately realistic scale.

Alphabetical List of Sites

- 44 'Ara'ir ('Aro'er)
 26 'Ayn Ghazal
 9 al-Hammah
 39 al-Muwaqqar
 48 al-Wu'ayra
 29 Amman
 55 Aqeba
 45 Bab adh-Dhra'
 36 Bayt Zar'a
 46 Busayrah
 30 Darat al-Funan
 43 Dhiban (Dibon)
 54 Ghirrah
 32 Ghrubba
 13 Jarash
 21 Jabal abu-Thawwab
 22 Katarat as-Samra
 1 Kh. al-Kursi
 53 Kh. Dor
 42 Kh. Iskandar
 11 Kh. Umm al-Hadamus
 47 Kh. 'Ayn Janyn
 40 Madaba
 38 Mt. Nebo (Siyagha)
 49 Petra
 3 Quwayyiba (Abila)
 27 Rujm al-Hanu
 51 Sadah
 52 Sadaqa
 31 Sahab
 7 Tabaqat al-Burna
 8 Tabaqat FahI (Pella)
 14 T. Abu Hamid
 10 T. Abu al-Kharaz
 19 T. Abu Sarbut
 12 T. abu-Habil
 16 T. al-Hayyat
 25 T. al-Mafaliq
 17 T. al-Mazar
 33 T. al-'Umayri
 15 T. as-Sa'idiyah
 5 T. ash-Shuna (N)
 20 T. Deyr 'Alla
 18 T. Paysal
 37 T. Hisban
 35 T. Iktanu
 6 T. Irbid
 2 T. Jarnid
 24 T. Umm Hammad
 ash-Sharqi
 23 Tiwal ash-Sharqi
 34 Tulaylat al-Ghassul
 28 Umm al-Bighal
 50 Umm al-Biyara
 41 Umm al-Walid
 4 Umm Qays

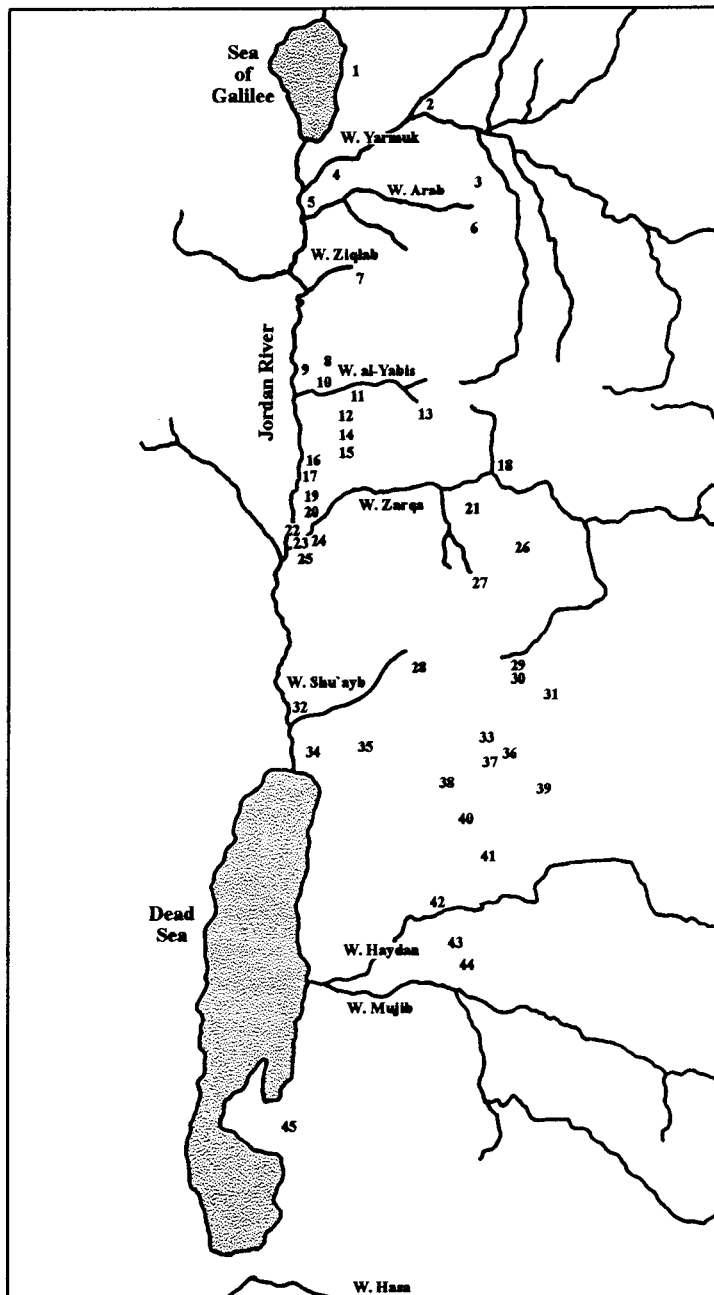


Figure 30. Map of northern Transjordan.

**Numerical
List of Sites**

- 1 Kh. al-Kursi
- 2 T. Jamid
- 3 Quwayliba (Abila)
- 4 Umm Qays
- 5 T. ash-Shuna (N)
- 6 T. Irbid
- 7 Tabaqat al-Buna
- 8 Tabaqat Fahl (Pella)
- 9 al-Hammah
- 10 T. Abu al-Kharaz
- 11 Kh. Umm al-Hadamus
- 12 T. abu-Habil
- 13 Jarash
- 14 T. Abu Hamid
- 15 T. as-Sa'idiyah
- 16 T. al-Hayyat
- 17 T. al-Mazar
- 18 T. Faysal
- 19 T. Abu Sarbut
- 20 T. Deyr 'Ala
- 21 Jabal abu-Thawwab
- 22 Katarat as-Samra
- 23 Tiwal ash-Sharqi
- 24 T. Umm Hammad ash-Sharqi
- 25 T. al-Mafaliq
- 26 'Ayn Ghazal
- 27 Rujm al-Hanu
- 28 Umm al-Bighal
- 29 Amman
- 30 Darat al-Funan
- 31 Sahab
- 32 Ghrubba
- 33 T. al-'Umayri
- 34 Tulaylat al-Ghassul
- 35 T. Iktanu
- 36 Bayt Zar'a
- 37 T. Hisban
- 38 Mt. Nebo (Siyagha)
- 39 al-Muwaqqar
- 40 Madaba
- 41 Umm al-Walid
- 42 Kh. Iskandar
- 43 Dhiban (Dibon)
- 44 'Ara'ir ('Aro'er)
- 45 Bab adh-Dhra'
- 46 Bussayrah
- 47 Kh. 'Ayn Janyn
- 48 al-Wu'ayra
- 49 Petra
- 50 Umm al-Biyara
- 51 Sadah
- 52 Sadaqa
- 53 Kh. Dor
- 54 Ghrarah
- 55 Aqaba

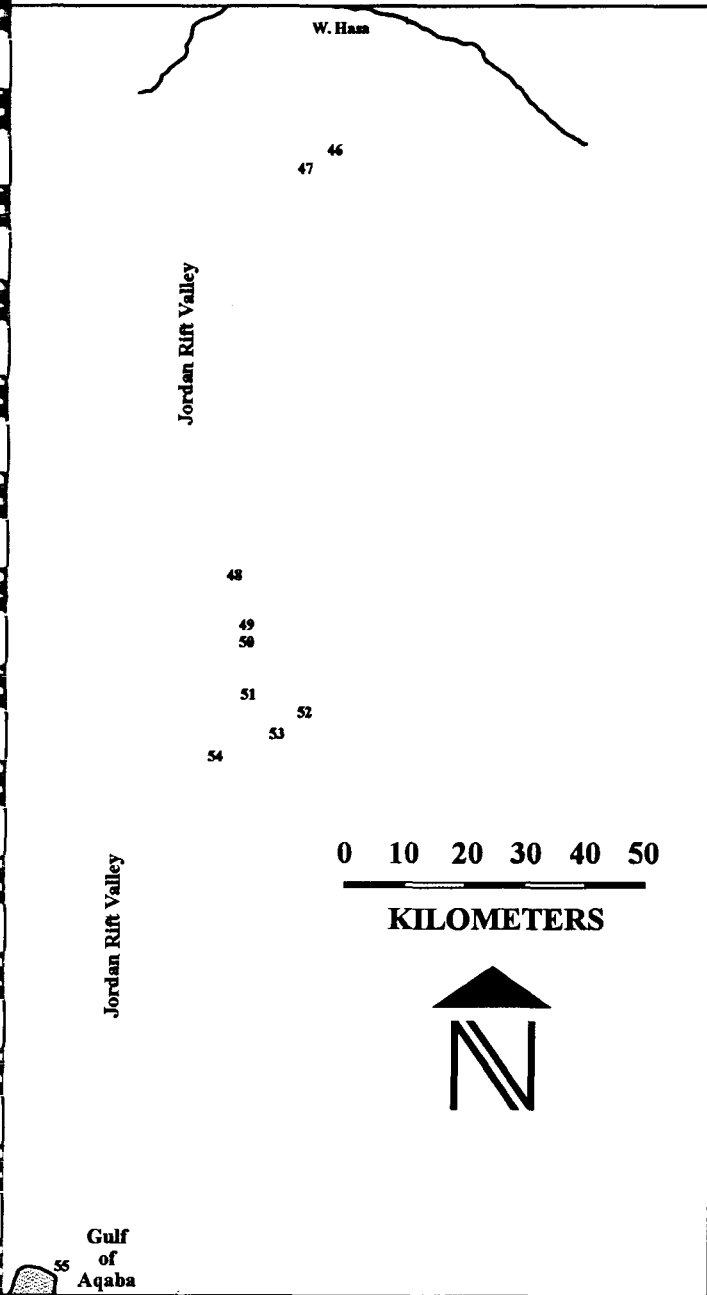


Figure 31. Map of southern Transjordan.

The Late Neolithic Period

Introduction. The Stone Age was predominantly uncharacterized by pottery until the end of the Neolithic period. By definition, there was no pottery earlier than "pottery" Neolithic ("PN"). Dark-faced burnished ware was the first pottery made in the Levant and has been found at several Transjordanian sites. The manufacture of pottery continued into the Chalcolithic period and on down through history, though some forms were largely replaced in part by glassware in the Roman periods and by other materials in later periods. Late Neolithic cultural subdivisions are not entirely clear, especially in the highlands of Transjordan, however there is definitely a separation of two basic cultural groups: Late Neolithic I (LN I), typified by the Yarmukian culture as well as the material from Dhra', and the Late Neolithic II (LN II), typified by the material from Ghрубba.

Some sites currently identified with the LN I pottery culture include 'Ayn Ghazal, 'Ayn Rahub, Dhra', Jabal abu-Thawwab, and Tabaqat al-Buma. All are Yarmukian except Dhra'. Some of the sites currently identified with the LN II pottery culture are Abu Hamid, Ghрубba, Sahab, Tall ash-Shuna (North), Tulaylat al-Ghassul, and Wadi Ziq'lab. The description included here is derived from various Late Neolithic sites (Banning *et al.* 1992; Ibrahim 1987: 73-81; Khafafi 1987: 33-39; 1995: 545-553).

Technique. Ware: Late Neolithic I wares were yellow-green, dark grey, brown, or white. Dark-faced burnished ware, a fine and thin ware, was the first pottery evidenced in Transjordan. Late Neolithic II wares were buff, orange, red, or white, and were also painted and burnished.

Inclusions: In LN I pottery, chert inclusions were pale pink or yellow. Voids in some clay indicate that vegetable tempering was used. Straw and limestone were also used as tempering. Late Neolithic inclusions included coarse and fine grits, notably sand. *Levigation:* The clay of LN I storage vessels was heavy and coarse, while finer levigation was associated with vessels of food consumption. *Manufacture:* Late Neolithic I pottery vessels were generally handmade, but sometimes a tournette was used. Late Neolithic II pottery was also characterized mostly by handmade manufacture, however some forms were made on a tournette as well. The pottery was better made and included new shapes and decorative styles. *Firing:* Firing ranged from well (on thin burnished vessels)-to-poor with a less oxidized core during the LN I period. During the LN II period, firing was medium-to-hard, predominantly hard.

Surface treatment. Slipping: Late Neolithic I slip colors included

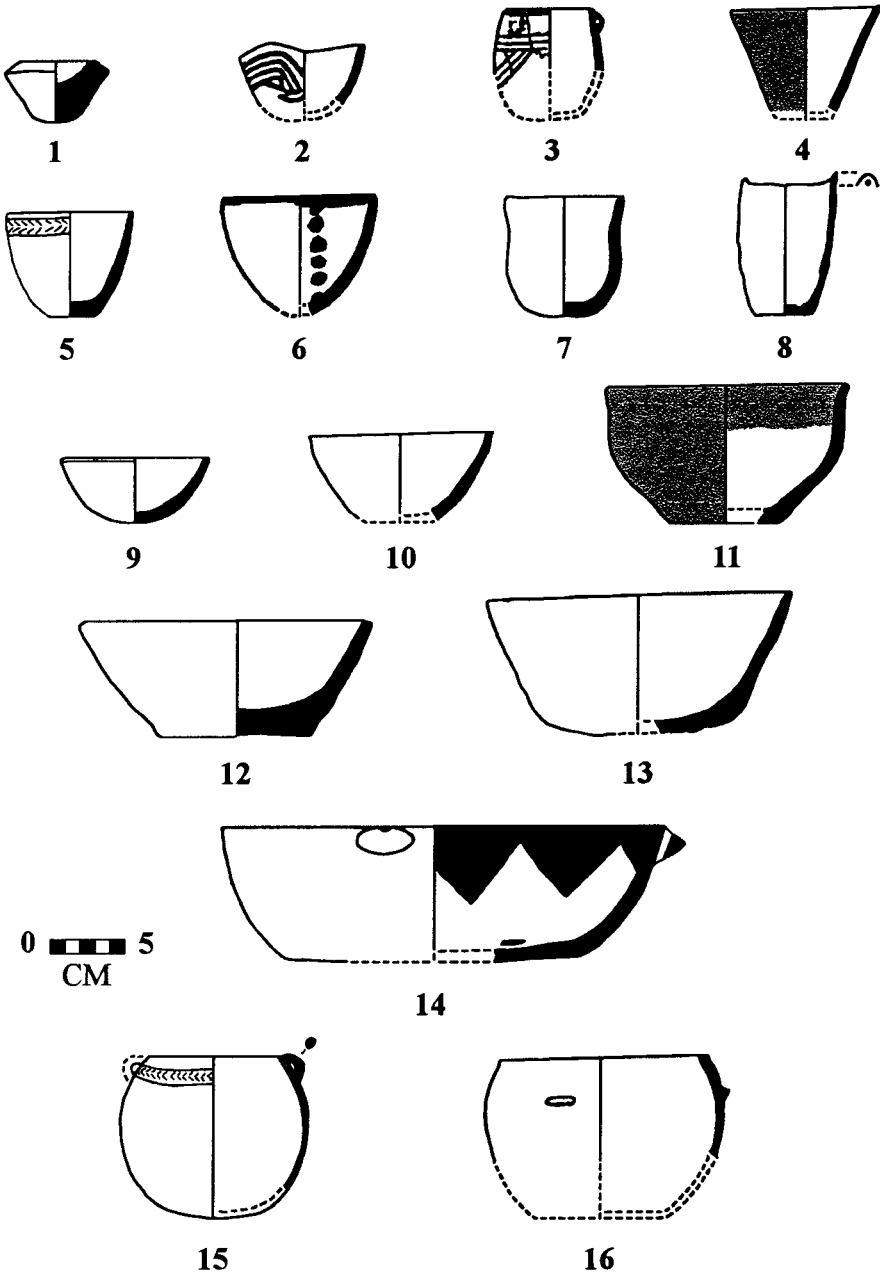
red-to-dusky red and yellow-to-black. Red slip was sometimes applied on the rim, interior, and/or base. Cream slip was used at Dhra'. During the LN II period, vessels were sometimes red slipped (sometimes continuing over the rim). **Burnishing:** Burnishing (by hand) was mostly limited to grey or black wares during the LN I period. At Dhra' the pottery was often burnished. Some burnished vessels may have been imported. Burnishing was also used as a surface treatment during the LN II period. **Painting:** During the LN I period painting was applied infrequently to Yarmukian vessels, but was sometimes added in simple bands of red or brown. Painting at Dhra' consisted of red-painted triangles, lines, and zig-zags. Some painted vessels may also have been imported. Late Neolithic II paint colors included various hues of red. Paint color finishes were both matte and lustrous. Painting styles included bands, chevrons, dots, simple lines, and triangles.

Appliqué: Knobs, possibly handles, were applied to the exterior of LN I vessels. **Incising:** Late Neolithic I incising included chevrons, herringbones (a series of chevrons), horizontal lines, points (punctate), triangles, and zig-zag—either individually or in combination. Combing included diagonal and wavy designs (in horizontal or alternating bands). Notching was employed. Late Neolithic II incising included herringbone designs below the rim. **Indenting:** Finger indenting was applied on clay bands and on ledge handles during the Late Neolithic period.

Forms (pottery examples 1-21). **Bowls:** Bowl forms included biconical bowls, carinated bowls, V-shaped bowls, cups, plates, and other bowls. Bowl lip profiles included flattened, rounded, squared, and thinned styles. Bowl rim profiles were generally simple. Bowl rim inflections were generally curved or straight. Bowl wall profiles included conical, cylindrical, and globular styles. Smaller bowls often had a red-slipped exterior. Larger bowls were sometimes red-slipped both inside and out, sometimes with yellow-to-black banding and burnished all over. **Jars:** Jar forms included bow-rim jars, holemouth jars, storage jars, and other jars. Jar lip profiles were generally flattened or rounded. Jar rim profiles were simple or flattened. Jar rim inflections were generally straight. Jar wall profiles were globular or piriform. Jar neck profiles were conical or curving. Certain LN II jars, sometimes referred to as "bow-rim" jars, were constructed with an incurved rim inflection which formed a curved neck. **Jugs:** There are no jugs currently published from the Late Neolithic period. **Vessel parts:** Bases included curved, elevated (rare), flat (more common), and ring styles. Handles included knob, ledge, loop, and strap styles.

80 ANCIENT POTTERY OF TRANSJORDAN

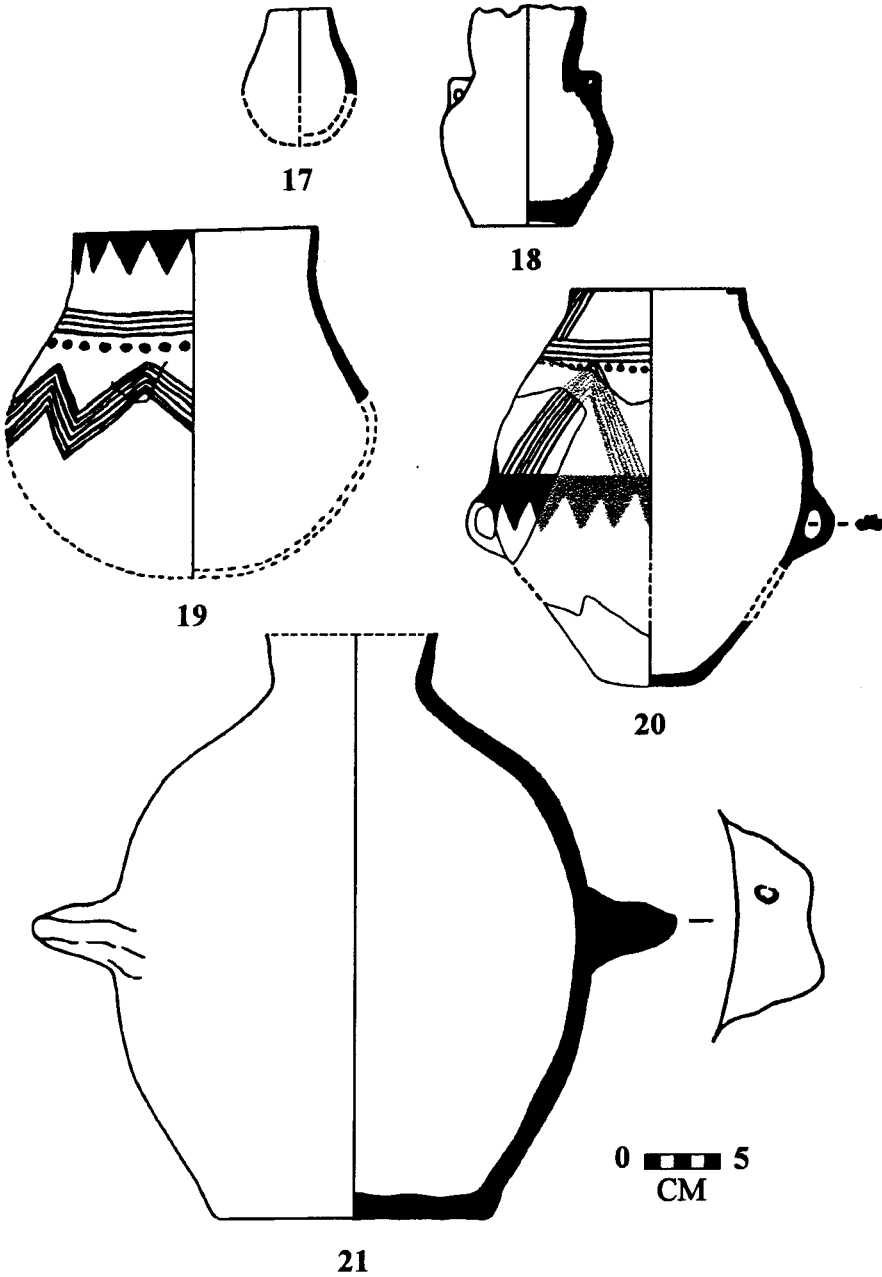
No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
1	Bowl	Open	very small	intermediate	<i>Technique: Ware: Color: white</i>	'Ayn Ghazal	Kafafi 1990: 24 (fig. 7:11)
2	Bowl	Open	very small	intermediate	<i>Technique: Ware: Color: buff; Inclusions: Fine grits; Firing: Hard; Surface Treatment: Painting: Matte red; Smoothing</i>	Ghrubba	Mellaart 1956: 37 (fig. 5:81)
3	Bowl (cup)	Open	very small	deep	<i>Technique: Ware: Color: buff; Inclusions: Fine grits; Firing: Hard; Surface Treatment: Painting: Matte red; Smoothing</i>	Ghrubba	Mellaart 1956: 37 (fig. 5:100)
4	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: buff; Inclusions: Coarse grits; Firing: Hard; Surface Treatment: Burnishing; Red; Slip</i>	Ghrubba	Mellaart 1956: 35 (fig. 4:16)
5	Bowl (cup)	Open	very small	deep	<i>Technique: Ware: Type: "Yarmukian"</i>	Jabal abu-Thawwab	Kafafi 1989: 123 (fig. 2:5)
6	Bowl (cup)	Open	small	deep	<i>Technique: Ware: Color: orange; Inclusions: Fine grits; Firing: Hard; Surface Treatment: Painting: Matte red; Smoothing</i>	Ghrubba	Mellaart 1956: 37 (fig. 5:76)
7	Bowl (cup)	Open	very small	deep	<i>Technique: Ware: Type: "Yarmukian"</i>	Jabal abu-Thawwab	Kafafi 1989: 123 (fig. 2:3)
8	Bowl	Open	very small	very deep	<i>Technique: Ware: Type: Ghassulian; Color: red; Inclusions: Sand</i>	Ghrubba	Mellaart 1956: 35 (fig. 4:30)
9	Bowl	Open	small	intermediate	<i>Technique: Ware: Type: "Yarmukian"</i>	Jabal abu-Thawwab	Kafafi 1989: 123 (fig. 2:1)
10	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: white, buff; Inclusions: Fine grits; Firing: Hard; Surface Treatment: Painting: Matte red</i>	Ghrubba	Mellaart 1956: 35 (fig. 4:15)
11	Bowl	Open	small	intermediate	---	Tabaqat al-Buma	Banning <i>et al.</i> 1992: 56 (fig. 7:5)
12	Bowl	Open	medium	intermediate	---	Tabaqat al-Buma	Banning <i>et al.</i> 1992: 56 (fig. 7:4)
13	Bowl	Open	medium	intermediate	<i>Technique: Ware: Color: buff; Inclusions: Fine grits; Manufacture: Wheelmade; Firing: Hard; Surface Treatment: Smoothing</i>	Ghrubba	Mellaart 1956: 35 (fig. 4:2)
14	Bowl	Open	medium	intermediate	<i>Technique: Ware: Color: white; Inclusions: Straw grits; Firing: Hard; Surface Treatment: Painting: Matte red; Wiping: Rough</i>	Ghrubba	Mellaart 1956: 37 (fig. 5:89)
15	Bowl	Open	small	deep	---	'Ayn Ghazal	Rollefson and Simmons 1985: 14 (fig. 2:A)
16	Bowl (cooking pot)	Open	medium	intermediate	<i>Technique: Ware: Color: buff; Inclusions: Fine; Firing: Medium; Surface Treatment: Smoothing</i>	Ghrubba	Mellaart 1956: 35 (fig. 4:24)



Late Neolithic pottery examples. Bowls (nos. 1-16).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
17	Jar	Closed	—	very short	Technique: <i>Wares:</i> Color: buff; <i>Inclusions:</i> Straw; <i>Firing:</i> Hard; Surface Treatment: <i>Painting:</i> Matte red	Ghrubba	Mellaart 1956: 35 (fig. 4:29)
18	Jar	Closed	—	very short	Comments: <i>Vessel Parts:</i> Cylindrical strap handles	Wadi Ziglab	Banning <i>et al.</i> 1989: 51 (fig. 4:6)
19	Jar	Closed	—	short	Technique: <i>Wares:</i> Color: buff; <i>Inclusions:</i> Fine grits; <i>Firing:</i> Hard; Surface Treatment: <i>Painting:</i> Matte red; <i>Smoothing</i>	Ghrubba	Mellaart 1956: 37 (fig. 5:99)
20	Jar	Closed	—	tall	Technique: <i>Wares:</i> Color: buff; <i>Inclusions:</i> Fine grits; <i>Firing:</i> Hard; Surface Treatment: <i>Painting:</i> Lustrous red; <i>Smoothing</i>	Ghrubba	Mellaart 1956: 39 (fig. 6:122)
21	Jar	Closed	—	short	—	Jabal abu-Thawwab	Kafafi 1988: 458 (fig. 4:1)



Late Neolithic pottery examples. Jars (nos. 17-21).

The Chalcolithic Period

Introduction. Knowledge of the Chalcolithic period in Transjordan is limited. There is very little difference between the pottery of the Late Neolithic period and the Chalcolithic period. Period distinctions were more related to farming practices and the use of copper objects in the Chalcolithic period than dramatic changes in the pottery culture. During the Chalcolithic period there was increasing expansion in ceramic technique, surface treatment, and forms. At the end of the period, at some sites there was a virtually indistinguishable transition into the Early Bronze I period.

Some of the sites currently associated with the Chalcolithic period pottery culture in Transjordan include: Abu Hamid, Abu Snaslah, Amman, Bab adh-Dhra', Burqu, Fasaal, Hibr, Karak, Khirbat Qurayn (North), Maqass-Aqaba, Petra, Sahab, Sahl as-Sarabat, Tabaqat Fahl (Pella), Tall abu-Habil, Tall al-Handaqq, Tall al-Mafaliq, Tall al-'Umayri, Tall ash-Shuna (North), Tall Hisban, Tall Jawa (North), Tulaylat al-Ghassul, Umm Hammad ash-Sharqiya, and Umm Qatafa, as well as sites along the Wadi al-Hasa, Wadi al-Qattar, and Wadi 'Isal. This characterization is drawn largely from Tulaylat al-Ghassul (Hennessy 1969), the Kerak Plateau (Brown 1991), and the pottery example site reports, as well as personal communication from project consultants.

Technique. Chalcolithic pottery was utilitarian and domestic. **Ware:** Wares were buff, grey, and pink-to-pale reddish, with red and grey wares most common. A chalky white-to-cream fine fabric was manufactured as was a coarse, soft buff-to-brown fabric with heavy grit and straw filling. **Inclusions:** Mineral inclusions were small-to-large sized. Organic material (sometimes straw) was used as temper. Inclusions were basalt, calcite, chert-flint, gypsum, and quartz. **Levigation:** Levigation varied. **Manufacture:** Manufacture was mostly by hand coiling, handmade, and hand finished. Some smaller conical bowls were finished on a tournette. **Firing:** Firing was very good, but varied to the point of vitrification.

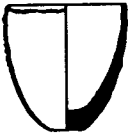
Surface treatment. **Slipping:** Slip colors included cream/white, buff-to-reddish-brown, and grey. Slips were seldom applied and were generally restricted to matte or lightly-burnished red slips. A creamy buff-white slip served as a foundation for painted decoration. Wash colors also included a very thin creamy white. Vessel exteriors (and sometimes interiors) were wet-smoothed and/or self-slipped. **Burnishing:** Burnishing was applied to some grey wares and red slips. **Painting:** Painting was rare in the early phases of the Chalcolithic period but more frequent during the

later phases. Painting was often combined with appliqué. Paint included bands of red applied over a wash, and thin matte red, red/brown, orange/brown, or purple paint on the body. Paint patterns included broad horizontal bands, loops, dots, triangles, semicircles, herringbones, and chevrons. Rarely, naturalistic floral designs were painted.

Appliqué: Appliqué in the form of raised band plastic decorations (with lunate or finger impressions, "rope" molding) first appeared in the Chalcolithic period and continued through the EB II-III period. Appliqué also included clay knobs. **Impressing:** Typical impressions on rims were made by finger or a tool. Decorative impressions below the rim of the vessel were characteristic on storage jars, basins, and holemouth jars. Scalloping, modeling, and simple parallel grooving were infrequent. Mat and basketry impressions (both round and square weave) were sometimes left on bases as a result of the manufacturing process. **Incising:** Wheel ribbing, puncturing, and incised designs were common.

Forms (pottery examples 22-45). **Bowls:** Bowl forms included basins, chalices, cooking pots, cornets, cups, goblets, plates, platters, spouted bowls, vats, V-shaped bowls, and other bowls. Bowl lip profiles included angular, flattened, rounded, thickened, and thinned styles. Bowl rim profiles included flattened, simple, and thickened styles. Bowl rim inflections were generally curved or straight. Bowl wall profiles were generally conical or globular. The most common bowl was a simple bowl. Cornets were common, becoming squat later in the period. **Jars:** Jar forms included bow-rim jars, holemouth jars, spouted jars, storage jars, and other jars. Jar lip profiles included flattened, rounded, and thinned styles. Jar rim profiles were generally simple. Jar rim inflections were generally curved or straight. Jar wall profiles were globular or piriform. Jar neck profiles were conical or cylindrical. Holemouth jars were very common. Bow-rim jars were similar to those of the LN II period. Small holemouth jars were common during the Chalcolithic period along with holemouth cooking pots. Storage jars decorated with a rope design were characteristic of the period. **Jugs:** It appears that the pottery form "jug" was first manufactured in Transjordan in the later phase of the Chalcolithic period. **Miscellaneous forms:** Forms included churns, fenestrated stands, and lids. **Vessel parts:** Bases included elevated, flat, and ring styles. Elevated bases (on chalices and goblets) were sometimes fenestrated. Thick, flat styles (similar to disk bases) were on all forms. Handles included ledge (rare), loop, and lug styles. Vertical and horizontal lug handles were used together.

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
22	Bowl (cup)	Open	very small	very deep	Technique: <i>Ware:</i> Color: red; <i>Surface Treatment: Painting:</i> Dull red band on rim; <i>Slip:</i> Thin white	Tulaylat al-Ghassul	Koeppel <i>et al.</i> 1940: pl. 96:6
23	Bowl (cup)	Open	very small	very deep	Technique: <i>Inclusions:</i> Small grits; <i>Levigation:</i> Well-mixed; <i>Firing:</i> Orange brown; <i>Surface Treatment: Painting:</i> Matte dark red; <i>Wash:</i> Thin streaky cream over upper body int./ext.; <i>Comments:</i> <i>Vessel Dimensions:</i> Max. ht. 8.4 cm; rim diam. 7.4x8.8 cm	Tulaylat al-Ghassul	Hennessy 1969: 8 (fig. 6:3)
24	Bowl	Open	small	intermediate	Technique: <i>Inclusions:</i> Medium grits; <i>Levigation:</i> Finely mixed; <i>Manufacture:</i> Tournette finish; <i>Firing:</i> Red brown; <i>Surface Treatment: Painting:</i> Matte red; <i>Comments:</i> <i>Vessel Dimensions:</i> Max. ht. 6.5 cm; rim diam. 12.1 cm; <i>Vessel Parts:</i> String-cut base	Tulaylat al-Ghassul	Hennessy 1969: 10 (fig. 7a:12)
25	Bowl (goblet)	Open	very small	very deep	Technique: <i>Inclusions:</i> Medium and few large grits; <i>Levigation:</i> Well-mixed; <i>Firing:</i> Orange-to-red and grey in patches; <i>Surface Treatment: Painting:</i> Thin matte purple brown; <i>Slip:</i> Thin buff; <i>Wash:</i> Thin streaky white on body covering slip; <i>Comments:</i> <i>Vessel Dimensions:</i> Max. ht. 15.1 cm; rim diam. 7.75 cm	Tulaylat al-Ghassul	Hennessy 1969: 8 (fig. 6:9)
26	Bowl (cornet)	Open	very small	very deep	Technique: <i>Inclusions:</i> Medium grits; <i>Levigation:</i> Finely mixed; <i>Firing:</i> Red brown; <i>Surface Treatment: Painting:</i> Very thin matte orange brown; <i>Wash:</i> Thin cream on int./ext. of rim; <i>Comments:</i> <i>Vessel Dimensions:</i> Max. ht. 15.9 cm; rim diam. 7.2 cm	Tulaylat al-Ghassul	Hennessy 1969: 10 (fig. 7a:11)
27	Bowl (chalice)	Open	small	deep	Technique: <i>Inclusions:</i> Tiny grits; <i>Levigation:</i> Finely mixed; <i>Firing:</i> Buff; <i>Surface Treatment: Painting:</i> Matte dark red; <i>Slip:</i> Thin cream on ext.; <i>Comments:</i> <i>Vessel Dimensions:</i> Rocon. ht. 22.2 cm; rim diam. 10.2x4.4 cm	Tulaylat al-Ghassul	Hennessy 1969: 6 (fig. 5:5)
28	Bowl	Open	large	intermediate	Technique: <i>Ware:</i> Color: red; <i>Comments:</i> <i>Vessel Parts:</i> Ring base	Tulaylat al-Ghassul	Koeppel <i>et al.</i> 1940: pl. 79:3
29	Bowl	Open	small	intermediate	—	Tulaylat al-Ghassul	Mallon, Koeppel, and Neuville 1934: 97 (fig. 43:7)
30	Bowl	Open	large	intermediate	Technique: <i>Ware:</i> Color: dark red; <i>Firing:</i> Grey core; <i>Comments:</i> <i>Vessel Parts:</i> Lodge handle	Tulaylat al-Ghassul	Koeppel <i>et al.</i> 1940: pl. 79:1



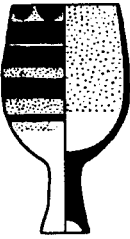
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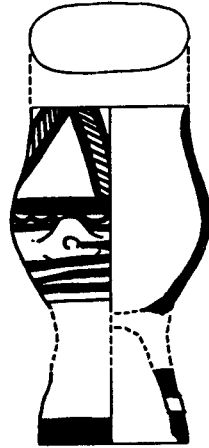
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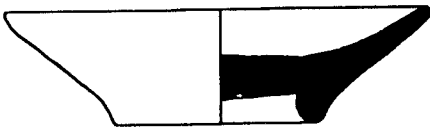
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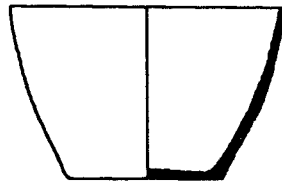
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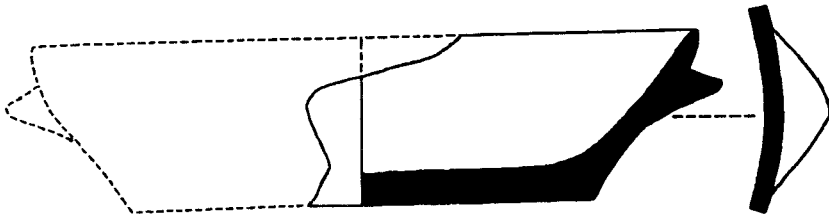
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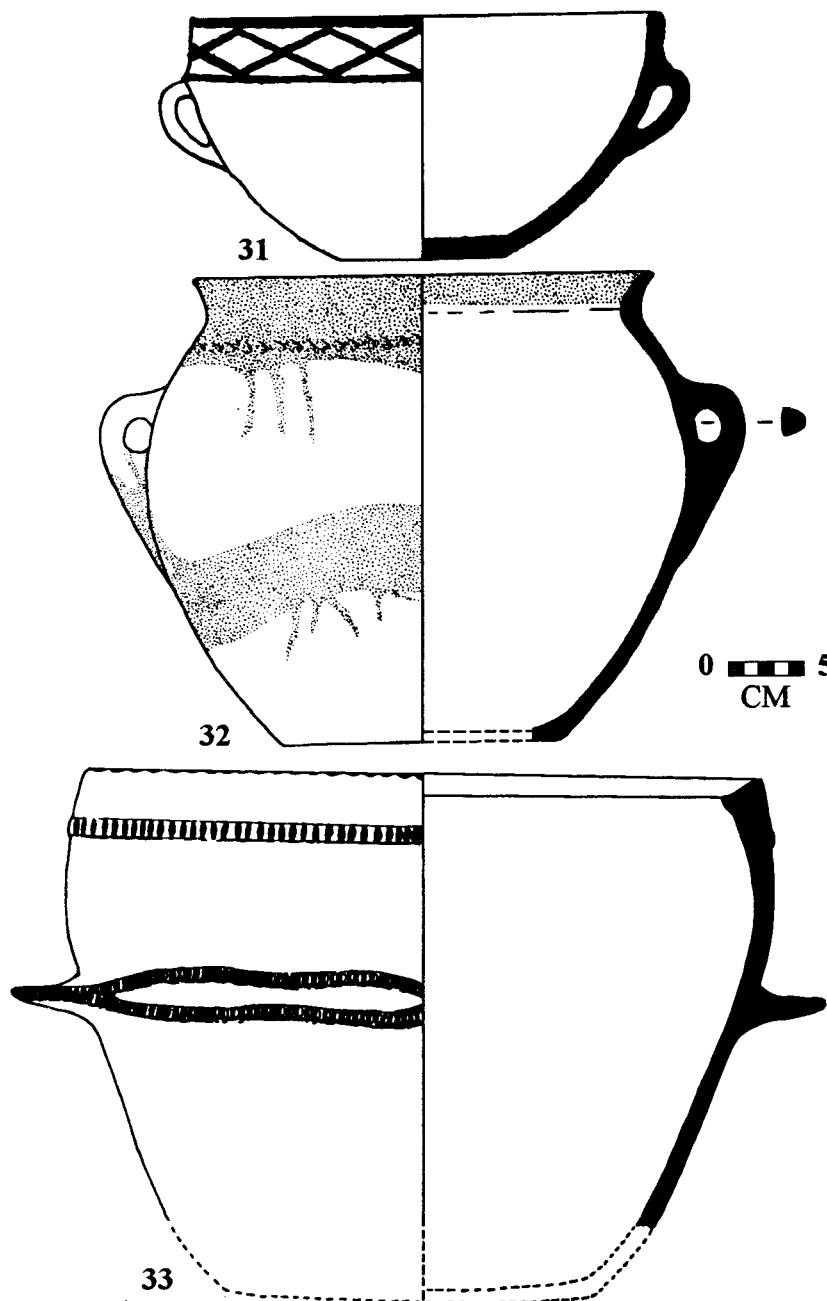


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Chalcolithic pottery examples. Bowls (nos. 22-30).

88 ANCIENT POTTERY OF TRANSJORDAN

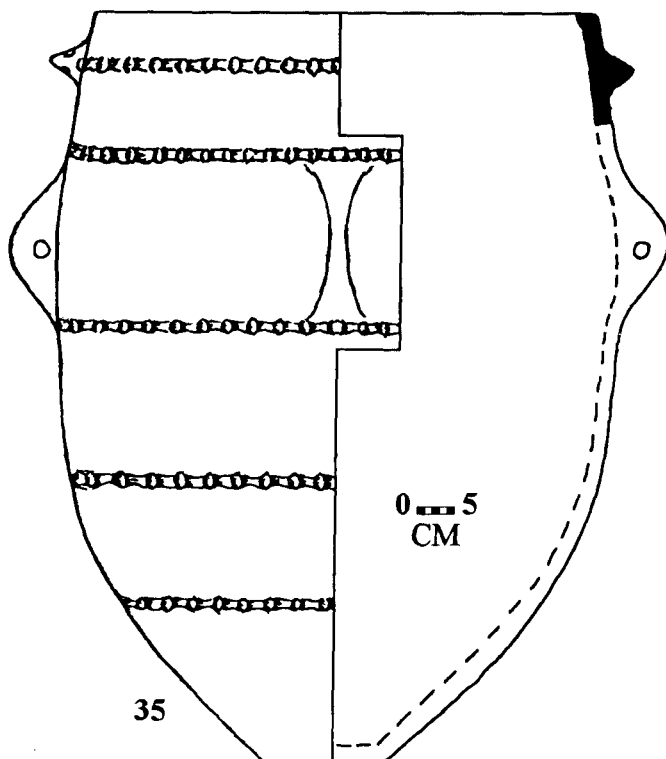
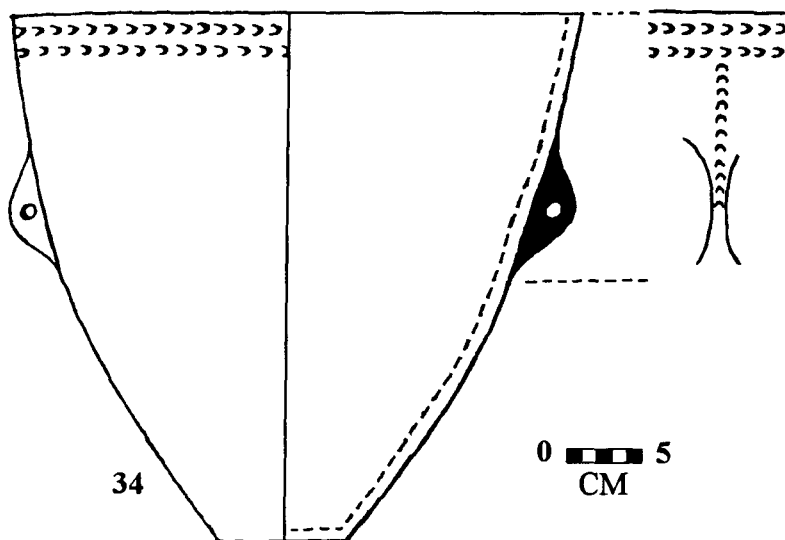
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
31	Bowl (basin)	Open	large	intermediate	<i>Surface Treatment: Painting:</i> Diamond pattern near rim; <i>Comments: Vessel Parts:</i> Vertical loop handles	Tulaylat al-Ghassul	Mallon, Koepfel, and Neville 1934: 97 (fig. 44:B)
32	Bowl (crater)	Open	large	deep	<i>Technique: Ware:</i> Color: 7.5YR6/6-7/6 (reddish-yellow); <i>Inclusions:</i> Chert up to 2 mm; <i>Levigation:</i> Coarse; <i>Manufacture:</i> Handmade; <i>Firing:</i> 2.25 Mohs (soft); <i>Surface Treatment: Painting:</i> 10R4/8 (red) bands; <i>Relief:</i> Rope below neck; <i>Comments: Vessel Dimensions:</i> Diam. 30 cm	Tabaqat Fahl (Pella)	McNicol, Smith, and Hennessy 1982b: pl. 104:2
33	Bowl (vat)	Open	large	deep	<i>Technique: Ware:</i> Color: buff; <i>Inclusions:</i> Median grits; <i>Manufacture:</i> Handmade; <i>Surface Treatment: Impressing:</i> On rim; <i>Smoothing</i>	Tall al-Mafaliq	Leonard 1992: 191 (pl. 34:7)



Chalcolithic pottery examples. Bowls (nos. 31-33).

90 ANCIENT POTTERY OF TRANSJORDAN

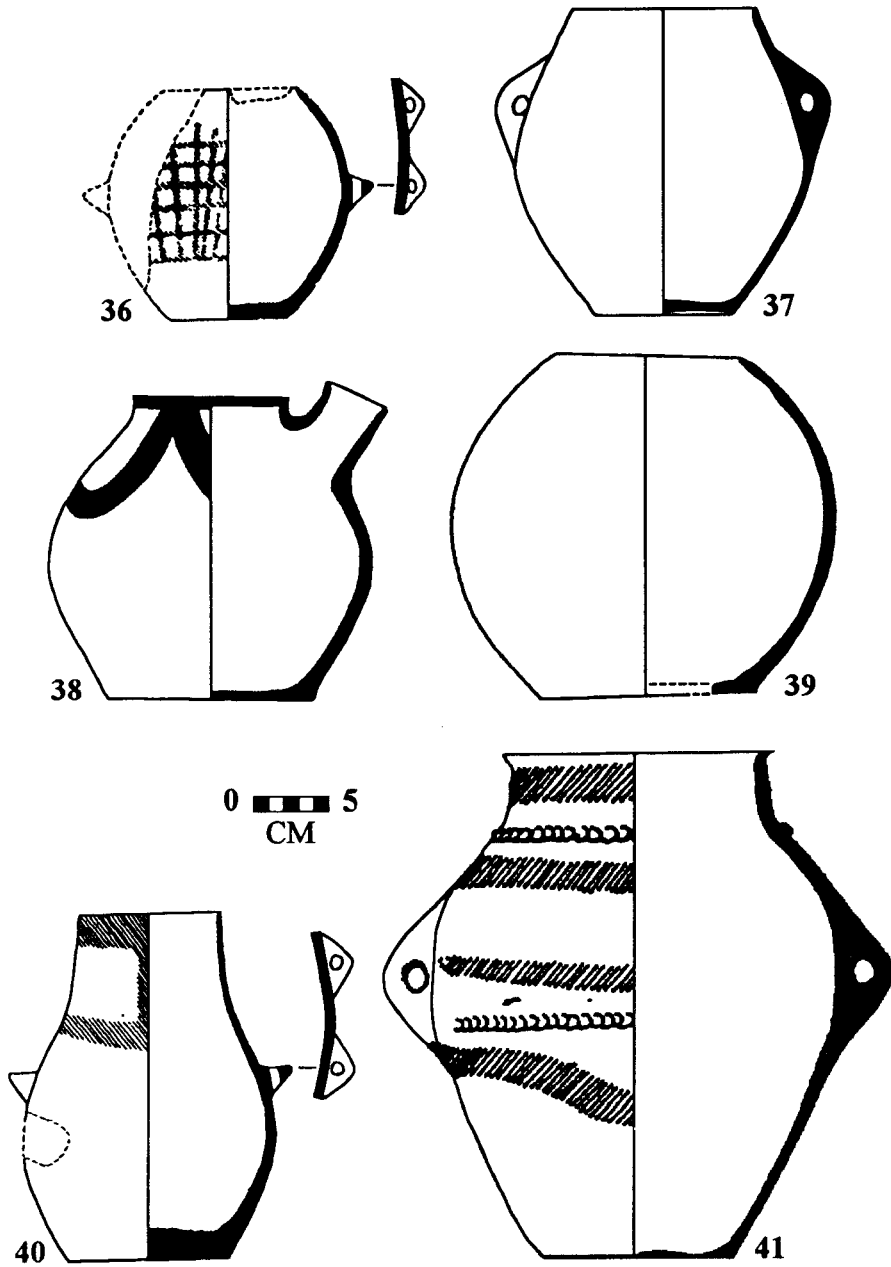
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
34	Bowl (vat)	Open	large	deep	---	Tulaylat al-Ghassul	Mallon, Koepfel, and Neville 1934: 101 (fig. 51)
35	Bowl (vat)	Open	large	very deep	<i>Surface Treatment: Impressing: 5 bands on body; Comments: Vessel Dimensions: Max. diam. 73 cm; ht. 100 cm; Vessel Parts: 4 vertical lug handles; 2 ledge handles near rim</i>	Tulaylat al-Ghassul	Mallon, Koepfel, and Neville 1934: 103 (fig. 53)



Chalcolithic pottery examples. Bowls (nos. 34 and 35, the latter scaled at 10%).

92 ANCIENT POTTERY OF TRANSJORDAN

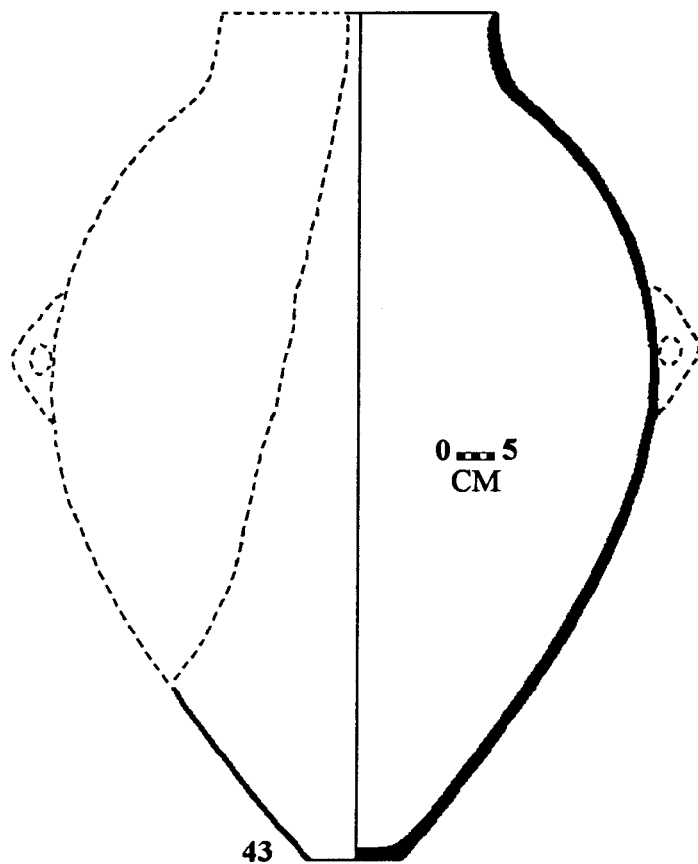
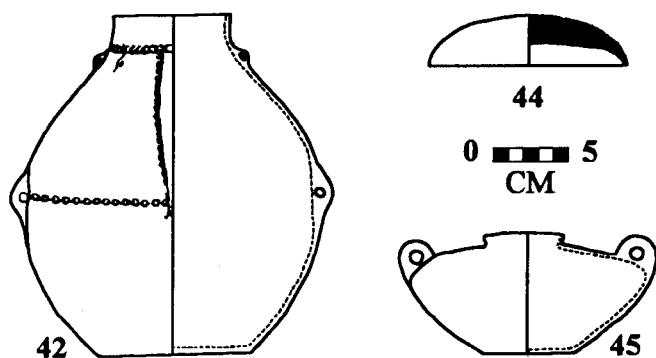
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
36	Bowl (cooking pot)	Open	medium	deep	Surface Treatment: Painting: Red lattice bands; Comments: Vessel Part: Horizontal pierced lug handles; holemouth	Tulaylat al-Ghassul	Koepfel <i>et al.</i> 1940: pl. 78:1
37	Bowl	Open	medium	very deep	Technique: Ware: Color: red; Inclusions: Medium grits; Manufacture: Handmade; Firing: Hard; grey core; Surface Treatment: Wash: Red ext.; Comments: Vessel Part: Biconical wall profile; holemouth rim profile; burnt	Tall Abu-Habil	Leonard 1992: 165 (pl. 21:13)
38	Jar (spouted jar)	Closed	---	short	Technique: Inclusions: Many fine and some large grits; Levigation: Well-mixed; Firing: Orange; Surface Treatment: Painting: Matte orange-to-red brown; Wash: Thin buff on ext.; Comments: Vessel Dimensions: Max. ht. 21.1 cm; rim diam. 10.0 cm	Tulaylat al-Ghassul	Hennessy 1969: 8 (fig. 6:1)
39	Jar	Closed	---	short	---	Tall Abu Hamid	Dollfus and Kafafi 1989: 108 (fig. 5:6)
40	Jar	Closed	---	short	---	Tulaylat al-Ghassul	Koepfel <i>et al.</i> 1940: pl. 78:7
41	Jar	Closed	---	tall	Surface Treatment: Painting: Relief	Tall Abu Hamid	Dollfus and Kafafi 1989: 108 (fig. 5:2)



Chalcolithic pottery examples. Bowls (nos. 36 and 37) and jars (nos. 38-41).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
42	Jar	Closed	--	short	--	Tulaylat al-Ghassul	Mallon, KoeppeI, and Neuville 1934: 100 (fig. 50:5)
43	Jar	Closed	--	very tall	Comments: <i>Vessel Dimensions:</i> Max. diam. ca. 77.5 cm; max. ht. ca. 111 cm	Tulaylat al-Ghassul	KoeppeI <i>et al.</i> 1940: pl. 79:11
44	Lid	--	--	--	Technique: <i>Ware:</i> Color: red	Tulaylat al-Ghassul	KoeppeI <i>et al.</i> 1940: pl. 79:7
45	Churn	--	--	--	--	Tulaylat al-Ghassul	Mallon, KoeppeI, and Neuville 1934: 111 (fig. 59:4)



Chalcolithic pottery examples. Jars (nos. 42 and 43, the latter scaled at 10%), lid (no. 44), and churn (no. 45).

The Early Bronze Age

The Early Bronze Age ceramic corpus was clearly distinguished from the Chalcolithic, although some continuity existed in utilitarian vessels. Rural settlements best illustrate this continuity (Brown 1991: 176). The characterization of Early Bronze Age is first given generally, and then specific reference to particular ware groups is given where appropriate.

Some of the sites currently associated with the Early Bronze Age pottery culture in Transjordan include: 'Ara'ir ('Aro'er), Abu al-Kharaz, Adar, as-Safat, Amman, Arqub adh-Dhahr, as-Sadah, 'Ayn Ghazal, Bab adh-Dhra', Dayr 'Ayn Abata, Dhiban (Dibon), 'Iraq al-Amir, Jabal abu-Thawwab, Jabal at-Taj, Jabal Mutawwaq, Katarat as-Samra, Khirbat Ader, Khirbat adh-Dharrah, Khirbat Iskander, Mount Nebo ('Ayn Musa), Quwayliba (Abila), Tabaqat Fahl (Pella), Tall al-Handaqq, Tall al-Hibr, Tall al-'Umayri, Tall as-Sa'idiyah, Tall ash-Shuna (North), Tall Hammam, Tall Hisban, Tall Iktanu, Tall Jamid, Tall Jawa (North), Tall Nimrin, Talul adh-Dhahab, Tall Wadi Faynan, Tiwal ash-Sharqi, Umm al-Bighal, Umm Hammad al-Gharbi, Umm Hammad ash-Sharqiya, and Zeraqun, as well as smaller sites along the Wadi al-Badan, Wadi al-Yabis, and Wadi Ziqlab.

The Early Bronze I Period

Introduction. There are significant potential differences in the pottery assemblages which are recovered from tells and those recovered from tombs. First, more whole forms are likely to be recovered from tombs than from tells. Second, vessels recovered from tombs may be made and decorated differently from domestic vessels found on a tell.

There is a marked contrast within EB I ceramic groups between assemblages from funerary deposits and those from domestic occupations. This contrast is reflected in the quality of paste preparations and in the quantity of decorated and specialized forms. In general, domestic assemblages contain higher proportions of vessels that functioned in activities linked to food preparation and storage. Conversely, funerary deposits contain more of the finer, special purpose and serving vessels (Brown 1991: 176).

The following characterization is from Bab adh-Dhra' (Rast and Schaub 1981: 69-118; Schaub and Rast 1989: 234-273), Abu al-Kharaz (Fischer 1993), Tall ash-Shunah-North (Baird and Philip 1994: 111-133), the study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

Many of the pottery examples for EB I are from Bab adh-Dhra' tombs, and while they are representative of currently-published vessels,

there is some question as to whether they are representative of all EB I period Transjordanian pottery. Because they are from tombs, they may not adequately depict domestic forms. Because they are from one site, they may not accurately reflect geographical variation. Current archaeological knowledge of the EB I period in Transjordan is sketchy, published whole or reconstructed whole forms are rare, and much of the published pottery is from Jordan Valley sites. These factors must be well considered.

Technique. Ware: Ware colors were pink-to-tan, red, reddish-yellow, and grey. Red and grey wares were burnished to make a period-defining hallmark fabric. Certain ware groups have been identified: grain washed ware, which was more common in the north; grey burnished ware, also more common in the north; line-group ware (LGW, aka: line-painted ware), common in the south; plain ware (including both carinated ware and fine ware), also common in the south; and red burnished ware, which was common in valley sites. **Inclusions:** Inclusions varied in terms of the amount and size of mineral tempering (black and white grits), but were finer than in the Chalcolithic period. **Levigation:** Clay used in EB I vessels was well levigated. Handles and bases, especially on domestic forms, were more coarse with a higher ratio of inclusions. **Manufacture:** A development in paste preparation and manufacturing techniques occurred during the Early Bronze period. All vessels continued to be handmade with bowls being coiled-formed. Some vessels were tournette-finished. Joined necks were attached to jars and jugs, while cylindrical necks were drawn up from the vessel wall resulting in a smooth curve from the body and a shorter, more outcurving neck. **Firing:** The ceramics were generally well fired.

Surface treatment. Slipping: Slip variation included pink, light-to-dark red, reddish-yellow, and white; northern band slip; self-slipped; and grain wash. Slipping was sometimes combined with burnishing. Some vessels were wet-smoothed. **Burnishing:** Burnishing included a characteristic EB I A period red burnish and a later EB I period grey burnish. **Painting:** The development of LGW was a hallmark of the EB I B period and consisted of "groups of parallel red lines painted at oblique and right angles to one another" (Brown 1991: 175). Both funerary and domestic assemblages from the EB I B period were typified by LGW which continued as a decorative style into the EB II period. Red painting and wash were common.

Appliqué: Appliqué in the form of raised-band plastic decorations, first found in the Chalcolithic period, continued through the EB I period and into the EB II-III period. Clay dots or knobs were applied to the exterior of

many vessels. **Impressing:** Finger impressions were attested both in and out of various vessels, becoming less common toward the end of the period. **Incising:** Incising continued from the Chalcolithic period, including slash-bands and punctate lines. Indentations were sometimes incised above the heel of flat bases. **Relief:** "Rope" relief decorated some vessels.

Forms (pottery examples 46-72). Some Chalcolithic forms and attributes continued, but the Early Bronze Age was also marked by new forms including hemispherical bowls and amphoriskoi. The basic forms of the EB I A period continued into the EB I B period with some changes.

Bowls: Bowl forms included biconical bowls, cooking pots, cups, hemispherical bowls, platters, spouted bowls, twin-cups, V-shaped bowls, and other bowls. Bowl lip profiles were generally rounded or thinned. Bowl rim profiles included doubled, flattened, and simple. Bowl rim inflections were curved or straight. Bowl wall profiles included biconical, conical, and globular styles. Conical bowls of the EB I B period were wheel-finished. They were of fine ware (better levigated clays and barely-visible inclusions). Hemispherical bowls were common to the later EB I repertoire, and those with omphalos bases were sometimes burnished. Spouted bowls had curved or trumpet spouts. The V-shaped bowl continued from the Chalcolithic period, but with pale-cream coarse fabric, large inclusions, and poor firing. Hemispherical bowls took their niche later in the period. **Jars:** Jar forms included amphoriskoi, column jars, holemouth jars, storage jars, and other necked jars. Jar lip profiles were generally flattened, rounded, or thinned. Jar rim profiles were simple. Jar rim inflections were curved or straight. Jar wall profiles were generally globular. Jar neck profiles were conical or curving. The basic jar form of the EB I A period had tall-to-medium tall necks, wide mouths, and ledge, lug, or loop handles. Wide- and narrow-necked amphoriskoi were characteristic of the EB I funerary assemblages and occasionally appeared in domestic assemblages. These amphoriskoi were a common EB I B period LGW form which continued into the EB II period. The EB I amphoriskoi had rounded bases with pierced lug handles attached at the shoulders. Another EB I B jar form had a pierced column handle. Holemouth jars were either straight-sided or globular early in the EB I period, but later, were only globular. Holemouth jars were made with either thinned rim profiles or thickened rims with an incised groove. Most were wet-smoothed and decorated with an incised band of slashes below the rim. Necked jars were more common earlier in the EB I period, and were replaced later in the period with "bagged-shaped"

jars and by jars with flattened rim profiles. Storage jars were sometimes characterized by everted finger-impressed rims (aka: "rail-rim") or slash-collared bands on holemouth forms. The rail-rim storage jars were often red-slipped and handmade. The collared storage jar was usually wheel-finished and band slipped with thinned or flattened rims and made of well-levigated clay. **Jugs:** Jugs included juglets and other jugs. Jug lip profiles were flattened or rounded. Jug rim profiles were flattened or simple. Jug rim inflections were curved or straight. Jug wall profiles were globular or piriform. Jug neck profiles were curving. Jugs sometimes had tall necks, wide mouths, and loop handles. **Miscellaneous forms:** Forms included spoons. **Vessel parts:** Bases included curved, flat, omphalos, and ring styles. Flat bases (related to the bases on Chalcolithic V-shaped bowls) were extremely common to many EB I period forms. Handles included ledge, loop, and lug styles. Specialized "column" handles which incorporated an internal spout were added to some jars. Horizontal ledge handles with or without thumb impressions were typical on utilitarian vessels. Red slipped, loop handles were a typical feature of EB I pottery: jugs, spouted jars, and especially on the ear handled cups (aka: "high loop handled") which were a hallmark of the period.

The Early Bronze II-III Period

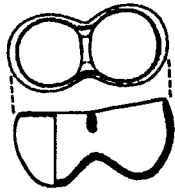
Introduction. Several vessel types were manufactured throughout the EB II-III period which were a development of EB I period forms. "EB II-III ceramics represent a more standardized repertoire" than those of the EB I period, with "a less clear-cut dichotomy between the kinds of vessels found in burial deposits and those associated with occupational contexts" (Brown 1991: 180; also Schaub 1996, personal communication). Although there is clearer understanding of some forms than of others, there remains no clear-cut division between the EB II and EB III ceramic corpora. The pottery examples are therefore divided by form rather than by period.

This description is from Abu al-Kharaz (Fischer 1993), Bab adh-Dhra' (Schaub 1979; Schaub and Rast 1989: 234-273), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

Technique. Ware: EB II-III period wares were pinkish-white, pink, tan, grey, brownish-to-dark reddish-grey, pale orange, light red, and reddish-yellow. The Abydos ware was a significant hallmark of the period with its metallic burnished ware. Abydos ware was sometimes untreated.

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No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
46	Bowl (twin cups)	Open	very small	very deep	---	Bab adh-Dhra'	Schaub and Rast 1989: 181 (fig. 114:10)
47	Bowl	Open	very small-to-small	intermediate	<i>Technique: Ware:</i> Color: 7.5YR7/4-to-5YR7/4 (pink); <i>Inclusions:</i> Few small and large white grits; <i>Comments: Vessel Dimensions:</i> Original publication unscaled; <i>Vessel Parts:</i> Horn at top of ear handle	Bab adh-Dhra'	Schaub 1981: 91 (fig. 6:11)
48	Bowl (biconical bowl)	Open	small	intermediate	<i>Technique: Ware:</i> Color: buff crumbly; <i>Inclusions:</i> Small grits; <i>Manufacture:</i> Tournette; <i>Surface Treatment: Wash:</i> Brown; <i>Comments: Vessel Parts:</i> String-cut base; lime concretions	Tall ash-Shuneh	Leonard 1992: 143 (pl. 10:13)
49	Bowl	Open	very small-to-medium	intermediate	<i>Technique: Ware:</i> Color: 5YR6/6 (reddish-yellow); <i>Inclusions:</i> Many very small black and white and few large grits (0.2 mm-0.5 mm); <i>Manufacture:</i> Well made; <i>Surface Treatment: Slip:</i> 10R5/8 (red); <i>Comments: Vessel Dimensions:</i> Original publication unscaled; <i>Vessel Parts:</i> Omphalos base; straw impressions near base; slight incurving rim inflection; very symmetrical	Bab adh-Dhra'	Schaub 1981: 109 (fig. 16:20)
50	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: buff; <i>Inclusions:</i> Black grits; <i>Manufacture:</i> Tournette; <i>Surface Treatment: Wash:</i> Red ext.	Tall Jamid	Leonard 1992: 135 (pl. 6:1)
51	Bowl	Open	medium	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 231 (fig. 146:4)
52	Bowl	Open	large	intermediate	<i>Comments:</i> "Crackled"; <i>Vessel Parts:</i> Conical (V-shaped) wall profile; incurved rim inflection; flat base	Tall ash-Shuna (N)	Baird and Philip 1994: 127 (fig. 12:3)
53	Bowl	Open	medium	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 219 (fig. 137:9)
54	Bowl (basin)	Open	large	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 219 (fig. 137:3)
55	Bowl (basin)	Open	large	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 45 (fig. 13:1)



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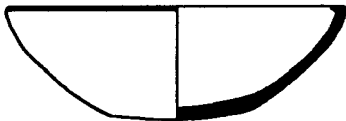
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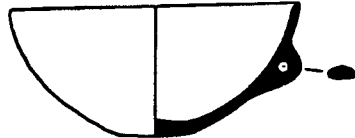
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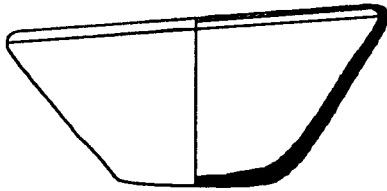
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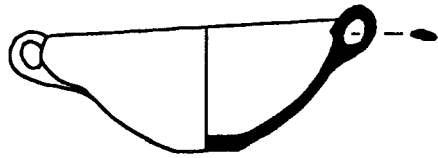
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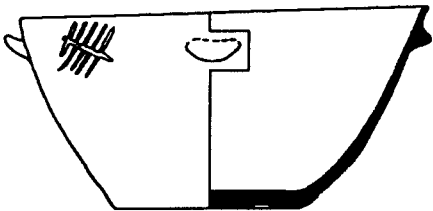
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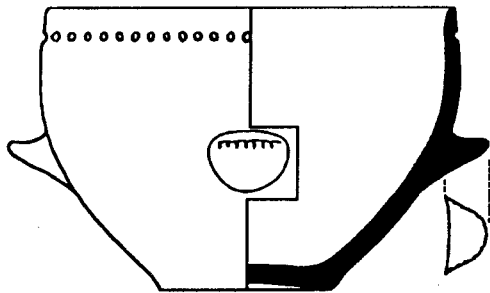
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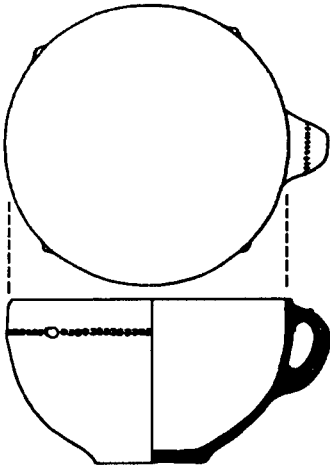
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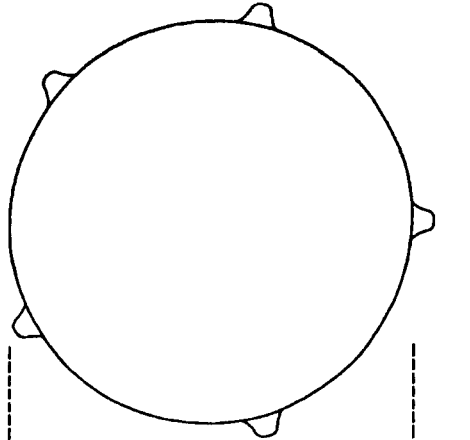
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Early Bronze I pottery examples. Bowls (nos. 46-55).

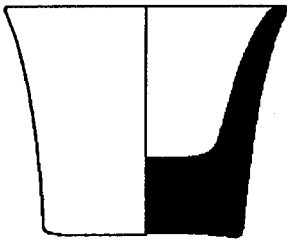
No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
56	Bowl	Open	medium	intermediate	—	Bab adh-Dhra'	Schaub and Rast 1989: 149 (fig. 87:3)
57	Bowl	Open	medium	deep	—	Bab adh-Dhra'	Schaub and Rast 1989: 95 (fig. 50:7)
58	Bowl (krater)	Open	large	intermediate	—	Bab adh-Dhra'	Schaub and Rast 1989: 89 (fig. 45:1)
59	Bowl (spouted bowl)	Open	very small-to- medium	intermediate	<i>Technique: Ware:</i> Color: 5YR6/6 (reddish-yellow); <i>Inclusions:</i> Small-to-medium black and white (0.2 mm-2.5 mm); <i>Manufacture:</i> Fairly well made; <i>Surface</i> <i>Treatment: Incising:</i> Cross- hatching; <i>Comments: Vessel</i> <i>Dimensions:</i> Original publication unscaled; <i>Vessel Parts:</i> Flat base	Bab adh-Dhra'	Schaub 1981: 97 (fig. 10:3)
60	Bowl (holemouth bowl)	Open	medium	deep	<i>Technique: Ware:</i> Color: grey; <i>Inclusions:</i> Small white grits; <i>Manufacture:</i> Handmade; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Relief, Smoothing; Comments:</i> <i>Vessel Parts:</i> Rounded lip	Tall Umm Hammad ash-Sharqi	Leonard 1992: 181 (pl. 29:21)



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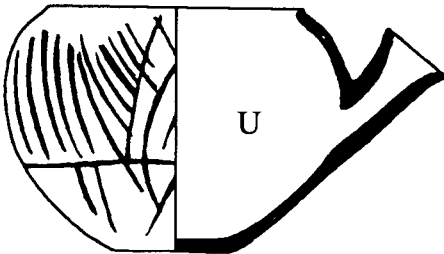


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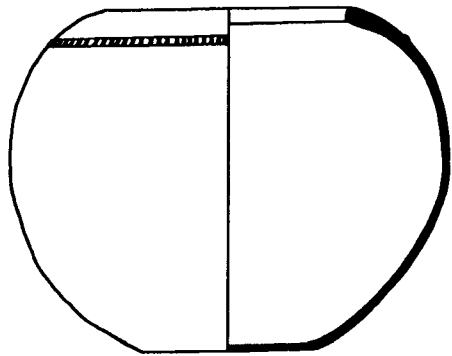


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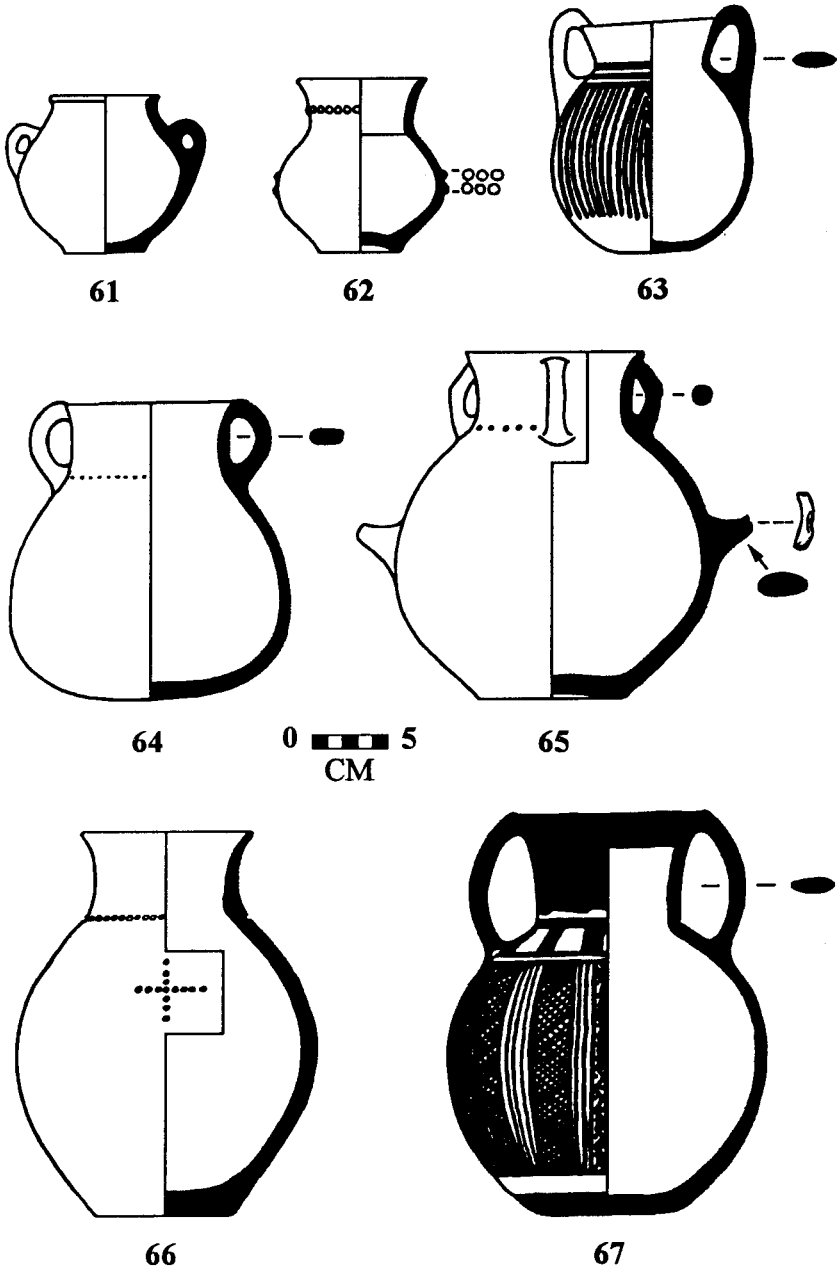
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Early Bronze I pottery examples. Bowls (nos. 56-60).

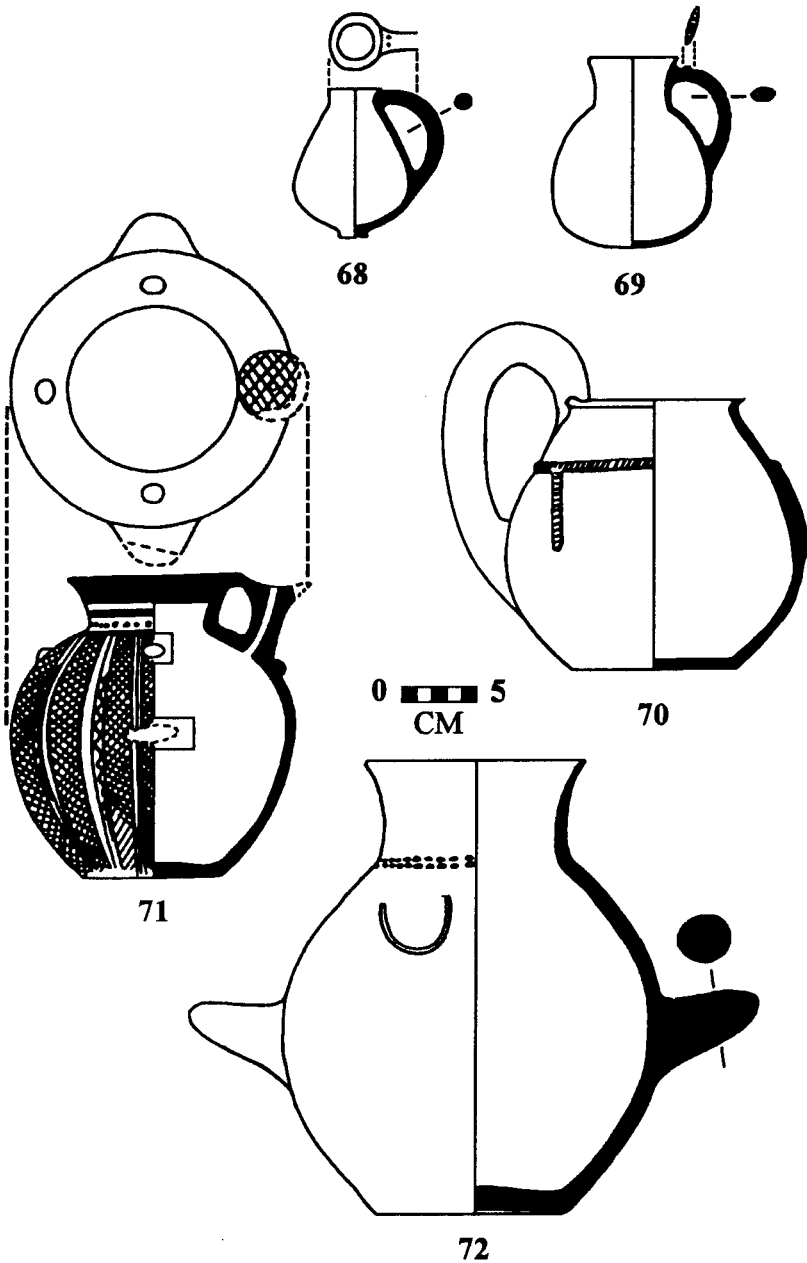
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
61	Jar (amphoriskos)	Closed	—	very short	Technique: <i>Ware:</i> Color: buff; <i>Inclusions:</i> Small grits; <i>Manufacture:</i> Handmade; <i>Firing:</i> Hard; Surface Treatment: <i>Burnishing;</i> Vertical marks; <i>Wash:</i> Creamy red-to-grey-brown; Comments: <i>Vessel Form:</i> Everted angular rim inflection; flat base; loop handles	Tall Umm Hammad ash-Sharqi	Leonard 1992: 177 (pl. 27:9)
62	Jar	Closed	—	very short	—	Bab adh-Dhra'	Schaub and Rast 1989: 189 (fig. 117:5)
63	Jar (amphoriskos)	Closed	—	short	—	Bab adh-Dhra'	Schaub and Rast 1989: 213 (fig. 134:3)
64	Jar	Closed	—	short	—	Bab adh-Dhra'	Schaub and Rast 1989: 87 (fig. 44:4)
65	Jar	Closed	—	short	—	Bab adh-Dhra'	Schaub and Rast 1989: 67 (fig. 29:4)
66	Jar	Closed	—	short	—	Bab adh-Dhra'	Schaub 1973b: 149 (fig. 20:0104c)
67	Jar	Closed	—	tall	—	Bab adh-Dhra'	Schaub and Rast 1989: 229 (fig. 145:2)



Early Bronze I pottery examples. Jars (nos. 61-67).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
68	Jug (juglet)	Closed	--	very short	--	Bab adh-Dhra'	Schaub and Rast 1989: 93 (fig. 49:11)
69	Jug (juglet)	Closed	--	very short	--	Bab adh-Dhra'	Schaub and Rast 1989: 177 (fig. 112:8)
70	Jug	Closed	--	short	<i>Technique: Ware: Color: buff; Inclusions: Minute grits; Manufacture: Handmade; Firing: Hard, grey core; Surface Treatment: Burnishing; Slip: Pale red</i>	Tall Umm Hammad ash-Sharqi	Leonard 1992: 181 (pl. 29:8)
71	Jar (column jar)	Closed	--	short	--	Bab adh-Dhra'	Schaub and Rast 1989: 215 (fig. 135:2)
72	Jar	Closed	--	tall	--	Bab adh-Dhra'	Schaub and Rast 1989: 211 (fig. 133:1)



Early Bronze I pottery examples. Jugs (nos. 68-70) and jars (nos. 71 and 72).

Abydos ware treatments included red zig-zag lines on a beige burnished slip, or plain slipped. Metallic burnished ware was well-fired with grey cores; grey-to-brown, orange-tan, or pinkish-orange clay; fine-to-medium inclusions; red, brown, or grey matte slips. The generally grey exterior of these vessels were highly burnished, sometimes resulting in a florescent or metallic appearance. In general, EB II-III period fabrics were related to the preceding EB I B period, but were harder and thicker. **Inclusions:** Inclusions consisted of a large ratio of small minerals in bowls and jars, or white calcite in cooking vessels. Crushed pottery (grog) was added to the clay mixture. Black grits were also included. **Levigation:** The clay mixture was usually coarse. **Manufacture:** Manufacturing continued the handmade technology of the preceding periods augmented by the use of a tournette. Some bowls showed evidence of manufacturing in a hole in the ground, in a base mold, or on a flat surface. Some pieces were very well made. **Firing:** As in the EB I period, most of the ceramics of the EB II-III period were well-fired, however, the spectrum of firing included underfired-to-vitrified.

Surface treatment. There are five basic kinds of EB II-III period surface treatment: untreated, slip, slip and burnish, burnish, and wash. **Slipping:** Slips and self-slips were pink, various hues of red, tan (pale buff-to-brown), pale orange, grey, and purple. Band-slip and grain-wash were also used. **Burnishing:** Burnishing techniques included a spectrum ranging from random-to-continuous-to-patterned. Burnishing patterns included line, radial, and overall-covering (often with red slip). Burnishing was frequently applied to serving vessels. "Metallic" burnishing was a very high burnish applied to the exterior which resulted in a lustrous, metallic appearance. Burnish techniques found in the EB II-III period continued into the EB IV A period. **Painting:** Painting was uncommon, but was sometimes applied to jars and jugs in patterns (often intersecting diagonal lines).

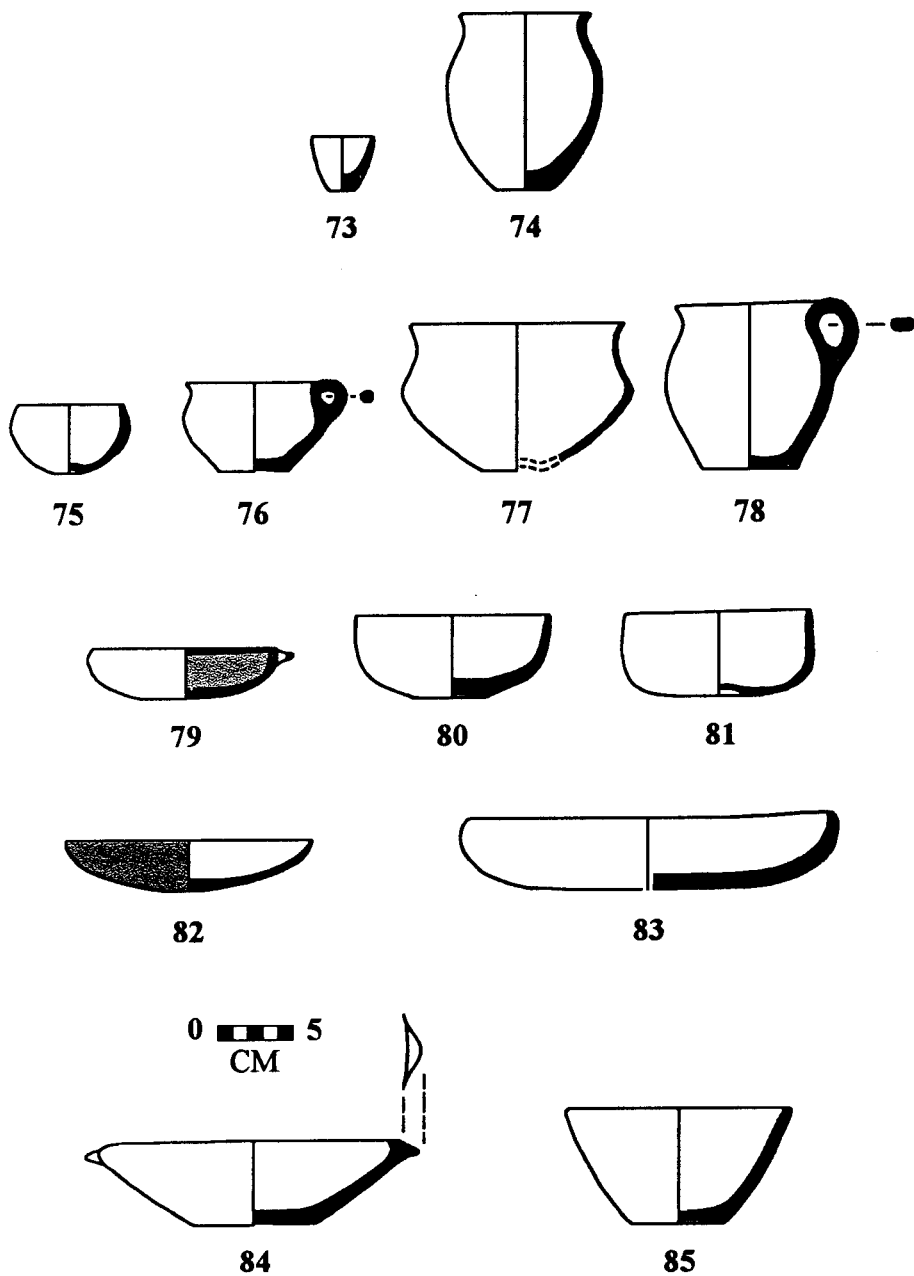
Appliqué: Appliqué in the form of raised-band plastic decorations, first found in the Chalcolithic and EB I periods, continued. **Impressing:** Finger impressing often decorated raised bands. Scalloped impressing began in EB II-III period and continued into the EB IV period. Surface combing was more commonly applied than finger impressing. **Incising:** Combing incision, in broad sets of oblique lines, was a popular treatment on jars and jugs and continued into the EB IV period. "Pattern" combing was a particular incising style of the EB III period (not to be confused with "body" combing of the EB IV period). Shallow vertical slashing on cooking pots was characteristic of the EB II-III period. **Relief:** "Rope" relief

decorated some vessels, but to a lesser extent than in previous periods.

Forms (pottery examples 73-110). **Bowls:** Bowl forms included chalices, cups, cooking pots, holemouth bowls, plates, platters, spouted bowls, storage vats, and other bowls. Bowl lip profiles included flattened, rounded, squared, and thinned styles. Bowl rim profiles were generally simple or thickened. Bowl rim inflections were curved or straight. Bowl wall profiles included conical, cylindrical, and globular styles. Cooking pots had reddish fabrics with many calcite inclusion. They were sometimes fired black. Cooking pots of the EB III period usually had angular and thickened rim profiles. Cooking pot rims were sometimes squared, thickened, or thinned holemouth. Holemouth bowls continued from the Chalcolithic and EB I periods. Curved platters were common throughout the Early Bronze Age, but particularly in the EB III period. Platter rim profiles were generally simple, however the T-shaped profile was an EB III period development which continued into the EB IV period. **Jars:** Jar forms included amphoriskoi, column jars, holemouth jars, spouted jars, storage jars, twin amphoriskoi, and other jars. Jar lip profiles included flattened, rounded, squared, and thinned styles. Jar rim profiles included flattened, simple, and thickened. Jar rim inflections were curved or straight. Jar wall profiles were generally globular. Jar neck profiles were conical or curving. The EB II-III jars evidenced narrower vessel necks than those of the EB I period. Amphoriskoi continued from EB I B. Column jars had pierced column handles. Storage jars had both vertical and ledge handles. Changes from the EB I B period included more globular widemouth jars with higher shoulders, as well as ledge- and loop-handled jars with more sharply-defined necks. Jars sometimes had flat bases, conical rims, pierced lug handles and/or horizontal ledge handles attached to the body at or below the point of maximum diameter. **Jugs:** Jug forms included various juglets and jugs. Jug lip profiles included flattened, rounded, and thinned styles. Jug rim profiles were generally pinched or simple. Jug rim inflections included angular, curved, and straight. Jug wall profiles were globular or piriform. Jug neck profiles were conical or curving. Jugs in the EB II-III period were more narrow-necked than in the EB I period. Loop handles on jugs and juglets were attached from above the rim. Jugs and juglets had one or more handles. **Vessel parts:** Bases included flat and round styles. Flat bases were common to a large percentage of EB II-III forms. Handles included column, ledge (both horizontal and vertical), and loop styles. Loop handles on jars were a new development which was distinctive to the EB II period.

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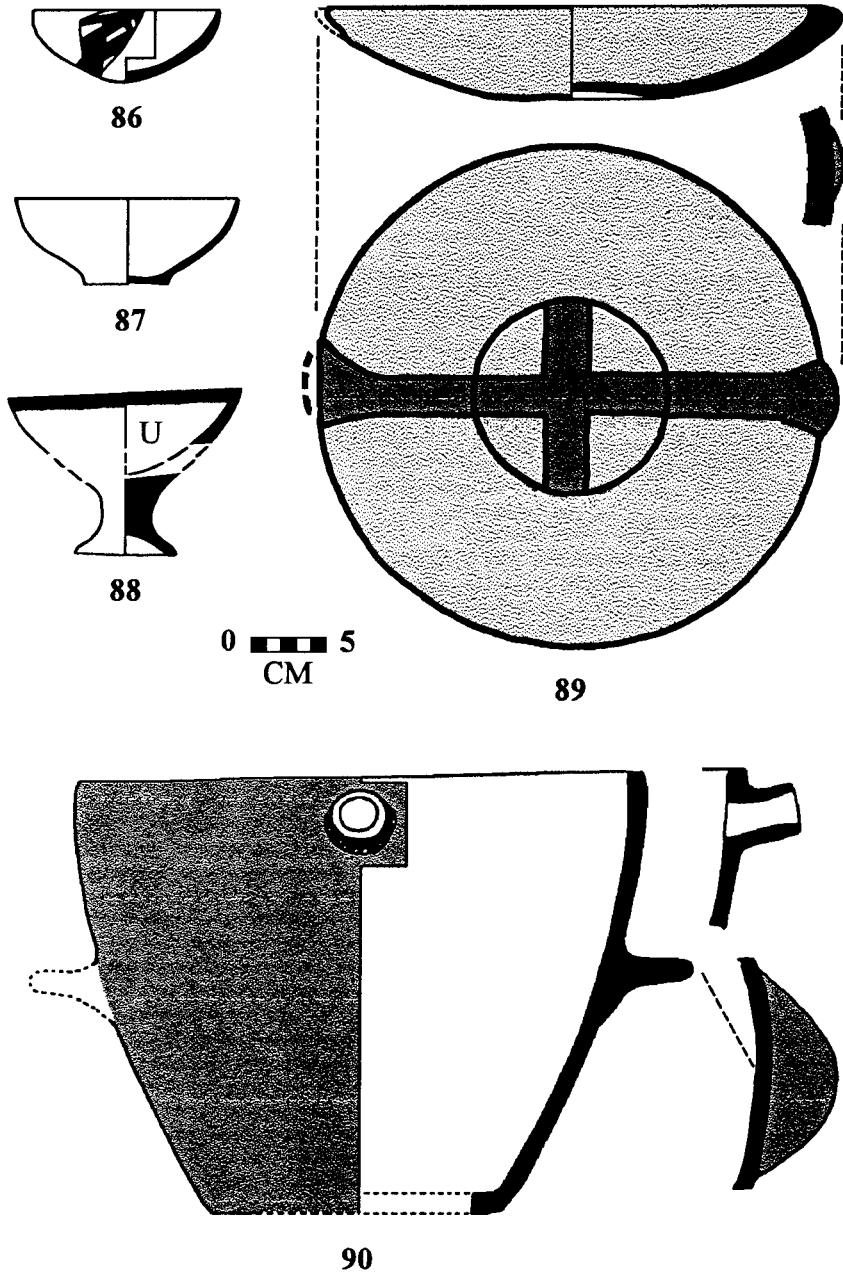
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
73	Bowl (cup)	Open	very small	deep	---	Bab adh-Dhra'	Schaub and Rast 1989: 363 (fig. 223:44)
74	Bowl (cup)	Open	small	very deep	---	Bab adh-Dhra'	Schaub and Rast 1989: 329 (fig. 201:2)
75	Bowl	Open	very small	intermediate	<i>Technique: Ware: Color: 5YR/7/4 (pink); Manufacture: Handmade; Firing: Vitrification (green or glassy), oxidation (pink); Surface Treatment: Slip: Medium; 2.5YR 4/4 (reddish-brown)</i>	Tall al-'Umayri	Daviau 1991: 121 (fig. 6.23:11)
76	Bowl	Open	very small	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 335 (fig. 204:10)
77	Bowl	Open	medium	intermediate	<i>Technique: Ware: Type: "Khirbet Kerak"; Comments: Vessel Parts: S-shaped wall profile; omphalos base</i>	Tall ash-Shuneh	Leonard 1992: 153 (pl. 15:16)
78	Bowl	Open	small	deep	---	Bab adh-Dhra'	Schaub and Rast 1989: 377 (fig. 232:3)
79	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: pinkish; Inclusions: White and crushed pottery; Levigation: Coarse; Manufacture: Handmade; Firing: Medium-soft; core grey ish-buff; Surface Treatment: Slip: Lilac on rim and int.</i>	Tall Abu al-Kharaz	Fischer 1993: 297 (fig. 12:4)
80	Bowl	Open	small	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 379 (fig. 233:23)
81	Bowl	Open	medium	intermediate	<i>Technique: Ware: Type: "Khirbet Kerak"; Comments: Vessel Parts: Carinated wall; omphalos base</i>	Tall ash-Shuneh	Leonard 1992: 153 (pl. 15:15)
82	Bowl	Open	medium	intermediate	<i>Technique: Inclusions: Medium size and light grey color; Manufacture: Tournette; Firing: Medium-hard; core buff; Surface Treatment: Burnishing: Diagonally hand burnished; Slip: Red on ext.</i>	Tall Abu al-Kharaz	Fischer 1993: 296 (fig. 11:1)
83	Bowl (plate)	Open	medium	shallow	---	Bab adh-Dhra'	Schaub and Rast 1989: 333 (fig. 203:3)
84	Bowl	Open	medium	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 361 (fig. 222:20)
85	Bowl	Open	small	intermediate	---	Bab adh-Dhra'	Schaub and Rast 1989: 335 (fig. 204:8)



Early Bronze II-III pottery examples. Bowls (nos. 73-85).

112 ANCIENT POTTERY OF TRANSJORDAN

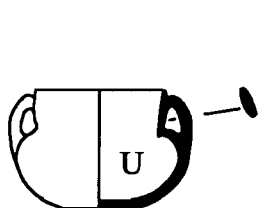
No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
86	Bowl (hemispherical bowl)	Open	small	intermediate	<i>Technique: Ware:</i> Color: ext./int. 5YR7/6 (redd ish-yellow); <i>Manufacture:</i> Coil; <i>Firing:</i> Underfired; core 2.5YR5/0 (grey);	Tall al-'Umayri	Harrison 1997: 108 (fig. 5.9:18)
87	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: ext./int. 2.5YR6/6 (light red); <i>Manufacture:</i> Coil; <i>Firing:</i> Underfired; core 2.5YR4/0 (dark grey)	Tall al-'Umayri	Harrison 1997: 153 (fig. 5.30:1)
88	Bowl (chalice)	Open	—	intermediate	<i>Technique: Ware:</i> Type: Orange tan; Color: 5YR7/6 (redd ish-yellow) and 7.5YR7/4 (pink); <i>Inclusions:</i> Very few small black and white (0.2 mm-1.0 mm); <i>Manufacture:</i> Very well made; <i>Comments: Vessel Dimensions:</i> Original publication unscaled	Bab adh-Dhra'	Schaub 1981: 117 (fig. 20:12)
89	Bowl (platter)	Open	large	shallow	<i>Technique: Inclusions:</i> Medium fine grey and white; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Medium-hard; core light redd ish-brown, grey; <i>Surface Treatment: Burnishing:</i> Irregular hand burnished, cross pattern on base; <i>Slip:</i> Brown ish-red on int./ext.	Tall Abu al-Kharaz	Fischer 1993: 27 (fig. 12:1)
90	Bowl (vat)	Open, spouted	large	deep	<i>Technique: Ware:</i> Color: grey ish-buff; <i>Inclusions:</i> White and grey; <i>Levigation:</i> Coarse; <i>Manufacture:</i> Handmade; <i>Firing:</i> Medium; <i>Surface Treatment: Slip:</i> Self-same; <i>Wash:</i> Brown ish-red grain	Tall Abu al-Kharaz	Fischer 1993: 299 (fig. 13:4)



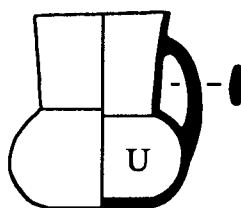
Early Bronze II-III pottery examples. Bowls (nos. 86-90).

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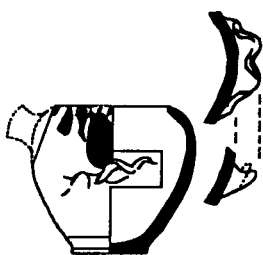
No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
91	Bowl	Open, necked	—	intermediate	<i>Comments: Vessel Dimensions:</i> Original publication unsealed	Bab adh-Dhra'	Rast and Schaub 1980: 35 (fig. 11:5)
92	Bowl	Open, necked	—	deep	<i>Comments: Vessel Dimensions:</i> Original publication unsealed	Bab adh-Dhra'	Rast and Schaub 1980: 35 (fig. 11:4)
93	Bowl (spouted bowl)	Open, spouted	small	deep	<i>Surface Treatment: Incising:</i> Stab marks circling rim; <i>Painting:</i> Red in broad-banded design, "trickle-paint ware"; <i>Comments:</i> Redated by Richard after publication to EB IV.	Khirbat Iskandar	Richard 1982: 294 (fig. 4:1)
94	Bowl (cooking pot)	Open, spouted	small	deep	<i>Surface Treatment: Applique:</i> Added knobs on both sides of spout; <i>Slip;</i> <i>Comments: Vessel Parts:</i> Wavy ledge handles	Bab adh-Dhra'	Schaub and Rast 1989: 394 (fig. 250:1)
95	Bowl (spouted bowl)	Open, spouted	medium	deep	—	Bab adh-Dhra'	Schaub and Rast 1989: 347 (fig. 215:2)
96	Jar (spouted jar)	Closed, spouted	—	short	—	Bab adh-Dhra'	Schaub and Rast 1989: 373 (fig. 230:2)



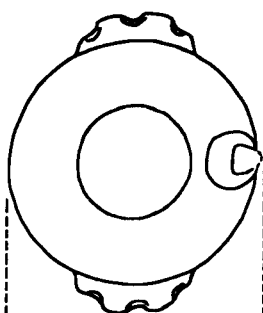
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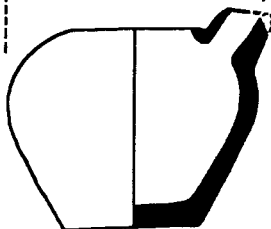
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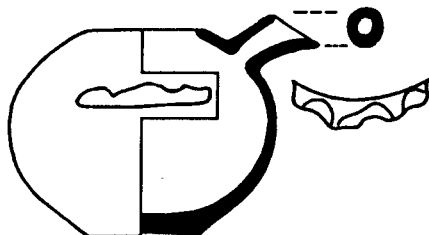
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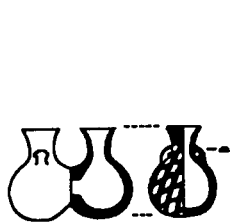
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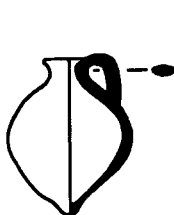
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Early Bronze II-III pottery examples. Bowls (nos. 91-95) and jar (no. 96).

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
97	Jar (twin amphoriskos)	Closed	---	very short	---	Bab adh-Dhra'	Schaub and Rast 1989: 373 (fig. 230.13)
98	Jug (juglet)	Closed	---	very short	<i>Technique: Ware: Color: ext. 7.5YR8/7 (pink ish-white); Manufacture: Handmade; Firing: Reduced; core 7.5YR8/4 (pink); Surface Treatment: Slip: 7.5YR N6 (grey) on ext. of rim and base</i>	Tall al-'Umayri	Daviau 1991: 134 (fig. 6.32-34)
99	Jug (juglet)	Closed	---	very short	<i>Technique: Ware: Color: 10YR6/2 (light brown ish-grey); Manufacture: Coil; Firing: Oxidized (pink)</i>	Tall al-'Umayri	Harrison 1997: 153 (fig. 5.30.6)
100	Jar	Closed	---	---	<i>Comments: Vessel Parts: Curve base (Egyptian influence); Vessel Dimensions: Original publication unscaled</i>	Bab adh-Dhra'	Rast and Schaub 1980: 35 (fig. 11.3)
101	Jar (amphoriskos)	Closed	---	short	<i>Technique: Ware: Color: brown ish-grey; Inclusions: Medium with dark grey; Firing: Hard; Surface Treatment: Burnishing: Vertical metallic hand burnished; Slip: Redd ish-brown; Comments: Vessel Parts: 2 vertical pierced lug handles and 1 vertical handle from rim-to-body</i>	Tall Abu al-Kharaz	Fischer 1993: 297 (fig. 12.8)
102	Jug	Closed	---	---	<i>Technique: Ware: Type: orange tan; Color: 5YR7/6 (redd ish-yellow); Inclusions: Small black and white (0.2 mm-1.0 mm); Surface Treatment: Slip: 10R4/8 (red); Comments: Vessel Parts: Pinched lip; ear handle; body covered with light green incrustation; Vessel Dimensions: Original publication unscaled</i>	Bab adh-Dhra'	Schaub 1981: 113 (fig. 18.6)
103	Jug	Closed	---	short	---	Bab adh-Dhra'	Schaub and Rast 1989: 331 (fig. 202.2)
104	Jug	Closed	---	tall	---	Bab adh-Dhra'	Schaub and Rast 1989: 351 (fig. 217.7)
105	Jar (amphora)	Closed	---	tall	<i>Technique: Manufacture: Handmade; Firing: Medium; Surface Treatment: Burnishing: Vertical hand burnished; Slip: Fine, red</i>	Tall Abu al-Kharaz	Fischer 1993: 299 (fig. 13.3)



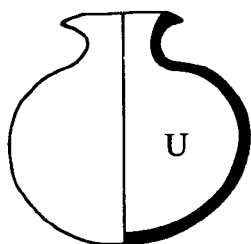
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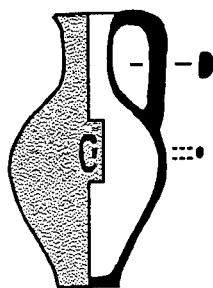
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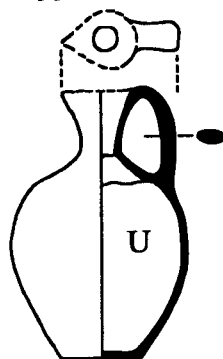
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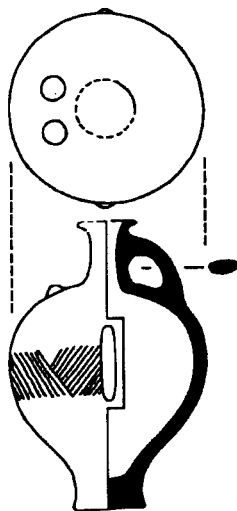
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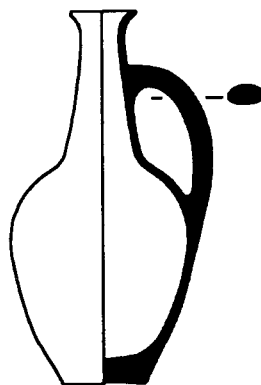
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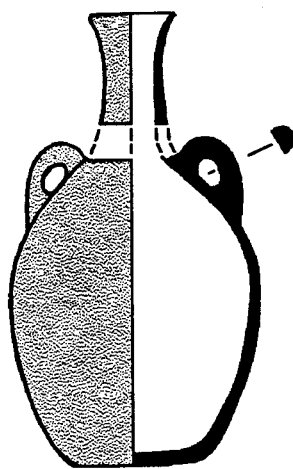
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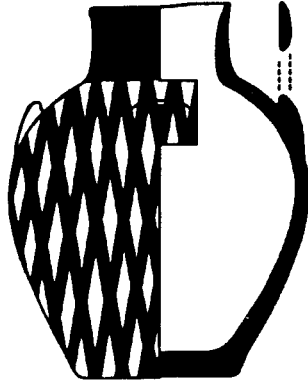


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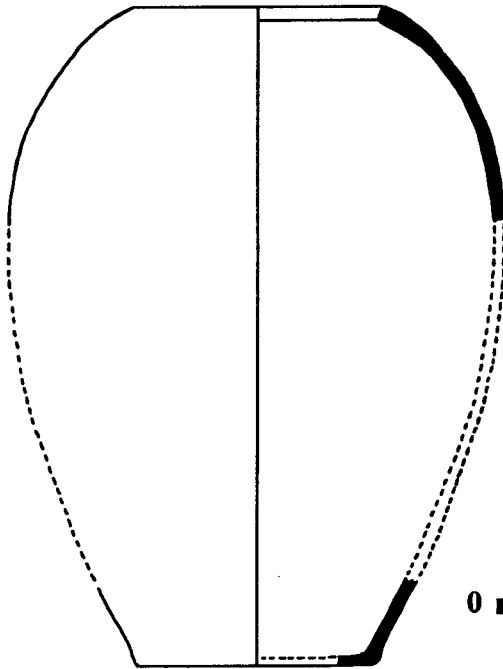
Early Bronze II-III pottery examples. Jars (nos. 97, 100, 101, and 105) and jugs (nos. 98, 99, 102-104).

118 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
106	Jar	Closed	--	short	--	Bab adh-Dhra'	Schaub and Rast 1989: 323 (fig. 194:2)
107	Jar (holemouth jar)	Closed	--	tall	<i>Technique: Ware: Color: 5YR4/2 (dark redd ish-grey); Manufacture: Handmade; Firing: Reduced (grey)</i>	Tall al-'Umayri	Fisher 1997: 224 (fig. 8.3:1)



106

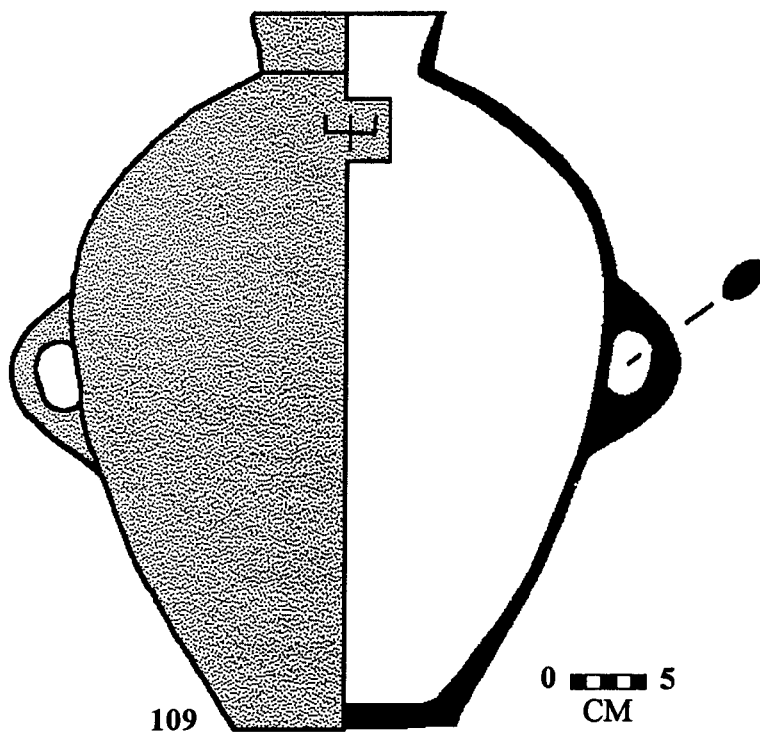
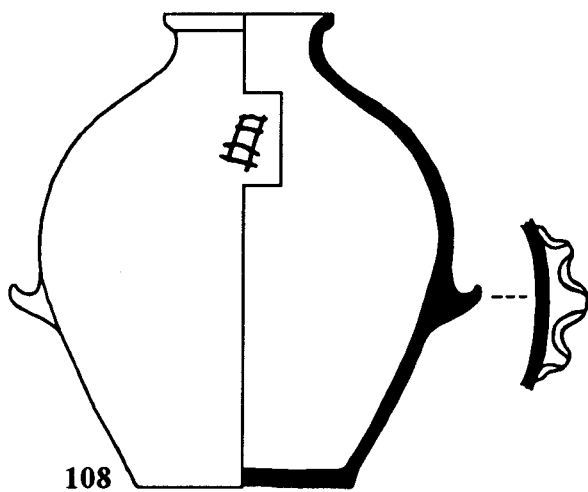


107

Early Bronze II-III pottery examples. Jars (nos. 106 and 107).

120 ANCIENT POTTERY OF TRANSJORDAN

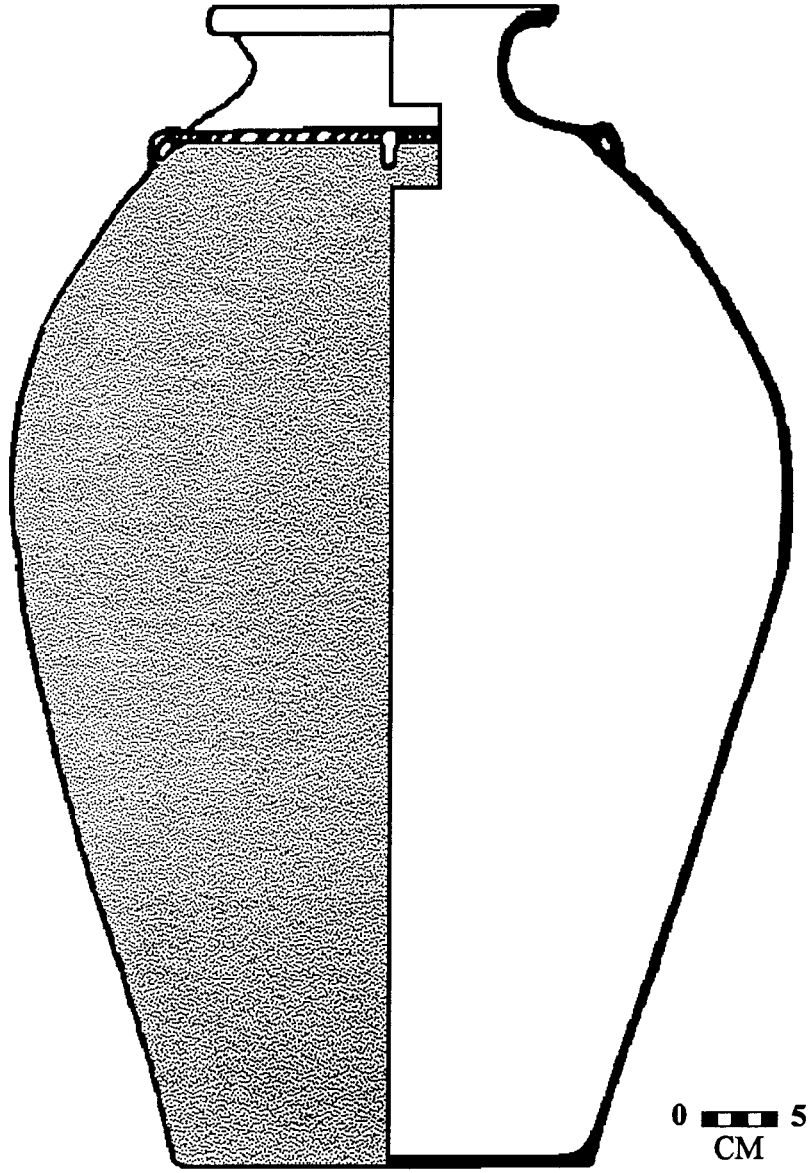
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
108	Jar (storage jar)	Closed	—	tall	<i>Technique: Ware: Color: 7.5YR 5/0 (grey); Manufacture: Coil; Firing: Underfired, core 7.5YR4/0 (dark grey)</i>	Tall al-'Umayri	Harrison 1997: 143 (fig. 5.26:7)
109	Jar (storage jar)	Closed	—	tall	<i>Technique: Ware: Color: orange buff; Inclusions: Mainly white; Levigation: Coarse; Manufacture: Handmade; Firing: Medium-hard; core grey ish-buff; Surface Treatment: Slip: Self-same; Wash: Red grain</i>	Tall Abu al-Kharaz	Fischer 1993: 299 (fig. 13:8)



Early Bronze II-III pottery examples. Jars (nos. 108 and 109).

122 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
110	Jar (storage jar)	Closed	--	very tall	Techniques: <i>Ware:</i> Type: Metallic; <i>Manufacture:</i> Neck and rim wheel- made; <i>Firing:</i> Hard-medium; <i>Sur- face Treatment:</i> Relief: Rope; <i>Slip:</i> Fine, thick pinkish-buff; Comments: <i>Vessel Parts:</i> 4 mini- ature handles	Tall Abu al-Kharaz	Fischer 1993: 299 (fig. 13:7)



110

Early Bronze II-III pottery examples. Jar (no. 110).

The Early Bronze IV Period

Introduction. Evidence of the EB IV period is scarce in Syro-Palestine, except in Transjordan where it provides a link between EB III and the Middle Bronze Age. Ceramics of EB IV A represent a continuum from EB II-III in respect to technique, surface treatment/decoration, and form.

This description is from Khirbat al-Hammah (Wightman 1988), Bab adh-Dhra' (Schaub and Rast 1989: 490-503), Tall al-Hayyat (Falconer and Magness-Gardiner 1983), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants, particularly regarding Iktanu (Prag 1996, personal communication).

Technique. There were no significant changes in fabric from EB II-III period to the EB IV A period, but fabrics were sometimes harder and thinner in the EB IV B period. In fact, the ware was "often remarkably thin for the vessel size" (Prag 1996, personal communication). There were regional variations in production technologies. **Ware:** Ware colors included grey-green, pink, reddish-yellow-to-red, reddish-brown, and brown. **Inclusions:** Clay had a high percentage of inclusions. These were generally small-to-medium grits of basalt, chert, and limestone. Quartz sand was used along with grog in non-cooking vessels and was used with calcite in cooking wares. **Levigation:** Vessels usually had finely levigated clay. Clay preparation in the EB IV B period was sometimes inferior to that of the EB IV A period. **Manufacture:** Manufacturing techniques did not change significantly from the EB II-III period. Bowls were either handmade or wheelmade. Techniques consisted of handmade coils finished on a tournette, as well as handmade parts (such as necks) added subsequently to wheelmade bodies. Bodies and bases were handmade and joined by irregular wet-smoothing. The finishing of bowls was done by wheel-smoothing or wet-smoothing by hand. Necks were made separately on a tournette or by hand. Rims (and upper necks) were always finished on the wheel and were thin, whereas bodies were irregularly hand-smoothed while wet. Some Syrian wheelmade vessels were imported. **Firing:** Clay in the EB IV A period was evenly fired resulting in even-to-buff, yellows, and oranges. During the EB IV B period, clays were not always well fired.

Surface treatment. Four basic treatments during this period were slip, slip and burnish, pattern combing, and untreated. Rope molding and finger-impressed or incised bands were characteristic of EB IV vessels. Additional coils, impressing, or incising was used to disguise the seam

where necks were added to bodies. **Slipping:** Slips were predominantly colored red-to-deeper red, brown, light cream, and pink. Red slip sometimes turned black during the firing process (due to oxygen reduction). Typical EB IV B ware was light cream slip and hard fabric. Red slip was applied to all root forms. **Burnishing:** Early Bronze IV burnishing techniques dated back to the EB II-III period, and included irregular, horizontal, and radial styles. Burnishing became extensive in the EB IV A period and lessened in the EB IV B period. **Painting:** Red paint was applied, sometimes in combination with other treatments such as incisions. Styles included painted slip lines and trickles.

Impressing: Impressed decorations included scalloping (continued from the EB II-III period), finger impressing on rims, finger or tool impressing on jars, and raised-band impressing on necks of jars. The decorative hallmarks of the EB IV A period included wavy "pic-crust" rims and handles (especially on vestigial ledge handles) and thin finger-impressed bands on jars, teapots, other holemouth vessels, and bowls. Shallow fork impressing came into use during the EB IV B period.

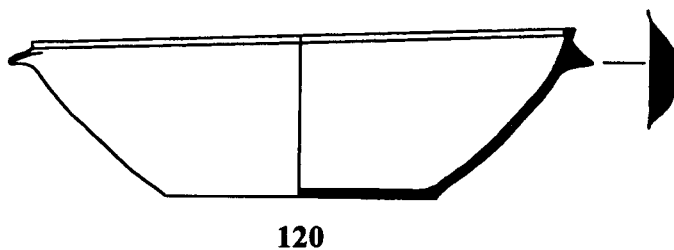
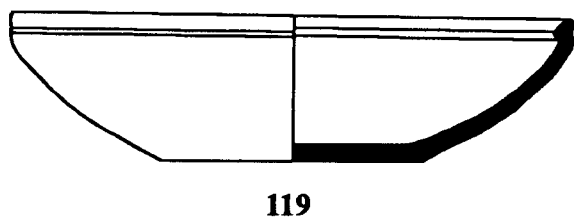
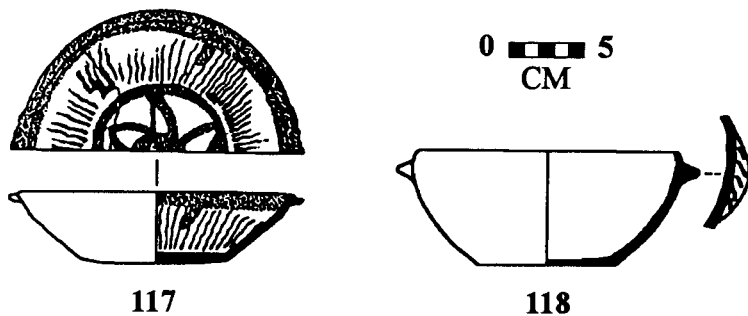
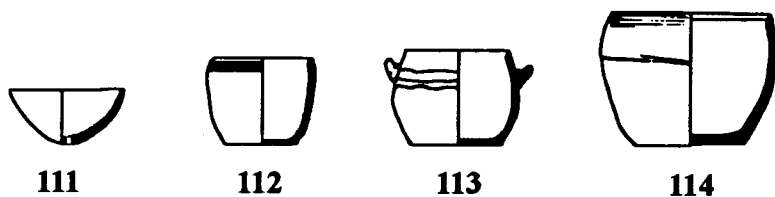
Incising: Incised lines (single or in groups, straight or wavy), stab marks, and dots were common in the EB IV period on all root forms. "Body" combing was a particular incising style of the EB IV period (not to be confused with "pattern" combing of the EB III period). While incised lines or groups of lines were typical of all of Transjordan during the EB IV period, the decoration was less common in the north than in the southern Jordan Valley, the central plateau, and the south. In the EB IV A period, light body combing and grooving were present while the characteristic EB IV B incising (horizontal bands of parallel and wavy incised combing) was seldom used in the EB IV A period. Such combing incisions on jars and jugs continued from the EB II-III period. The characteristic EB IV B incision decoration was applied on the body of all root forms, and at or near the connection of the neck and shoulder on jars and jugs. Early Bronze IV B grooving consisted of fine marking on the outside of bowls and jar shoulders. Hatching was common during the EB IV B period on vessel necks.

Forms (pottery examples 111-132). The variety of narrow-necked vessels declined during the EB IV A period from EB II-III. During the EB IV A period, EB II-III bowls and holemouth vessels evolved. Many EB IV rims were indistinguishable from those of EB II-III. An EB IV period hallmark form was the spouted, holemouth bowl or jar (aka: "teapot"). Wavy (rilled) rims were characteristic of the EB IV A period both on bowls

and holemouth jars. The EB II-III period witnessed the development of the platter bowl and specific rim forms on holemouth vessels which continued into the EB IV A period. **Bowls:** Bowl forms included basins, casseroles, cooking pots, cups, holemouth cooking pots, plates, platters, spouted bowls (aka: "teapots"), and other bowls. Bowl lip profiles included angular, flattened, rounded, squared, thickened, and thinned styles. Bowl rim profiles were sometimes doubled, but were more often simple or thickened. Bowl rim inflections were generally angular or straight. Bowl wall profiles included biconical, conical, and globular styles. Bowls were generally flat-based. Ledge handles were small, but functional, and had pushed-up, wavy edges. In the EB IV A period, red slip was sometimes applied to the rims of bowls and holemouth jars. Bowls had matte red paint without slip. Basins were sometimes quite large with flat bases. Cups were produced in a variety of styles, some red-slipped on the exterior. Bowls were manufactured in different sizes and varied geographically. A hallmark bowl form for the period in the south had an inverted rim inflection with exterior grooving—often red-slipped and burnished—but sometimes plain. Bowls sometimes had a doubled rim profile, a carry-over from the EB III period, which became increasingly pendant in the EB IV period. The northern-style cooking pot had a short neck and round base. Holemouth cooking pots were widely distributed in the Jordan Valley and central plateau. Platters, common throughout the Early Bronze Age, exhibited T-shaped and sometimes otherwise thickened rims in the EB IV period (a development of the EB III period which continued). Spouted vessels (aka: "spouted teapots") with wide flat bases were a period hallmark. They sometimes had a wavy rim in the EB IV A period. The EB IV B period was distinguished from the EB IV A period by its cups and bowl forms. Early Bronze IV B bowl shapes commonly included cyma (rounded "S"-curved) and carinated (angular "S"-curved) wall profiles. **Jars:** Jar forms included amphoriskoi, bottles, cooking pots, holemouth jars, storage jars, and other necked jars. Jars declined in frequency from the EB II-III period. Early Bronze IV jars exhibited few new characteristics, but continued the EB II-III trend. Jar lip profiles included rounded, squared, and thinned styles. Jar rim profiles were generally simple. Jar rim inflections were generally slightly curving or straight. Jar wall profiles were usually globular. Jar neck profiles were conical, curving, or cylindrical. Amphoriskoi were very short-to-short jars, sometimes with a pair of lug handles. Bottles were not common. They usually had two loop handles and a cylindrical neck. Jars were made both

plain and fancy, the more common type was plain with narrow necks, although there were some with combing. Holemouth jars were common, and sometimes had red slip applied at the rims. Large, flat-based storage jars with envelope ledge handles were common. **Jugs:** Jug forms included bottles and other jugs. As with jars, jugs also declined in frequency from the EB II-III period. Jug lip profiles were generally rounded. Jug rim profiles were often pinched or simple. A distinctive, but uncommon, characteristic was the quatrefoil rim profile on jugs, however jug openings were generally without pinched lips. Jug rim inflections included angular, curved, or straight styles. Jug wall profiles were mostly globular. Jug neck profiles were conical, curving, or cylindrical. Necks on jugs commonly outcurved to the lip. Jugs were seldom slipped or burnished. Jugs sometimes had red painted decoration on the outside and/or inside, but were also left unpainted. **Miscellaneous vessels:** Miscellaneous vessels included funnels, lamps, and strainers. Funnels were very rare. Lamps were characteristically four-spouted, crudely fashioned vessels with rounded or flat bases and undecorated. **Vessel parts:** Bases included curved and flat styles. They were generally uniform throughout the EB IV period. There was a regional variation in the width of bases, and whether a particular vessel type might have a curved or flat base. Handles included ledge, loop, lug, and strap styles. Ledge handles were functional with three or four envelopes. Non-functional "pie-crust" ledge handles (vestigial from the EB II-III period) were characteristic of the EB IV A period. Ovoid loop handles were common on EB IV A period jugs and jars. Pierced lug handles were attested on holemouth forms. Strap handles were put on jars.

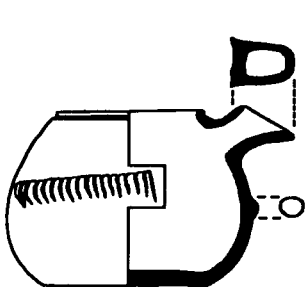
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
111	Bowl	Open	small	intermediate	<i>Comments:</i> Possible funnel or strainer	Tall Iktanu	Prag 1988: 68 (fig. 5:1)
112	Bowl (cup)	Open	very small	deep	—	Tiwal ash-Sharqi	Tubb and Wright 1985: 126 (fig. 4:NE16:6)
113	Bowl (cup)	Open	very small	deep	—	Tiwal ash-Sharqi	Tubb and Wright 1985: 126 (fig. 3:NE 20:1)
114	Bowl	Open	small	intermediate	—	Tiwal ash-Sharqi	Helms 1983: 83 (fig. 22:12)
115	Bowl	Open	small	intermediate	—	Khirbat Iskandar	Parr 1960: 131 (fig. 1:19)
116	Bowl	Open	medium	shallow	<i>Technique: Ware:</i> Color: pink; <i>Surface Treatment: Slip:</i> Lustrous red on int/ext.	'Ara'ir	Olavari-Goicoechea 1969: 241 (fig. 2:5)
117	Bowl	Open	medium	intermediate	<i>Technique: Inclusions:</i> Many small-to-medium chert and lime grits; <i>Levigation:</i> Well; <i>Firing:</i> Core ochre; surface orange; <i>Comments: Vessel Parts:</i> Pendant rim	al-Hammah	Wightman 1988: 152 (fig. 12:8)
118	Bowl	Open	medium	intermediate	—	Tall Iktanu	Prag 1974: 90 (fig. 7:5)
119	Bowl (basin)	Open	large	intermediate	<i>Surface Treatment: Burnishing:</i> Radial on int.; horizontal on ext.; <i>Slip:</i> Red or pink; <i>Comments:</i> <i>Vessel Parts:</i> Flat base; inverted rim with exterior groove	Tall Iktanu	Prag 1988: 68 (fig. 5:11)
120	Bowl (basin)	Open	large	intermediate	<i>Comments: Vessel Parts:</i> Impressed decorated base; 2 ledge handles	Tiwal ash-Sharqi	Helms 1983: 77 (fig. 16:7)



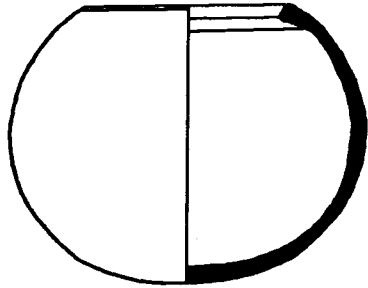
Early Bronze IV pottery examples. Bowls (nos. 111-120).

130 ANCIENT POTTERY OF TRANSJORDAN

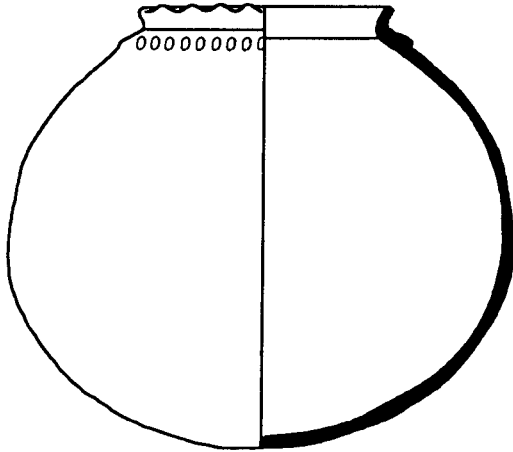
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
121	Bowl (spouted bowl)	Open, spouted	medium	intermediate	—	Bab adh-Dhra'	Schaub and Rast 1989: 479 (fig. 275:6)
122	Bowl (cooking pot)	Open	medium	deep	<i>Comments: Vessel Parts:</i> Holemouth; curve base	Khirbat Iskandar	Richard 1982: 294 (fig. 4:2)
123	Jar (cooking pot)	Closed	—	tall	<i>Comments: Vessel Parts:</i> Everted rim; curve base	Khirbat Iskandar	Richard 1982: 294 (fig. 4:3)
124	Jar (amphoriskos)	Closed	—	very short	<i>Surface Treatment: Incising</i>	Tiwal aah-Sharqi	Helms 1983:81 (fig. 20:1)
125	Jar	Closed	—	very short	—	Bab adh-Dhra'	Schaub and Rast 1989: 477 (fig. 274:12)
126	Jug	Closed	—	short	<i>Techniques: Inclusions:</i> Many small-to-medium chert and lime grits; <i>Levigation:</i> Fine; <i>Firing:</i> Even-to-light orange ochre	al-Hammah	Wightman 1988: 147 (fig. 8:7)



121



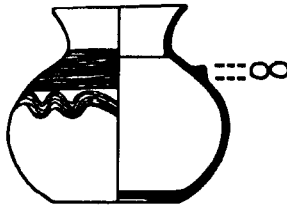
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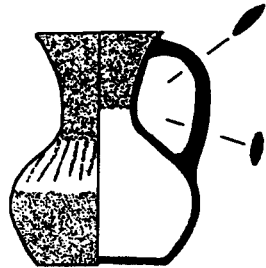
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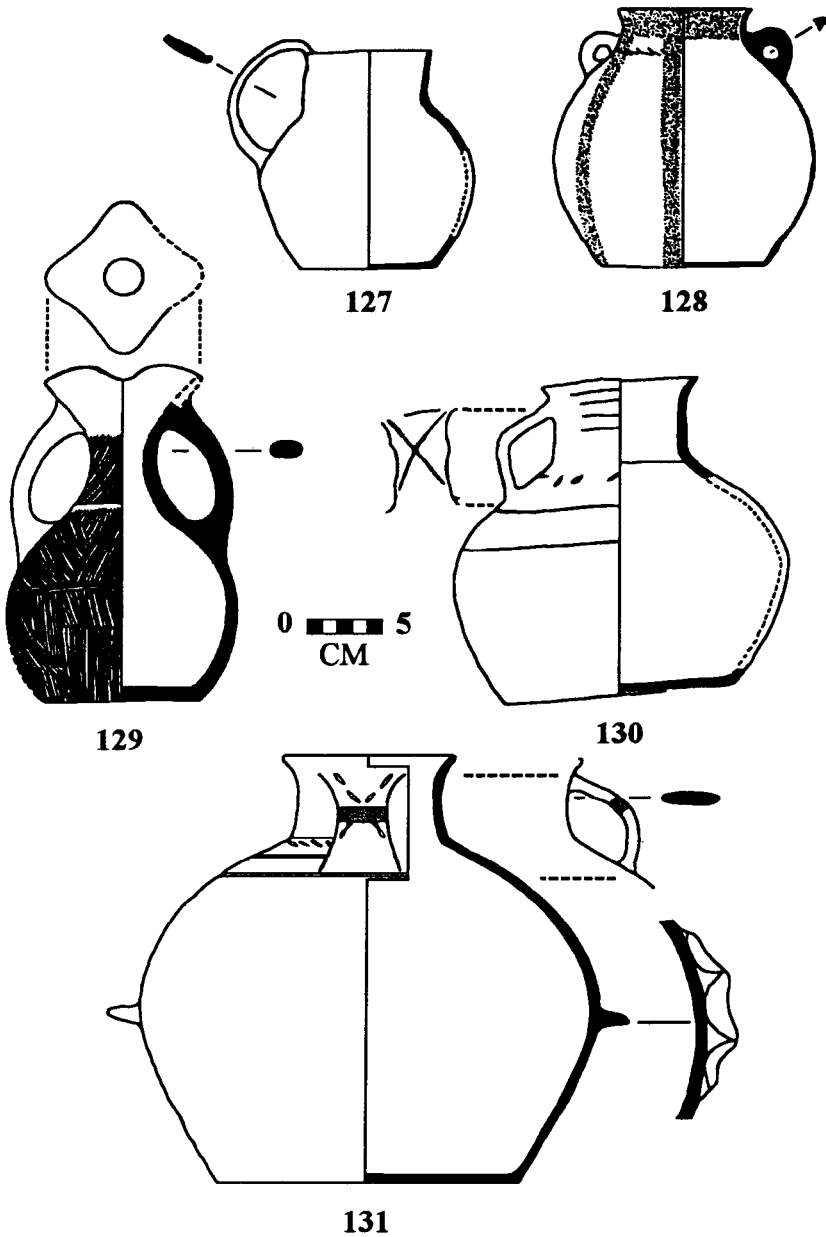


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Early Bronze IV pottery examples. Bowls (nos. 121 and 122), jars (nos. 123-125), and jug (no. 126).

132 ANCIENT POTTERY OF TRANSJORDAN

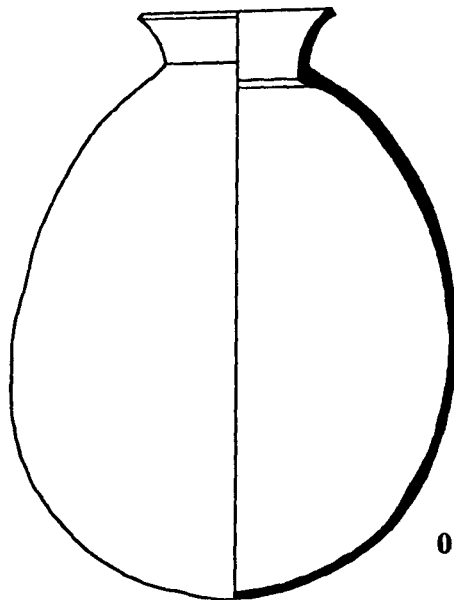
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
127	Jug	Closed	---	short	---	Tiwal ash-Sharqi	Heims 1983: 77 (fig. 16:5)
128	Jar	Closed	---	short	Technique: <i>Inclusions:</i> Many small-to-large chert and lime grits; <i>Levigation:</i> Fairly well; <i>Firing:</i> Core: dark ochre; surface: light ochre	al-Hammah	Wightman 1988: 148 (fig. 9:8)
129	Jug	Closed	---	short	---	Bab adh-Dhra'	Schaub and Rast 1989: 485 (fig. 281:1)
130	Jug	Closed	---	short	---	Umm al-Bighal	Heims and McCreery 1988: 329 (fig. 9:2)
131	Jar	Closed	---	tall	Technique: <i>Ware:</i> Color: 10YR7/3; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> High; <i>Surface Treatment:</i> <i>Impressing:</i> Finger; <i>Incising:</i> "X" pattern on handles applied when wet; 2 parallel lines on shoulder; Comments: <i>Vessel Parts:</i> Tall neck with outcurving rim; squat ovoid body with flat base; 3 envelope ledge handles on body; 1 strap handle from below rim to shoulder; bronze band rivetted on strap handle's base; <i>Vessel Dimensions:</i> Int. diam. of mouth 10.8 cm; int. diam. of neck 8.1 cm; int. ht. 27.9 cm	Tall al-'Umayri	Waheeb and Palumbo 1993: 156 (fig. 4:5)



Early Bronze IV pottery examples. Jars (nos. 128 and 131) and jugs (nos. 127, 129, and 130).

134 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
132	Jar (storage jar)	Closed	—	tall	—	Tiwal ash-Sharqi	Helm 1983: 77 (fig. 16:9)



132

Early Bronze IV pottery examples. Jar (no. 132).

The Middle Bronze Age

In general, Middle Bronze Age ceramics were less sophisticated than those of the Early Bronze Age at its height (see Brown 1991: 185). Some of the sites currently associated with the Middle Bronze Age pottery culture in Transjordan include: Abu Snaslah, al-Qasir, Amman, Dayr 'Ayn 'Abata, Jarash, Katarat as-Samra, Khirbat al-Makhayyat, Khirbat Umm ad-Dananir, Nimrin, Quwayliba (Abila), Tabaqat Fahl (Pella), Tall Abu an-Ni'aj, Tall al-Hayyat, Tall al-'Umayri, and Tall Jawa (North), as well as small sites along the Wadi al-Badan, Wadi al-Yabis, and Wadi Ziqlab. This description is from Tall al-Hayyat (Falconer and Magness-Gardiner 1983), Tabaqat Fahl (Smith 1973), Katarat as-Samra (Leonard 1979), Amman (Najjar 1991), Homès-Fredericq and Franken (1986), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

The Middle Bronze I-II Period

Technique: Ware: Ware description can be a major consideration in establishing periodization of the Middle Bronze periods (e.g. "chocolate-on-white" or bichrome). Ware colors included pale brown-to-brown, pink-to-red, grey, and black. Brown ware was very indicative of the Middle Bronze Age and especially the MB I period. Household wares were produced in colors of drab light brown and reddish-to-yellowish. Cooking pots were dull reddish-brown or orange-brown. *Inclusions:* Coarse mixtures included large amounts of minerals which were sometimes visible on the surface—even when slipped. Most household vessel clays had inclusions of chert, limestone, and gypsum. Cooking pot ware had inclusions of limestone, calcite, and chert. Fine ware had inclusions of more varied size. Tempering agents varied greatly and included chaff, dung, or other organic materials which were well ground and thoroughly mixed with clay. Organic material, subsequently decayed away, sometimes left pock marks in the fabric. *Levigation:* Levigation was highly variable: well-prepared-to-coarse. *Manufacture:* The introduction (possibly in the MB I period) of the faster turning weighted wheel improved vessel production and has provided a major diagnostic tool for determining periodization. In terms of manufacture, most vessels were wheelmade, except cooking pots which remained handmade. *Firing:* Firing was soft or hard, often excellent. Some thick, grey-blue cores resulted from poor firing. Household wares were mostly soft; fine ware was fired at higher temperatures than other wares.

Surface treatment. "Chocolate-on-white" or "chocolate-on-cream" ware was a characteristic decoration of the MB II period which was comprised of a combination of reddish-brown painted designs over a white slip which was then burnished. Household vessels generally remained undecorated. *Slipping:* Slips included white, cream, red (common), reddish-yellow, brown, black, and self-slipped. Cooking pot ware sometimes had a self-slip and double-rope design. Fine ware sometimes had a white slip. Household vessels were generally wet-smoothed or self-slipped.

Burnishing: Burnishing was utilized in a number of patterns, but may be difficult for the archaeologist to detect. Red burnished Middle Bronze wares, well-attested elsewhere, were extremely rare in Transjordan.

Painting: Paint colors were often red and dark reddish. Painted designs included concentric circles or straight, cross-hatched, and wavy lines in red and black colors. Painting was applied on rim bands. Middle Bronze Age red-brown painting (which continued into the Late Bronze Age) was distinguished from the MB II period "chocolate-on-white" ware by its dull, pink slipped fabric and a lack of burnish (Brown 1991: 189).

Appliqué: Exterior knobs of clay were extant. Longer, pointed and curved knobs may have served as handles. Strips of clay attached to the upper surface of a loop handle, or intertwined strips of clay bonded to the handle's surface, were also applied. *Impressing:* Impressing included applied motifs and impressions (some by fingers). *Incising:* Decoration included incised horizontal and wavy bands. There was also continuous body combing.

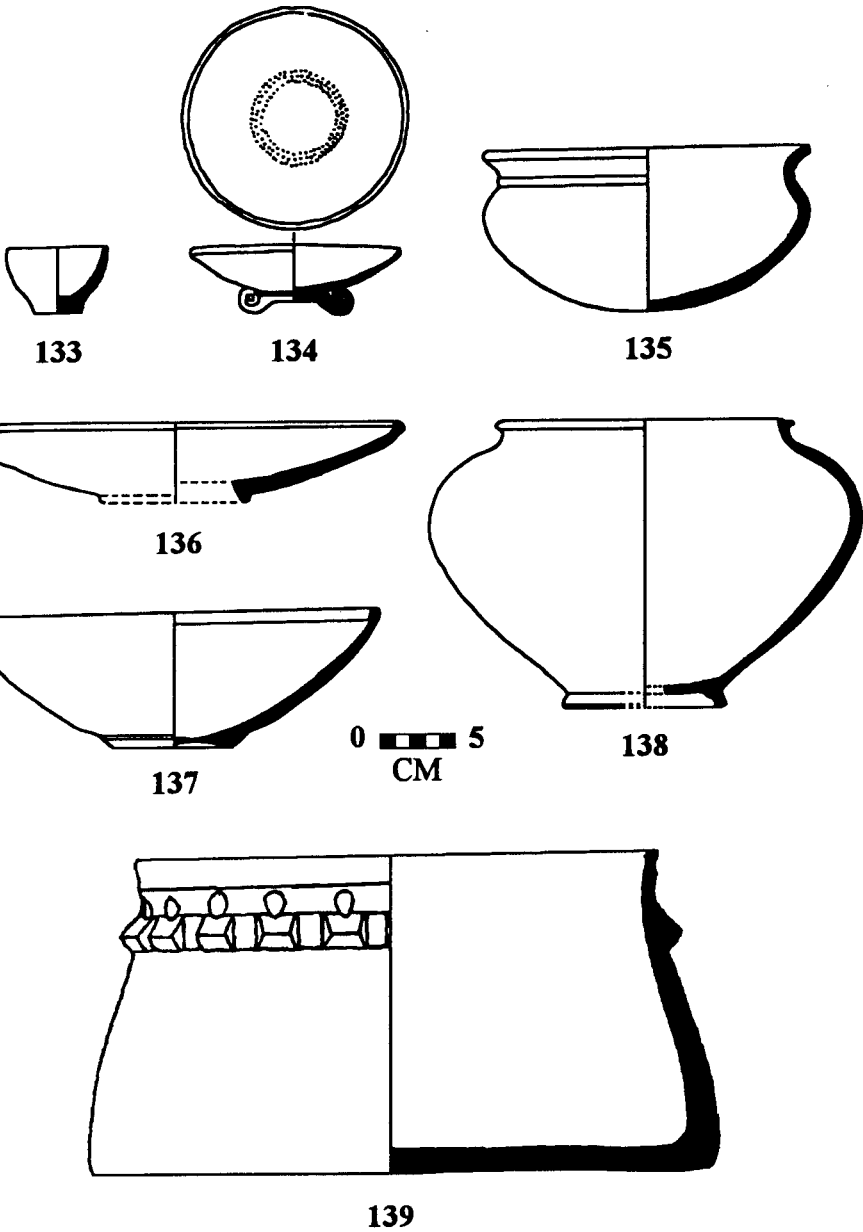
Forms (pottery examples 133-157). The MB I-II period forms apparently evolved directly from EB IV vessels. **Bowls:** Bowl forms included chalices, cooking pots, cups, goblets, kraters, platters, vases, and other bowls. Bowl lip profiles included flattened, rounded, squared, thickened, and thinned styles. Bowl rim profiles were generally simple or thickened. Bowls rim inflections exhibited a variety of curved and straight styles. Bowl wall profiles included carinated, conical, cylindrical, and globular styles. The carinated profile, made possible largely because of the faster potter's wheel, was a hallmark of the MB II period. Cooking pots generally had globular wall profiles, round bottoms, and no handles. Cooking pot ware typically had inclusions of limestone, calcite, and chert of a dull whitish or grey appearance. Cooking pots were generally colored dull reddish-brown or orange-brown. Cooking pots had thick vessel walls in proportion to the size of the vessel and were made by hand. The MB I

period household corpora almost always included the cylindrical, handmade cooking pot—a form which developed from the EB IV B period prototype (Brown 1991: 187). Kraters were slightly closed, deep, globular bowls with either horizontally-thickened or rounded lips. **Jars:** Jar forms included amphoriskoi, necked jars, storage jars, and other jars. Jar lip profiles included rounded, square (sometimes molded), and thickened styles. Rim profiles included doubled, flattened, and thickened styles. Jar rim inflections were generally angular or curved. Jar wall profiles were biconical, globular, or piriform. Jar neck profiles included conical, curving, and cylindrical styles. **Jugs:** Jug forms included alabastrons, juglets (cylindrical, dipper, piriform) and other jugs. Jug lip profiles included flattened, rounded, and thickened styles. Jug rim profiles included doubled, flattened, pinched, and thickened styles. Jug rim inflections were generally angular or curved. Jug wall profiles included cylindrical, globular, and piriform styles. Jug neck profiles were generally conical or curving. Dipper juglets first appeared in the MB I period and were characterized by an ovoid body and a flattened base. The MB II period dipper juglets became more attenuated and the flattened base was pointed. Jugs were sometimes made of fine ware.

Miscellaneous vessels: Miscellaneous forms included lamps. **Vessel parts:** Bases of the MB I period were differentiated from those of the EB IV B period by form and fabric. While other bases were used (e.g., trumpet bases on bowls), the most common base forms were flat (including disk and flat) and ring. Disk and flat bases continued from the EB IV period into the MB I-II period, while ring bases were first attested in the Middle Bronze Age and continued into the Late Bronze Age. Flat bases were frequent in the EB IV B period, but flat bases in pale brown and pinkish wares were more indicative of Middle Bronze periodization. During the MB I period, flat bases were common on all forms, but in the MB II period, they were more common on jars and jugs. Disk bases were common on all Middle Bronze Age vessels and were both low or high. Loop handles, “twisted” double handles, and “stranded” double handles (some in the MB I period, but more typical of the MB II period) were put on jugs and juglets.

138 ANCIENT POTTERY OF TRANSJORDAN

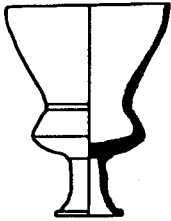
No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
133	Bowl	Open	very small	intermediate	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 40:767
134	Bowl	Open	small	intermediate	—	Tabaqat Fahl (Pella)	Wainman <i>et al.</i> 1993: 187 (fig. 14:1)
135	Bowl (cooking pot)	Open	medium	intermediate	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 36:853
136	Bowl (platter)	Open	large	shallow	—	Tall al-Hayyat	Falconer and Magness-Gardiner 1984: 67 (fig. 20:3)
137	Bowl	Open	large	intermediate	<i>Technique: Levigation:</i> Fairly gritty with grey core; <i>Firing:</i> Surface: 7.5YR7/4 (pink); <i>Surface Treatment: Slip:</i> 5YR8/2 (pinkish-white) int/ext.	Amman	Najjar 1991: 114 (fig. 8:3)
138	Bowl	Open	large	intermediate	<i>Technique: Levigation:</i> Gritty with grey core; <i>Firing:</i> Surface: 7.5YR7/3 (pink)	Amman	Najjar 1991: 115 (fig. 9:6)
139	Bowl (basin)	Open	large	intermediate	<i>Technique: Ware:</i> Color: pink; <i>Inclusions:</i> Very coarse, large limestone particles; <i>Surface Treatment: Impressing:</i> Finger; <i>Comments:</i> Published as EB IV, periodization revised per consultants	'Ara'ir	Olaverri-Goiocoechea 1969: 247 (fig. 5:12)



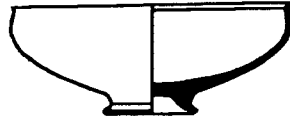
Middle Bronze I-II pottery examples. Bowls (nos. 133-139).

140 ANCIENT POTTERY OF TRANSJORDAN

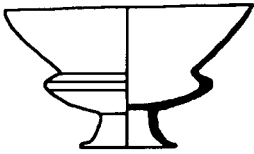
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
140	Bowl (goblet)	Open, footed	very small	deep	Comments: <i>Vessel Parts:</i> Footed base	Tabaqat Fahl (Pella)	Smith 1973: pl. 48:128
141	Bowl	Open	medium	intermediate	Technique: <i>Levigation:</i> Gritty with grey core; <i>Firing:</i> Surface: 7.5YR8/3 (pink); <i>Surface Treatment:</i> <i>Burnishing:</i> Int. spiral; ext. irregular horizontally; <i>Slip:</i> Int. 7.5YR8/2 (pinkish-white); ext. 7.5YR8/6 (reddish-yellow)	Amman	Najjar 1991: 115 (fig. 9:3)
142	Bowl (chalice)	Open, footed	medium	intermediate	Comments: <i>Vessel Parts:</i> Footed base	Tabaqat Fahl (Pella)	Smith 1973: pl. 62:223
143	Bowl	Open	medium	intermediate	Technique: <i>Ware:</i> Type: "Chocolate-on-white"; <i>Inclusions:</i> Very finely mixed with medium and tiny grits; <i>Firing:</i> Buff; <i>Surface Treatment:</i> <i>Painting:</i> Matte reddish-brown; <i>Slip:</i> Thick, highly burnished milk-white on int./ext.; Comments: <i>Vessel Dimensions:</i> Max. ht. 7.0 cm; rim diam. 21.2 cm	Tabaqat Fahl (Pella)	Hennessy <i>et al.</i> 1981: 277 (fig. 7:12)
144	Bowl	Open	medium	intermediate	Technique: <i>Levigation:</i> Fine with grey core; <i>Firing:</i> Surface: 7.5YR7/6 (reddish-yellow) with grey patches; <i>Surface Treatment:</i> <i>Burnishing:</i> Irregular horizontal on ext.	Amman	Najjar 1991: 115 (fig. 9:4)
145	Bowl	Open	medium	intermediate	Comments: <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 110:13
146	Bowl (krater)	Open	large	intermediate	Technique: <i>Inclusions:</i> Well mixed with medium and small grits; <i>Firing:</i> Buff; Comments: <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 117:1



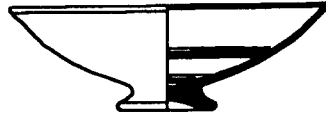
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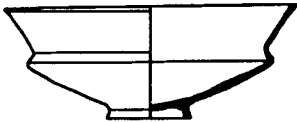
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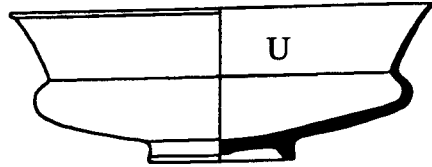
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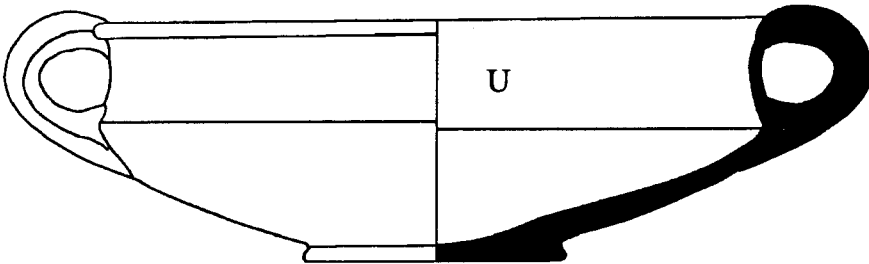


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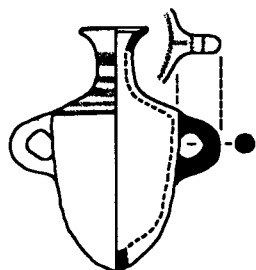


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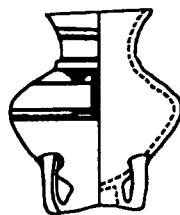
Middle Bronze I-II pottery examples. Bowls (nos. 140-146).

142 ANCIENT POTTERY OF TRANSJORDAN

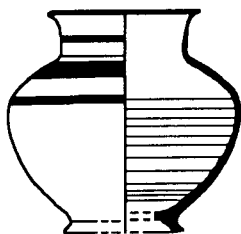
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
147	Jar (amphoriskos)	Closed	—	short	Technique: <i>Ware:</i> Type: "Chocolate-on-white"; <i>Inclusions:</i> Some small chert grits; <i>Levigation:</i> Fairly well; <i>Firing:</i> Light buff throughout, soft and chalky; <i>Surface Treatment:</i> <i>Painting:</i> Purple brown; <i>Slip:</i> White from below shoulder carination up and over lip	Tabaqat Fahl (Pella)	Potts <i>et al.</i> 1985: 207 (fig. 9:4)
148	Jar	Closed	—	very short	Technique: <i>Ware:</i> Type: "Chocolate-on-white"	Tabaqat Fahl (Pella)	Hennessy 1985: 107 (fig. 3:7)
149	Jar	Closed	—	short	Technique: <i>Ware:</i> Type: gritty ware with grey core; <i>Firing:</i> Surface: 10YR6/6 (light red); <i>Surface Treatment:</i> <i>Burnishing:</i> <i>Painting:</i> 4 lines of 10YR4/3 (weak red) on ext.; <i>Slip:</i> 5YR8/2 (pinkish-white)	Amman	Najjar 1991: 119 (fig. 11:11)
150	Jar	Closed	—	tall	Technique: <i>Ware:</i> Type: "Chocolate-on-white"	Tabaqat Fahl (Pella)	Hennessy 1985: 107 (fig. 3:9)
151	Jar	Closed	—	tall	Technique: <i>Ware:</i> Type: "Bichrome"	Tabaqat Fahl (Pella)	Smith 1973: pl. 46:42



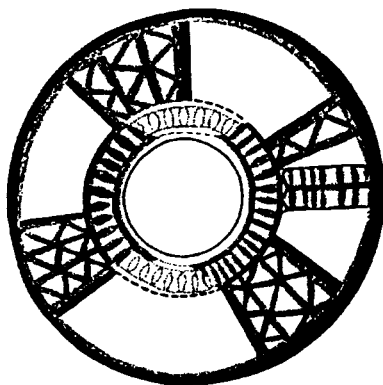
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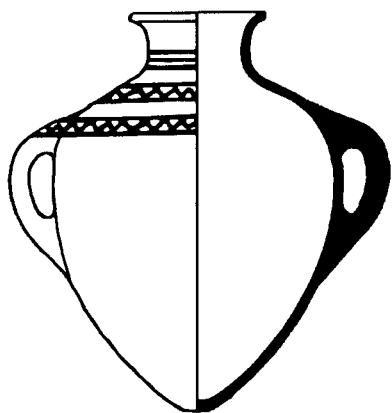
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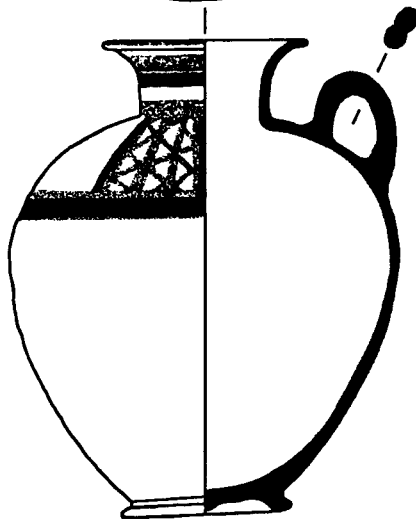
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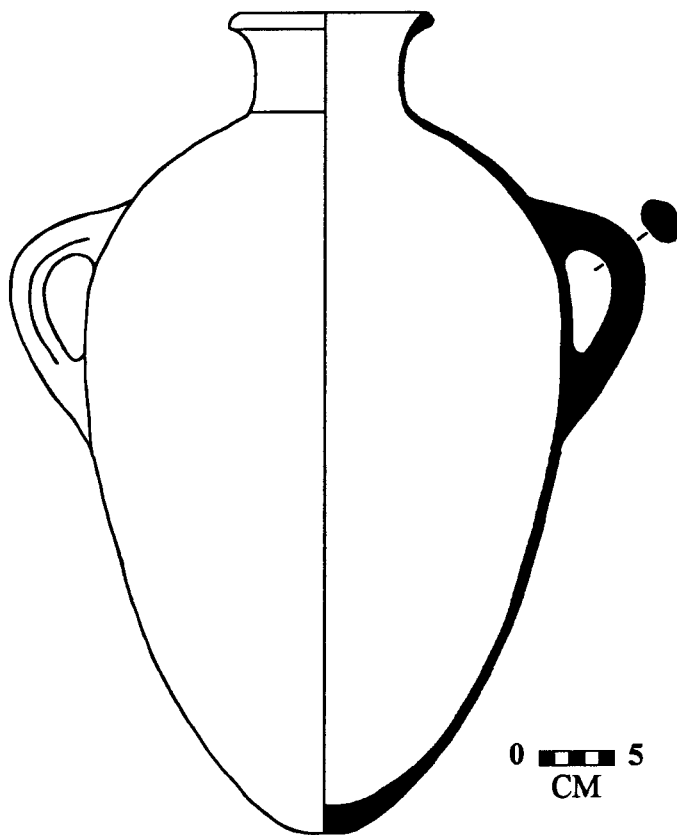
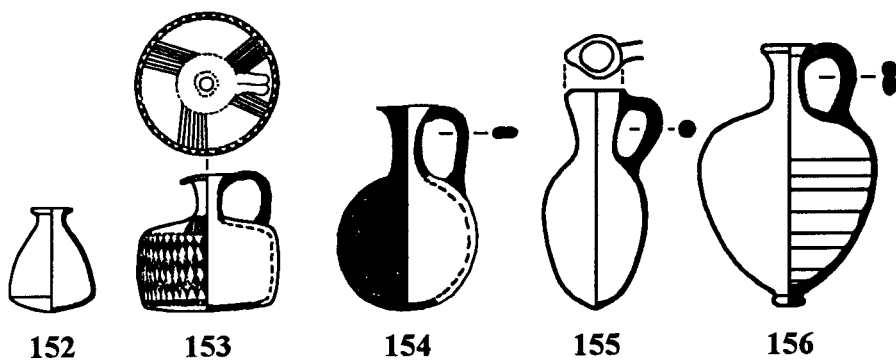
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151

Middle Bronze I-II pottery examples. Jars (nos. 147-151).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
152	Jug (alabastron)	Closed	—	very short	Technique: <i>Wares:</i> Gritty; <i>Inclusions:</i> Small grey; <i>Firing:</i> Dark grey with small yellow patches; <i>Surface Treatment:</i> <i>Burnishing:</i> Vertical on ext.	Amman	Najjar 1991:109 (fig. 5:14)
153	Jug (lagynos)	Closed	—	very short	Technique: <i>Wares:</i> Type: "Chocolate-on-white"; <i>Levigation:</i> Very fine clay with no visible grits; <i>Firing:</i> Hard, metallic grey at core and pale buff at edges; <i>Surface Treatment:</i> <i>Painting:</i> Purple-brown; <i>Slip:</i> White; <i>Comments:</i> <i>Vessel Parts:</i> Cylindrical wall profile	Tabaqat Fahl (Pella)	Potts <i>et al.</i> 1985: 207 (fig. 9:3)
154	Jug (juglet)	Closed	—	very short	Technique: <i>Wares:</i> Type: Cypriot Black Lustrous; <i>Levigation:</i> Very fine; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Dark grey	Tabaqat Fahl (Pella)	Potts <i>et al.</i> 1985: 207 (fig. 9:3)
155	Jug (dipper juglet)	Closed	—	very short	Technique: <i>Wares:</i> Color: 7.5YR7/4 (pink); <i>Inclusions:</i> Small white grits; <i>Firing:</i> Grey patches at rim and neck; <i>Surface Treatment:</i> <i>Slip:</i> 10YR8/2 (white) ext.; <i>Wet-smoothing</i>	Amman	Najjar 1991: 123 (fig. 13:3)
156	Jug (juglet)	Closed	—	short height	Technique: <i>Wares:</i> Color: 7.5YR7/4 (pink); <i>Inclusions:</i> Small and medium white grits; <i>Firing:</i> Surface: 7.5YR6/1 (light grey); <i>Surface Treatment:</i> <i>Burnishing:</i> Traces on ext.; <i>Comments:</i> <i>Vessel Parts:</i> Piniform wall profile	Amman	Najjar 1991: 123 (fig. 12:16)
157	Jar	Closed	—	tall	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 52:506



157

Middle Bronze I-II pottery examples. Jugs (nos. 152-156) and jar (no. 157).

The Late Bronze Age

Late Bronze Age pottery is rare in Transjordan. Much of that which has been recovered is from tombs and is therefore difficult to connect stratigraphically with tell sites. At the same time, while the Late Bronze Age pottery corpus comes mostly from burials, there were definite similarities between the few occupational sites and the burials (Brown 1991: 192). Because there was so little distinction between late-MB II period and early-LB I period pottery, the periods are commonly differentiated by the presence of imported ceramics such as Cypriot White Slip II "milk" ware, Base Ring I ware, Mycenaean ware, and Minoan ware (see table 9, above). Of the 336 Mycenaean pottery vessel shapes manufactured in the Aegean, about 70 were imported into Syro-Palestine. Of these, about 24 have been excavated in Transjordan (Leonard 1987: 262).

Some of the sites currently associated with the Late Bronze Age pottery culture in Transjordan include: Abu al-Kharaz, al-Qasir, Amman, Dayr 'Alla, Jarash, Katarat as-Samra, Khirbat Umm ad-Dananir, Quwayliba (Abila), Sahab, Tabaqat Fahl (Pella), Tall al-'Umayri, Tall as-Sa'idiyah, Tall Irbid, and Umm al-Qanafid, as well as small sites along the Wadi Ziqlab. This description is from Abu al-Kharaz (Fischer 1991), Katarat as-Samra (Leonard 1979), Tall as-Sa'idiyah (Pritchard 1980), Amman (Hankey 1974), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

The Late Bronze I-II Period

The LB I period corpus has been understood to reflect a degeneration of the Middle Bronze Age stylization and manufacturing techniques. There appears to be more distinction between the LB I A and I B period forms than between the LB I and II period forms (see Brown 1991: 193).

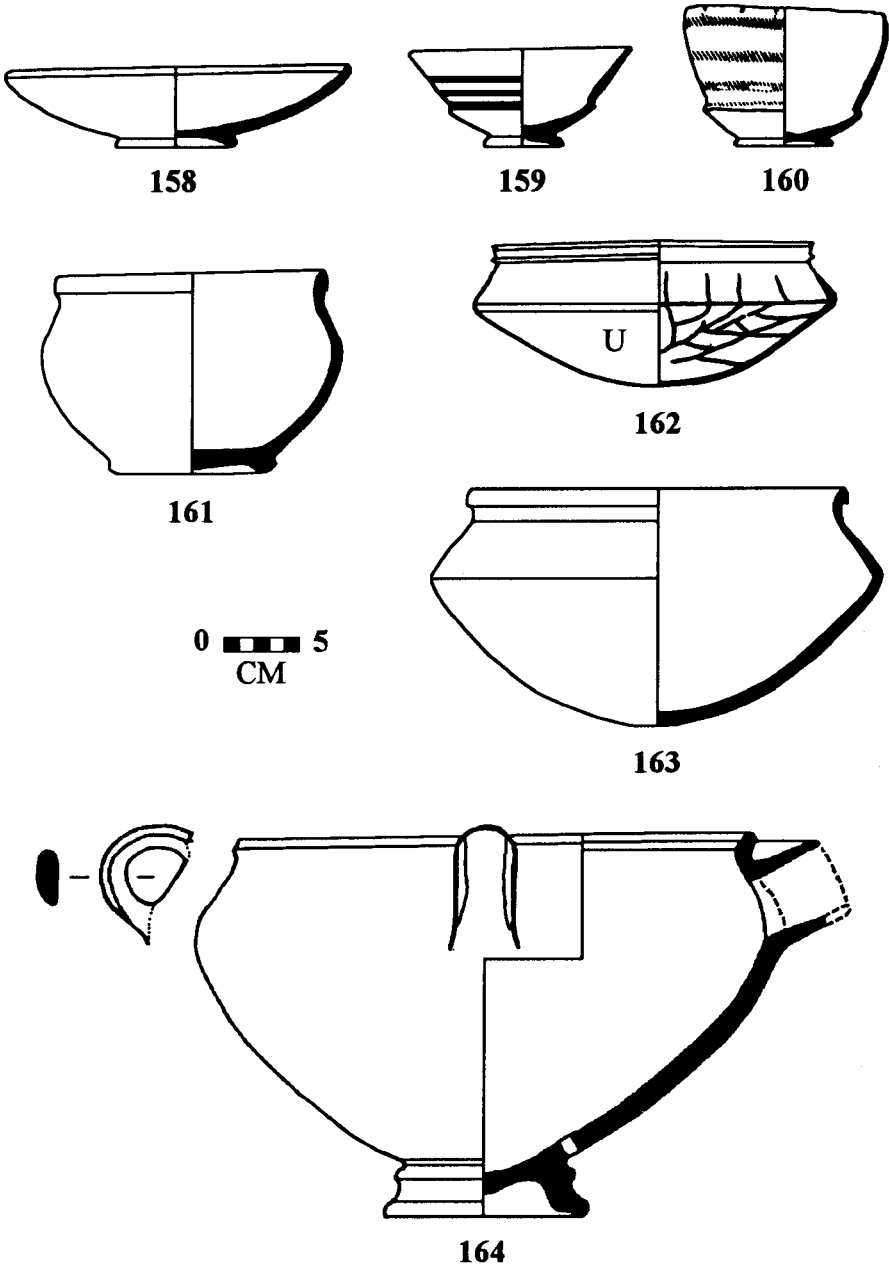
Technique. Ware: Late Bronze Age ware was similar to finer Middle Bronze Age wares. Midianite ware, more common elsewhere, was sparse in Transjordan with several vessels witnessed at Amman, but otherwise by only a few sherds at disparate sites. Midianite ware was produced in buff, cream, light red, pink, or red colors. The colors of other wares included light brown, red-brown, and tan. *Inclusions:* Inclusions were usually coarse grits, white, grey, or black. Temper included fine-grained minerals. Clays included more non-plastics toward the end of the period, some so large as to be visible on the surface. *Levigation:* Clays

were moderately-to-well levigated. Midianite ware was coarse-to-medium. The quality of levigation decreased toward the end of the period. **Manufacturing:** Vessels were wheelmade. Midianite ware was both handmade (coilmade) and wheelmade. **Firing:** Firing was usually hard-to-medium with grey, tan, or red-brown cores.

Surface treatment. Chocolate-on-white ware continued from the MB II period (on all root forms), otherwise, surface decoration was rare. **Slipping:** Slips included white-to-pink-to-red, cream-to-light brown, yellowish-white, yellowish-brown, yellowish-matte red, brownish-red, and self-same. Slip was sometimes applied inside and outside of the vessel. Slip became more uneven later in the period. Midianite wares had a thick slip in black, brown, red, or yellow. **Burnishing:** Burnishing was rare. **Painting:** Monochrome and bichrome painting were applied to various vessels. Typical painted colors included brown, red, matte purple-brown, and black. Patterns were geometric, wavy horizontal, or vertical lines. Midianite wares were painted in bichrome, bird, and/or geometrical motifs. Painting was no longer applied to some vessels toward the end of the period due to the large inclusions in the clay. **Impressing:** Impressing was extremely rare. **Incising:** Incising was also extremely rare.

Forms (pottery examples 158-189). **Bowls:** Bowl forms included chalices, cooking pots, cups, goblets, kraters, and other bowls. Mycenaean imported bowl forms included cups, rounded bowls, and amphoroid kraters. Bowls were either globular or carinated—the latter indicating direct Middle Bronze Age ancestry. Bowl lips included flattened, rounded, thickened, and thinned profiles. Bowl rim profiles included doubled, flattened, and thickened styles. Bowl rim inflections included angular, bi-angular, curved, and straight styles. Bowl wall profiles included biconical, carinated, and globular styles. Carinated bowls had less angular wall profiles than in the MB II period. Globular bowls were a typical LB I B-LB II period form. Krater rim inflections were curved (in the LB-Iron transition) or straight (rare). **Jars:** Jar forms included amphoriskoi, jars, pyxes, storage jars, and other jars. Mycenaean jar forms included pyxes, stirrup jars, and storage jars. Jar lip profiles included angular, rounded, or thickened styles. Jar rim profiles included doubled, flattened, and thickened styles. Jar rim inflections were generally curved or straight. Jar wall profiles were cylindrical or globular. Jar neck profiles were generally curved. The amphoriskos developed from the LB I period to the LB II period. The LB I form had a wider neck and mouth, and a less constricted transition between the shoulder and rim.

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
158	Bowl	Open	medium	intermediate	Technique: <i>Ware:</i> Color: greyish-buff; <i>Inclusions:</i> Medium coarse with grey and black grits; <i>Surface Treatment:</i> <i>Slip:</i> Yellowish-white on int./ext.	Tall Abu al-Kharaz	Fischer 1991: 89 (fig. 10:2)
159	Bowl	Open	small	intermediate	Technique: <i>Ware:</i> Color: beige; <i>Inclusions:</i> Medium fine with white, grey and black grits; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Painting:</i> Brown; <i>Slip:</i> Yellowish-light brown on int./ext.	Tall Abu al-Kharaz	Fischer 1991: 95 (fig. 13:2)
160	Bowl	Open	small	intermediate	—	Tall Dayr 'Alla	Franken 1992: 116 (fig. 7-1:11)
161	Bowl	Open	medium	intermediate	Technique: <i>Inclusions:</i> Many small black and white grits; <i>Firing:</i> Core red brown	Tall as-Sa'idiyah	Pritchard 1980: fig. 9:7
162	Bowl (cooking pot)	Open	—	intermediate	Comments: <i>Vessel Parts:</i> Flattened rim profile; <i>Vessel Dimensions:</i> Original publication unscaled	Tall Dayr 'Alla	Franken 1969:118 (fig. 26)
163	Bowl (cooking pot)	Open	large	intermediate	Technique: <i>Ware:</i> Color: ext./int. reddish-brown; <i>Inclusions:</i> White, medium; <i>Firing:</i> Medium-soft; core grey; <i>Surface Treatment:</i> <i>Slip:</i> Self-same	Tall Abu al-Kharaz	Fischer 1993: 291 (fig. 8:7)
164	Bowl (krater)	Open, spouted	medium	intermediate	Technique: <i>Ware:</i> Color: buff; <i>Inclusions:</i> Medium coarse with grey and brown; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Slip:</i> Self-same	Tall Abu al-Kharaz	Fischer 1993: 291 (fig. 8:9)



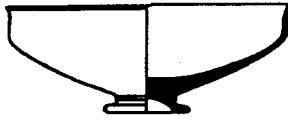
Late Bronze I-II pottery examples. Bowls (nos. 158-164).

150 ANCIENT POTTERY OF TRANSJORDAN

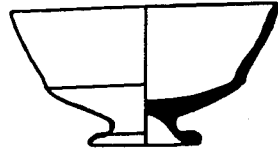
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
165	Bowl	Open, footed	medium	intermediate	<i>Technique:</i> <i>Wares:</i> Type: "Chocolate-on-white"; Color: light greyish-brown; <i>Inclusions:</i> Medium fine; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Burnishing;</i> <i>Painting:</i> Brown band; <i>Slip:</i> Yellow-white.	Tall Abu al-Kharaz	Fischer 1991: 87 (fig. 9:1)
166	Bowl	Open	medium	intermediate	<i>Technique:</i> <i>Inclusions:</i> Finely mixed clay with medium-tiny grits; <i>Firing:</i> Creamy-buff; <i>Surface Treatment:</i> <i>Burnishing:</i> High; <i>Slip:</i> Milk-white; <i>Comments:</i> <i>Vessel Parts:</i> Carinated wall profile; <i>Vessel Dimensions:</i> Max. ht. 7.5 cm; rim diam. 19.8 cm	Tabaqat Fahl (Pella)	Smith, McNicoll, and Hennessy 1981: 26 (fig. 24:11)
167	Bowl	Open	medium	intermediate	<i>Technique:</i> <i>Inclusions:</i> White and black grits; <i>Levigation:</i> Well; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Core 7.5YR8/6; <i>Surface Treatment:</i> <i>Slip:</i> Traces of 7.5YR8/2; <i>Comments:</i> <i>Vessel Parts:</i> Carinated wall profile	Katarat as-Sarura	Leonard 1979: 59 (fig. 8:5)
168	Bowl (chalice)	Open, footed	small	deep	<i>Technique:</i> <i>Wares:</i> Color: light brown; <i>Inclusions:</i> Medium fine with black grits; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Burnishing;</i> <i>Painting:</i> Reddish-brown and black; <i>Slip:</i> Self-same on int.; light brown on ext.	Tall Abu al-Kharaz	Fischer 1991: 89 (fig. 10:10)
169	Bowl (chalice)	Open, footed	medium	shallow	<i>Technique:</i> <i>Wares:</i> Color: buff; <i>Inclusions:</i> Coarse, grey; <i>Firing:</i> Medium-soft; core light grey; <i>Surface Treatment:</i> <i>Burnishing:</i> Bands; <i>Slip:</i> Light orange brown	Tall Abu al-Kharaz	Fischer 1993: 291 (fig. 8:2)
170	Bowl (chalice)	Open, footed	medium	very deep	<i>Technique:</i> <i>Inclusions:</i> Fine quartz sand; <i>Surface Treatment:</i> <i>Slip:</i> Cream-to-pinkish-on white	Tall Dayr 'Alla	Franken 1992: 124 (fig. 7-6:13)
171	Bowl (chalice)	Open, footed	medium	intermediate	<i>Technique:</i> <i>Wares:</i> Color: light brown; <i>Inclusions:</i> Medium fine with grey grits; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Painting:</i> Red and brown; <i>Slip:</i> Light yellowish-brown on int/ext.	Tall Abu al-Kharaz	Fischer 1991: 89 (fig. 10:9)
172	Bowl	Open	medium	intermediate	<i>Technique:</i> <i>Wares:</i> Color: yellowish-light brown; <i>Inclusions:</i> Medium coarse; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Burnishing;</i> <i>Painting:</i> Dark and reddish-brown; <i>Slip:</i> Yellowish-brown	Tall Abu al-Kharaz	Fischer 1991: 91 (fig. 11:1)
173	Bowl	Open, footed	large	intermediate	<i>Technique:</i> <i>Wares:</i> Type: "Chocolate-on-white"; Color: grey; <i>Inclusions:</i> Medium coarse with white, grey and black grits; <i>Firing:</i> Medium; <i>Surface Treatment:</i> <i>Burnishing;</i> <i>Slip:</i> White; <i>Painting:</i> Matte purple brown	Tall Abu al-Kharaz	Fischer 1991: 97 (fig. 14:4)



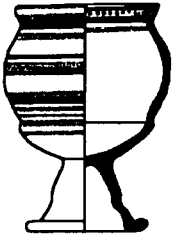
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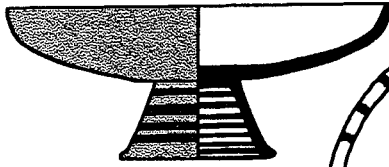
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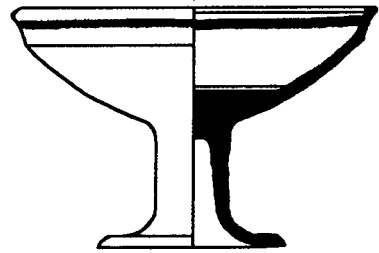
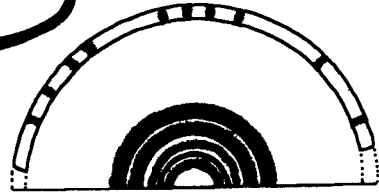
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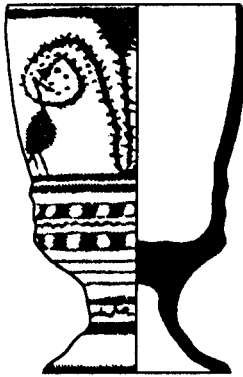
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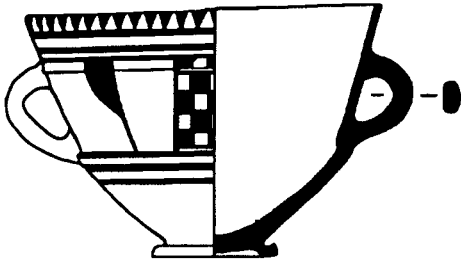
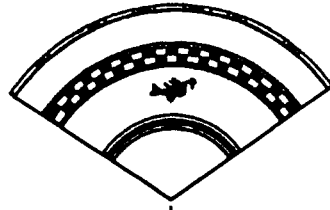
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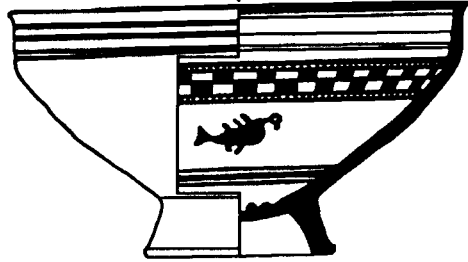
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Late Bronze I-II pottery examples. Bowls (nos. 165-173).

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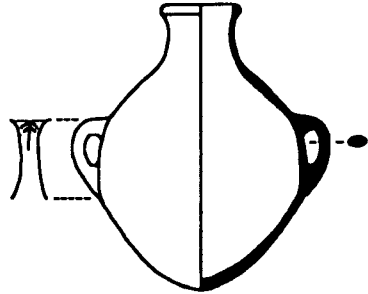
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
174	Jar	Closed	—	very short	<i>Technique: Ware:</i> Type: Mycenaean; Color: pink; <i>Surface Treatment: Painting:</i> Red bands below handles; <i>Slip:</i> Buff; <i>Comments: Vessel Parts:</i> Piniform wall profile; 3 loop handles; flat base	Amman	Hankey 1974: 146 (fig. 2:15)
175	Jar (pyxis)	Closed	—	very short	<i>Technique: Ware:</i> Type: "buff"; <i>Levigation:</i> Well; <i>Firing:</i> Core buff; <i>Surface Treatment: Burnishing; Painting:</i> Brown and red brown	Tall as-Sa'idiyah	Pritchard 1980: fig. 21:12
176	Jar	Closed	—	short	<i>Technique: Inclusions:</i> Fine-to-medium sized chert grits; <i>Firing:</i> Pale buff; <i>Surface Treatment: Painting:</i> Red brown bands; <i>Comments:</i> Ext. slightly blackened by fire	Tabaqat Fahl (Pella)	Potts <i>et al.</i> 1988: 138 (fig. 11:5)
177	Jar	Closed	—	short	<i>Technique: Ware:</i> Color: tan; <i>Inclusions:</i> Few large black grits; <i>Surface Treatment: Burnishing; Painting:</i> Red brown; <i>Comments: Vessel Parts:</i> Stirrup handles	Tall as-Sa'idiyah	Pritchard 1980: fig. 37:11
178	Jar	Closed	—	tall	<i>Surface Treatment: Painting:</i> Matte red paint in tree and bird motif	Tall Deyr 'Alla	Franken 1992: 82 (fig. 5-7:25)
179	Jar	Closed	—	tall	<i>Technique: Ware:</i> Type: Mycenaean; Color: int./ext. dark pink-to-buff; <i>Inclusions:</i> mica; <i>Firing:</i> Core grey; <i>Surface Treatment: Painting:</i> Light-to-dark brown worn to orange; <i>Slip:</i> Thick shiny buff; <i>Comments: Vessel Parts:</i> Disk base; conical wall profile; ridge at join of shoulder and neck; curving neck; flattened rim profile	Amman	Hankey 1974: 144 (fig. 1:1)



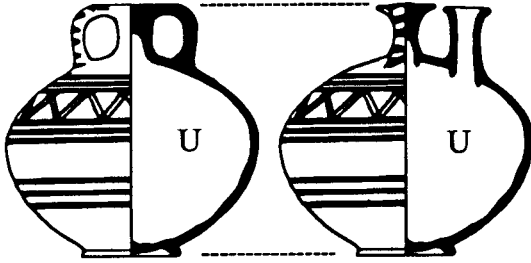
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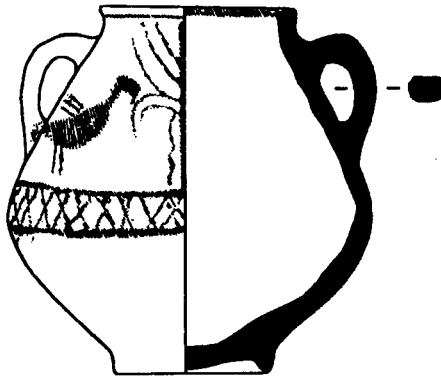
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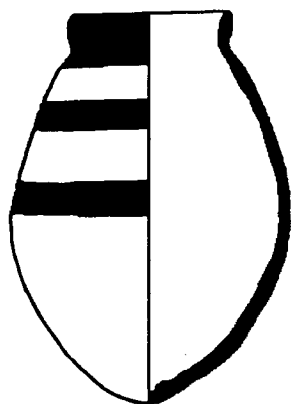


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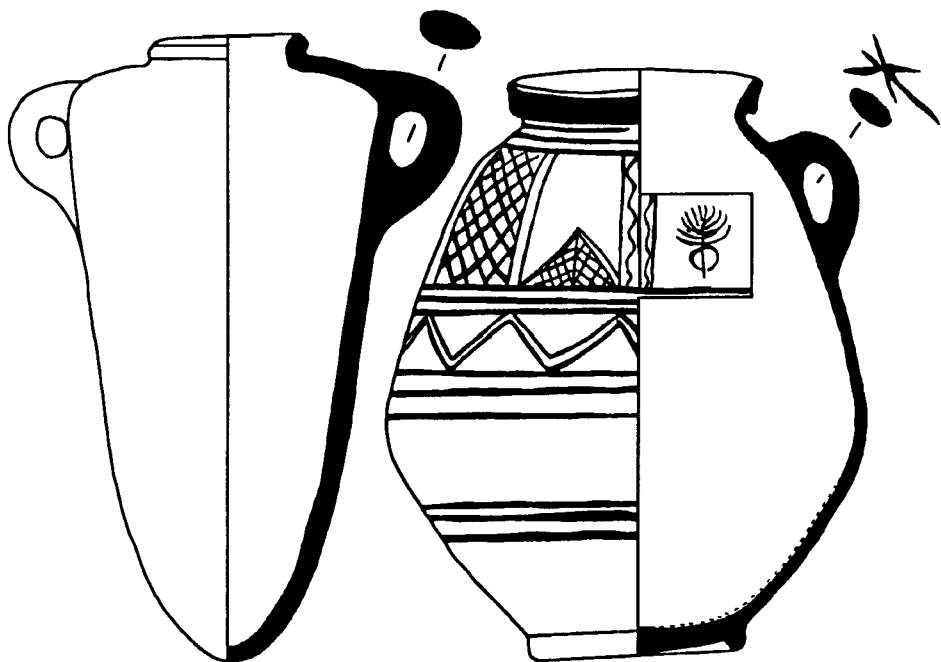
Late Bronze I-II pottery examples. Jars (nos. 174-179).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
180	Jar	Closed	—	short	Technique: <i>Inclusions:</i> Many mixed black and white grits; <i>Firing:</i> Core tan; <i>Surface Treatment:</i> <i>Painting:</i> Red brown on shoulder and rim	Tall as-Sa'idiyah	Pritchard 1980: fig. 9:9
181	Jar	Closed, storage	—	tall	Technique: <i>Ware:</i> Color: red brown	Tall as-Sa'idiyah	Pritchard 1980: fig. 3:1
182	Jar	Closed	—	tall	Technique: <i>Inclusions:</i> Many small white grits; <i>Firing:</i> Core red brown; <i>Surface Treatment:</i> <i>Painting:</i> Red brown design	Tall as-Sa'idiyah	Pritchard 1980: fig. 11:2



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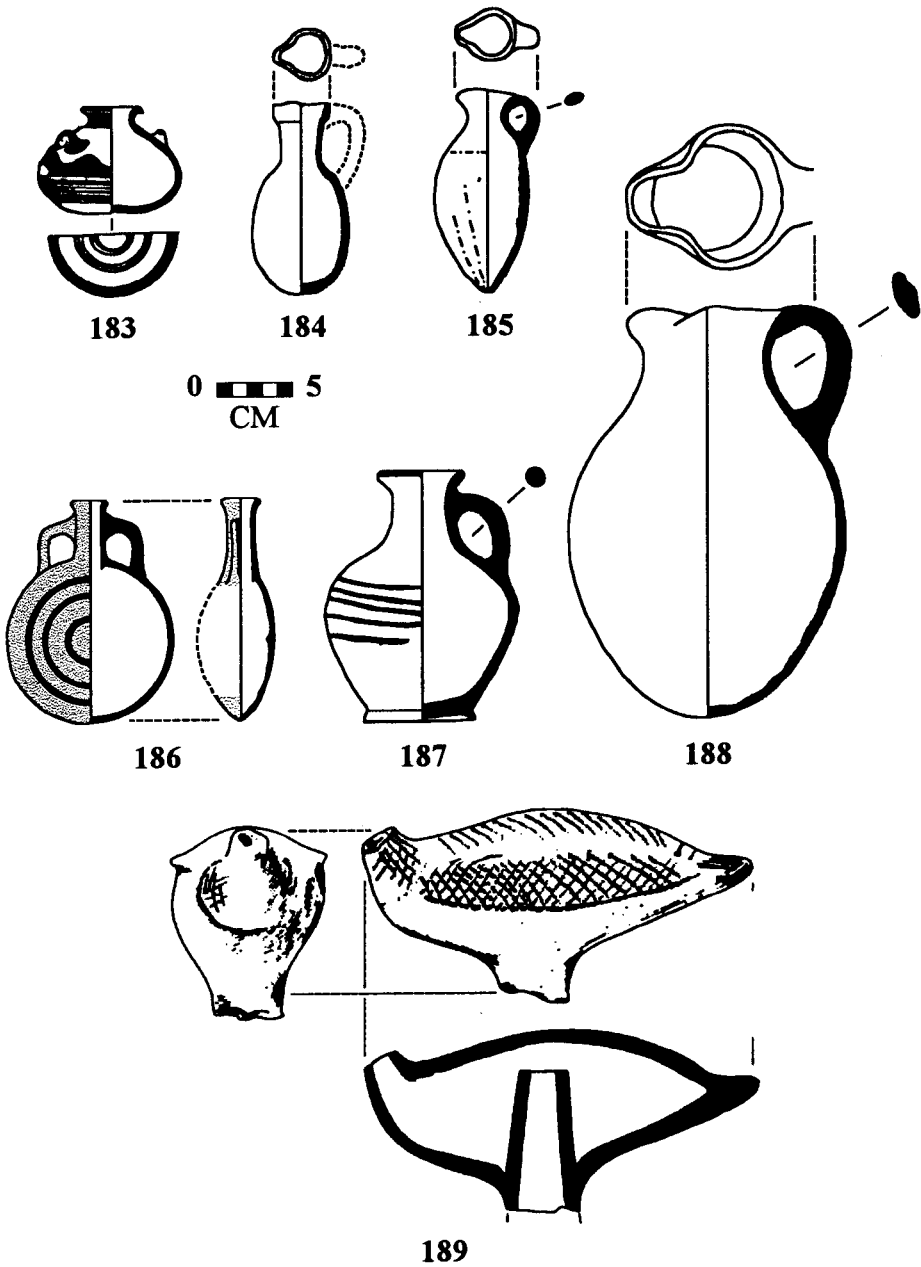


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Late Bronze I-II pottery examples. Jars (nos. 180-182).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
183	Jug (alabastron)	Closed	—	very short	Technique: <i>Ware:</i> Type: Mycenaean; <i>Color:</i> grey-to-buff; Surface Treatment: <i>Painting:</i> Brown-to-black; <i>Slip:</i> Light; Comments: <i>Vessel Parts:</i> Globular wall profile; 3 loop handles	Amman	Hankey 1974: 149 (fig. 5:28)
184	Jug (juglet)	Closed	—	very short	Technique: <i>Ware:</i> <i>Color:</i> light brown; <i>Inclusions:</i> Medium coarse with dark grey grits; <i>Firing:</i> Medium; Surface Treatment: <i>Slip:</i> Self-same on int/ext.	Tall Abu al-Kharaz	Fischer 1991: 93 (fig. 12:1)
185	Jug (juglet)	Closed	—	very short	Technique: <i>Inclusions:</i> Many small chert grits; <i>Firing:</i> Grey-buff	Tabaqat Fahl (Pella)	Potts <i>et al.</i> 1988: 138 (fig. 11:4)
186	Jug (flask)	Closed	—	very short	Technique: <i>Ware:</i> <i>Color:</i> ext./int. tan; <i>Levigation:</i> Well; <i>Firing:</i> Core brown; Surface Treatment: <i>Slip:</i> Red brown	Tall as-Sa'idiyah	Pritchard 1980: fig. 39:6
187	Jug	Closed	—	short	Technique: <i>Inclusions:</i> Many mixed black grits; <i>Firing:</i> Core tan; Surface Treatment: <i>Painting:</i> Brown rings	Tall as-Sa'idiyah	Pritchard 1980: fig. 14:3
188	Jug	Closed	—	short	Technique: <i>Inclusions:</i> Many mixed black and white grits; <i>Firing:</i> Core tan; Surface Treatment: <i>Slip:</i> Red brown	Tall as-Sa'idiyah	Pritchard 1980: fig. 38:1
189	Bird vessel	—	—	—	Surface Treatment: <i>Inclining:</i> On tail; <i>Painting:</i> Reddish-brown indicating wings	Tall Dayr 'Alla	Franken 1992: 41 (fig. 4-4:21)



Late Bronze I-II pottery examples. Jugs (nos. 183-188) and bird vessel (no. 189).

Two-handed jars with bichrome ware were typically ovoid. Beginning in the LB II period, some storage jars had a very distinctive neck decoration which archaeologists have called a "collar" or "collared" rim. (Although a misnomer—the decoration occurs at the junction of the neck and body of the vessel rather than on the rim *per se*—the terminology is so well-known that no attempt is made here to revise it.) The characteristic collared-rim style continued into the Iron I period, developed somewhat, and then continued on into the Iron II period. (These latter two periods provide the better examples). **Jugs:** Jug forms included alabastrons, dipper juglets, flasks, juglets, pilgrim flasks, and other jugs. Mycenaean imported jug forms included alabastrons, as well as both globular and lentoid flasks. Jug lip profiles were generally rounded or thickened. Jug rim profiles included doubled, pinched, simple, and thickened styles. Jug rim inflections were generally angular or curved. Jug wall profiles were globular. Jug neck profiles were generally curving or cylindrical. Bilbils (Base Ring Ware II) were made, but seem rare. Flasks were lentoid (lens-shaped), often decorated by a circle or concentric circles, and sometimes had one or two handles. Dipper juglets continued the same form as in the MB I-II period, but were progressively shortened to the point that a "dumpy" form became standard in the LB II period. **Miscellaneous vessels:** Miscellaneous forms included bird-shaped vessels, lamps, and stands. Lamps had a single pinched spout. **Vessel parts:** Bases included disk bases (also concave disk), flat bases, low and high ring bases, string-cut bases, and trumpet bases. Disk and flat bases were common during the LB II period. Ring bases declined in use toward the end of the LB II period. Pedestal bases, used greatly in the MB II period, also declined during the LB I-II period. Handles included the vertical loop style. Ovoid loop, horizontally-painted handles were common on closed forms (jars and jugs) and on kraters. Small loop handles on kraters which arch from the rim to the body were utilized in the Late Bronze Age and continued into the LB-Iron transition period.

The Iron Age

Sites associated with the Iron Age pottery culture in Transjordan include: ad-Dayr (Ma'in), al-Balu', Alayyan (Aleiyān), Amman, Amman Citadel (al-Qal'a), Amman Roman Forum, 'Ara'ir ('Aro'er), as-Sadah, Baq'ah, Ba'ja, Busayrah, Dayr 'Alla, Dhiban (Dibon), Fayfah (Feifeh), Ghrarah, 'Iraq al-Amir, Jarash, Karak, Khirbat al-Hajjar, Khirbat al-Maghaytah, Khirbat al-Mukhayyat, Khirbat Dor, Khirbat Ishra, Khirbat

Muallaq, Khirbat Umm al-Hadamus, Lahun, Madaba, Madaynah al-Muarrajah, Mafraq, Maqabalayn (Maqabelein), Mount Nebo, Petra (Sela'), Quwayliba (Abila), Ras an-Naqb, Rujm al-Hanu, Sahab, Tabaqat Fahl (Pella), Tall Abu al-Kharaz, Tall al-Fuhhar, Tall al-Mazar, Tall al-'Umayri, Tall as-Sa'idiyah, Tall Hisban, Tall Iktanu, Tall Irbid, Tall Jawa (South), Tall Nimrin, Tall Siran, Talul adh-Dhahab, Tawilan, Udhruh, Umm al-Biyara, Umm ar-Rasas, and Umm Qays, as well as small sites along the Wadi al-Badan, Wadi al-Yabis, Wadi al-Yabis (Maqbarah), and Wadi Ziqlab.

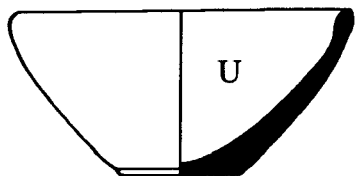
The Iron I Period

This description is from Tabaqat Fahl (Hennessy *et al.* 1981: 267-309; Hennessy *et al.* 1983: 325-361), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

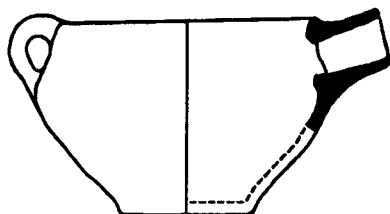
Technique. Ware: Ware colors included pink, orange, light red, brown, and black. Wares were generally coarse and were either left plain or decorated with surface slip. Imported Philistine ware was apparently very rare. **Inclusions:** Clay was well-levigated with a large proportion of small-to-large mineral grits (including calcite). Organic temper was sometimes added. The surfaces of Iron I pottery were more pitted than during earlier periods. **Manufacture:** The technical quality of Iron Age pottery declined through the period due to the use of tournettes rather than weighted potter's wheels. Hand-finishing processes resulted in uneven clay surfaces. **Firing:** Clay was fired to creamy or brownish-buff. Firing was sometimes thorough, but was variously poor which resulted in thick grey-black cores.

Surface treatment. Slipping: Colors included white (which was common), buff, brown, red, and self-slip. **Burnishing:** Burnishing was relatively rare, although wheel burnishing was more frequent during the Iron II period than in the Iron I C period. **Painting:** Thin matte reddish-brown paint was the most prominent paint color. Iron I B Philistine painted decoration was almost entirely absent from Transjordan. One example is published from Dayr 'Alla (Franken 1989: fig. 47.4). **Appliqué, Impressing, and Incising** were done minimally during the Iron I period. Finger impressions decorated storage jar handles throughout the Iron I period and into the Iron II period.

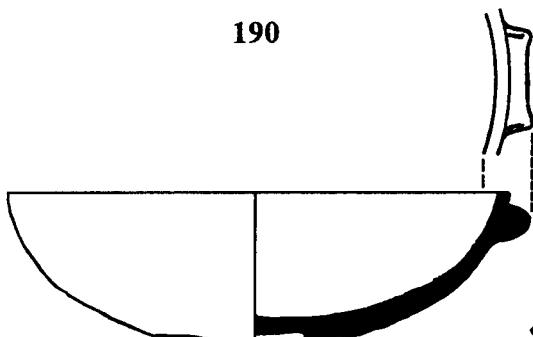
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
190	Bowl (cooking pot)	Open	---	intermediate	Technique: <i>Inclusions:</i> Medium and tiny grits; <i>Levigation:</i> Well; <i>Firing:</i> Brownish-buff throughout; Surface Treatment: <i>Painting:</i> Thin matte reddish-brown over rim; <i>Slip:</i> Self-slip; Comments: <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	Hennessey <i>et al.</i> 1983: 344 (fig. 12.4)
191	Bowl	Open, spouted	large	intermediate	Technique: <i>Ware:</i> Color: buff; Surface Treatment: <i>Slip:</i> Cream	Madaba	Harding and Isserline 1953: 43 (fig. 13.49)
192	Bowl	Open	large	intermediate	Technique: <i>Ware:</i> Color: buff; <i>Firing:</i> Core black; Surface Treatment: <i>Slip:</i> Buff; Comments: <i>Vessel Parts:</i> Ledge handle	Madaba	Harding and Isserline 1953: 43 (fig. 13.45)
193	Bowl	Open	large	intermediate	---	Tall as-Sa'idiyah	Tubb 1988: 42 (fig. 19.4)
194	Bowl (chalice)	Open, footed	---	intermediate	Technique: <i>Levigation:</i> Fine; <i>Inclusions:</i> Some medium and many tiny grits; <i>Firing:</i> Buff with thin brownish-buff faces; Surface Treatment: <i>Painting:</i> Thin matte brown; <i>Slip:</i> Self-same; Comments: <i>Vessel Parts:</i> Carinated wall profile; <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	Hennessey <i>et al.</i> 1983: 346 (fig. 13.3)
195	Bowl (krater)	Open	large	intermediate	---	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessey 1982a: 353 (fig. 7.2)



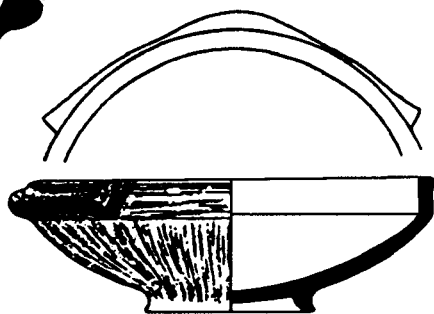
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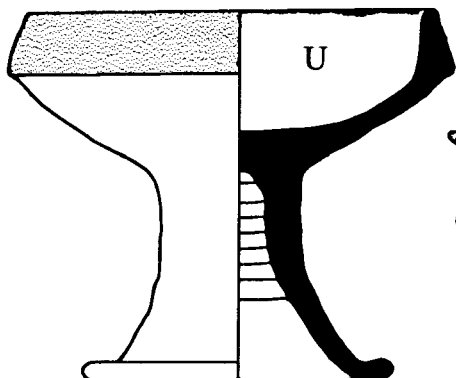


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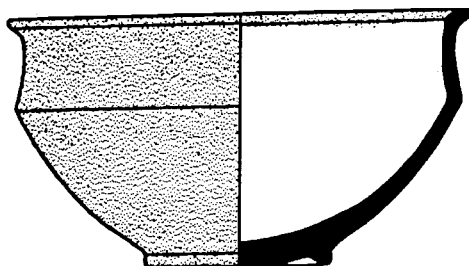


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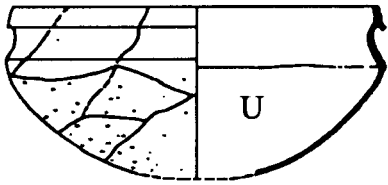
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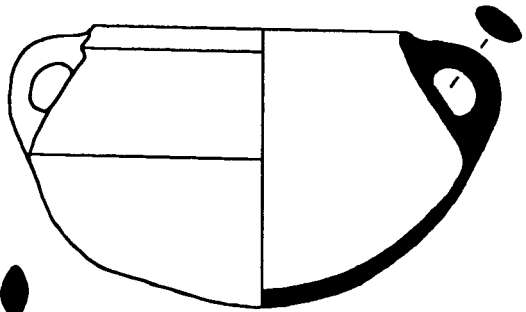
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Iron I pottery examples. Bowls (nos. 190-195).

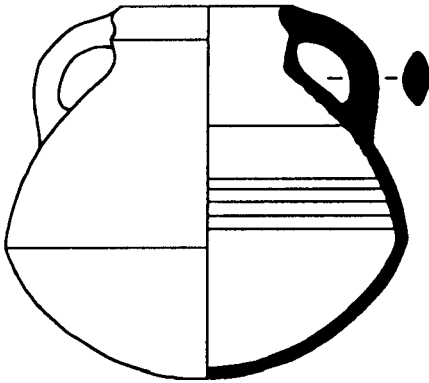
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
196	Bowl (cooking pot)	Open	—	intermediate	<i>Comments: Vessel Dimensions:</i> Original publication unscaled	Tall Dayr 'Alla	Franken 1969: 120 (fig. 27)
197	Bowl (cooking pot)	Open	large	intermediate	—	Tall as-Sa'idiyah	Tubb 1988: 43 (fig. 20:3)
198	Jar (cooking pot)	Closed	—	tall	—	Tall as-Sa'idiyah	Tubb 1988: 42 (fig. 19:9)
199	Bowl (krater)	Open	—	deep	<i>Technique: Inclusions:</i> Very coarse gritty; <i>Firing:</i> Brown; <i>Surface Treatment: Incising:</i> On handles; <i>Slip:</i> Self-same on ext.; <i>Comments: Vessel Parts:</i> Disk base; outward swelling on lower wall with angle to upright upper wall; 2 applied loop handles projecting above lip at curve of loop; possible Assyrian connections; <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	Hennessy <i>et al.</i> 1983: 347 (fig. 14:5)



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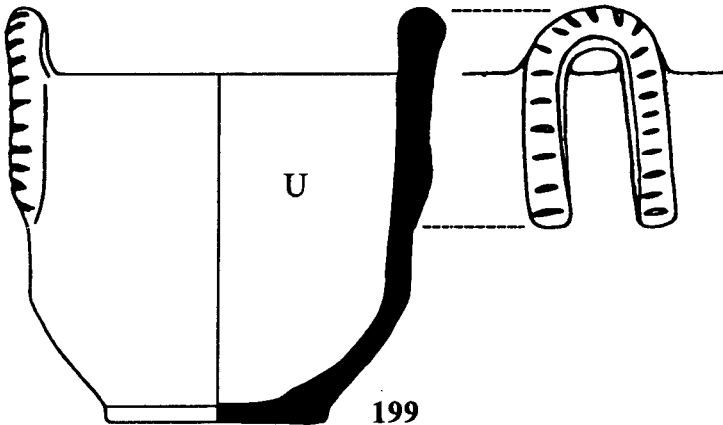


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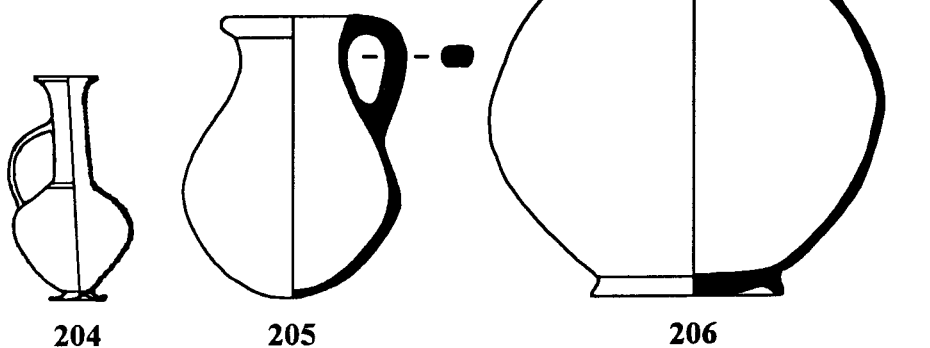
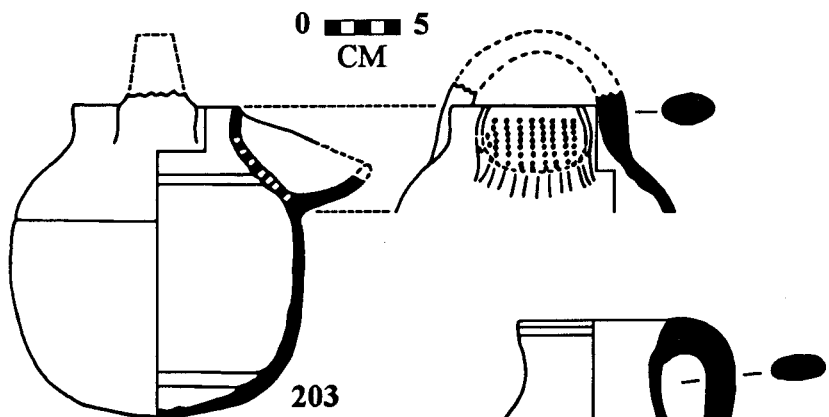
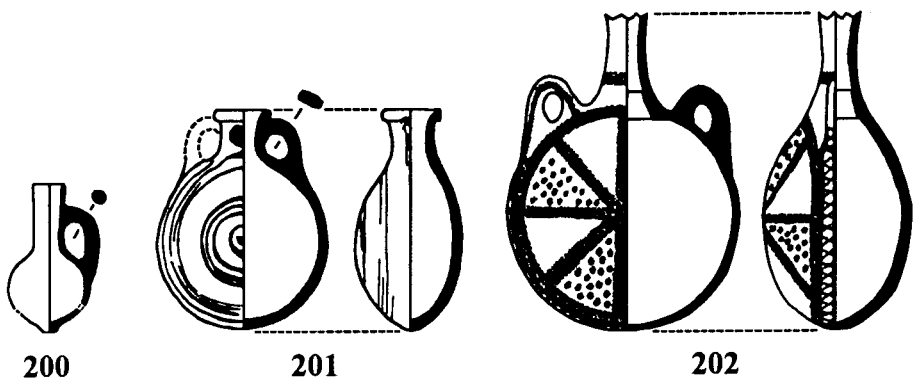
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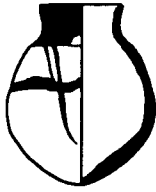
Iron I pottery examples. Bowls (nos. 196, 197, and 199) and jar (no. 198).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
200	Jug	Closed	—	very short	<i>Technique: Ware:</i> Color: black; <i>Inclusions:</i> Many mixed white grits; <i>Surface Treatment:</i> <i>Burnishing:</i> Fine, vertical	Tall as-Sa'idiyah	Pritchard 1980: fig. 17:1
201	Jug (flask)	Closed	—	very short	<i>Technique: Ware:</i> Color: tan; <i>Inclusions:</i> Many mixed black grits; <i>Surface Treatment:</i> <i>Burnishing:</i> Hand burnished; <i>Painting:</i> Brown rings	Tall as-Sa'idiyah	Pritchard 1980: fig. 18:2
202	Jug (flask)	Closed	—	very short	<i>Technique: Ware:</i> Color: ext. 7.5YR7/4 (pink); int. 7.5YRN6/ (grey); <i>Manufacture:</i> Wheelmade; <i>Surface Treatment: Painting:</i> 2.5YR5/4 (reddish-brown) and 2.5YR4/2 (weak red)	Tall al-'Umayri	Clark 1997: 85 (fig. 4.28:2)
203	Jug	Closed	—	short	<i>Technique: Ware:</i> Color: ext. 2.5YR6/6 (light red); int. 5YR6/4 (light reddish-brown); <i>Firing:</i> Core 2.5YRN4/ (dark grey)	Tall al-'Umayri	Clark 1997: 85 (fig. 4.28:3)
204	Jug	Closed	—	very short	—	Tall Irbid	Dajani 1964: pl. XXXCVIII:8
205	Jug	Closed	—	short	<i>Technique: Inclusions:</i> Coarse, sandy, gritty clay; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Dark grey with inner brown face; <i>Surface Treatment: Slip:</i> Thin, matte, orange brown, burnt	Tabaqat Fahl (Fella)	Hennessy <i>et al.</i> 1981: 290 (fig. 14:1)
206	Jug	Closed	—	tall	<i>Technique: Ware:</i> Color: ext/int. 2.5YR6/6 (light red); <i>Firing:</i> Core 10R6/1 (reddish-grey); <i>Surface Treatment: Slip:</i> Medium ext. of rim and base, color: 2.5YR8/2 (white)	Tall al-'Umayri	Lawlor 1991: 18 (fig. 3.4:8)

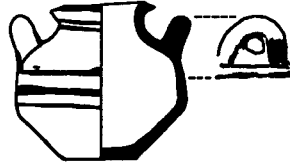


Iron I pottery examples. Jugs (nos. 200-206).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
207	Jar	Closed	—	very short	<i>Technique: Ware: Color: tan; Inclusions: Many mixed black grits; Surface Treatment: Incising: Ring in painted bands; Painting: Brown bands</i>	Tall as-Sa'idiyah	Pritchard 1980: fig. 18:1
208	Jar (pyxis)	Closed	—	very short	<i>Technique: Inclusions: Many mixed black and white grits; Firing: Core tan; Surface Treatment: Burnishing, Painting: Brown rings</i>	Tall as-Sa'idiyah	Pritchard 1980: fig. 18:3
209	Jar	Closed	—	tall	—	Tall as-Sa'idiyah	Tubb 1988: 42 (fig. 19:14)

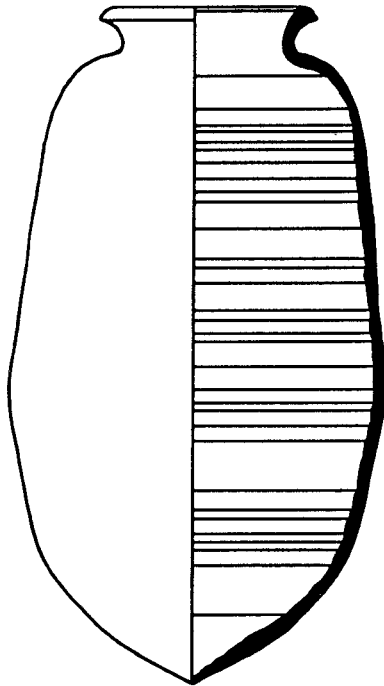


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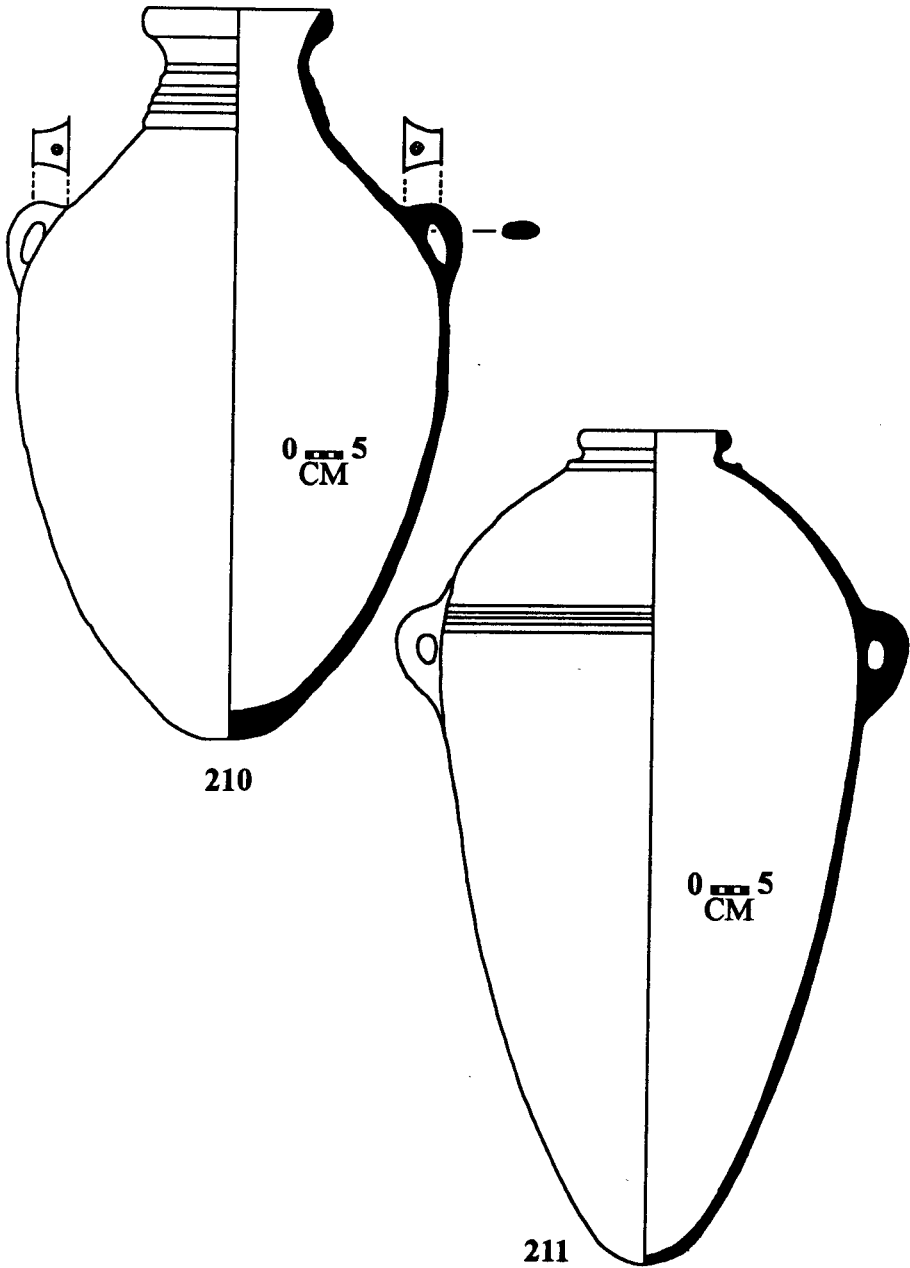


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Iron I pottery examples. Jars (nos. 207-209).

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No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
210	Jar	Closed	—	very tall	<i>Technique: Ware: Color: ext. 7.5YR7/6 (reddish-yellow); int. 7.5YRN4/ (dark grey)</i>	Tall al-'Umayri	Clark 1997: 69 (fig. 4.18:1)
211	Jar	Closed	—	very tall	<i>Technique: Ware: Color: reddish-to-dark brown; Inclusions: White and dark small-to-large grits; Manufacture: Coil; Firing: Grey or black; Surface Treatment: Slip: White or green; Comments: Vessel Parts: Collared-rim, folded thickened rim</i>	Sahab	Ibrahim 1978: 116 (fig. 1)



Iron I pottery examples. Jars (nos. 210 and 211, both scaled at 10%).

Forms (pottery examples 190-211). The Iron I period in Transjordan was characterized by several identifiable traits. Kraters and jars were thick and heavy due to their manufacture on a tournette and to the large amount of mineral temper in their clays. The period corpus was dominated by plain, utilitarian forms such as bowls, kraters, and storage jars (in varying sizes). Platters were thick with thinned lip profiles and straight (vertical) rim inflections. Lamps and chalices were common Iron I period forms. **Bowls:** Bowl forms included bowls, chalices, cooking pots, cups, kraters, platters, and spouted bowls. Bowl lip profiles were flattened, rounded, squared, or thickened. Bowl rim inflections included angular, curved, and straight styles. Bowl wall profiles were generally globular. Cooking pots were characterized by straight (sloping) rims. Iron I A kraters had rounded lip profiles, and thickened, straight (sloping) rim profiles. In general, Iron I krater lip/rim profiles were rounded and thickened, often with vertical notches and exterior profiling, and sometimes doubled (pendant). A "canal" formed by an off-set rim profile and out-curved rim inflection was characteristic of Iron I "deep" bowl (Brown 1991: 195). **Jars:** Jar forms included cooking pots, pyxes, storage jars, and other jars. Jar lip profiles were generally rounded. Jar rim profiles included doubled (pendant) and thickened styles. Jar rim inflections were generally straight (sloping)-to-curved (outcurving). Collared-rim storage jars were first manufactured in Transjordan during the Iron I period and continued to be manufactured into the Iron II period. The stylization of collared-rim profiles was extremely variable. The elongated, globular, storage jar was made throughout the Iron I period. **Jugs:** Jug forms included bilbils, decanters, flasks (including pilgrim flasks), juglets, spouted jugs, and other jugs. Bilbils, made of Base Ring II ware, were rare in Transjordan. **Miscellaneous vessels:** Miscellaneous forms included incense burners, lamps, and lids. **Vessel parts:** Bases included flat and ring styles which were used interchangeably on all vessel forms. Handles included bar, loop, and lug styles. Bar handles appeared on bowls. Lug handles were short and triangular, and attached vertically to the body or rim. Loop and lug handles sometimes featured finger impressions in the Iron I and II periods (usually on storage jars).

The Iron II-III Period

The latter part of the Iron Age is separated into the Iron II and Iron III periods. The Iron II period incorporates several important cultures in Transjordan (Ammonite, Moabite, and Edomite), while the Iron III material

culture sometimes reflects Persian influences. The Iron III period is therefore sometimes referred to as the "Persian" period and often referenced as "Iron II/Persian." There is some scholarly debate whether, and to what extent, these Iron II and Iron III political cultures can be separated in the ceramic corpus, so the following characterization combines the periods. There is first a "generic" description of the period (with pottery examples), and then separate descriptions of each of the important cultures.

Iron II period political cultures (Ammonite, Moabite, and Edomite) are associated with general geographic areas, but their associated material cultures (including pottery) were not so limited. Pottery exhibiting characteristics which are thought by some archaeologists to reflect only specific cultures have been found throughout Transjordan—outside of their traditional geographic boundaries. Since cultural delineation in the ceramic corpus is likely to clarify as excavation and publication continues, geopolitical divisions remain important. Ammonite political territory was essentially within the curve of the Wadi Zarqa (with its tributaries) and southward onto the Northern Central Plateau. Moabite country basically straddled the Wadi Mujib and continued southward to the Wadi Hasa. Edomite country was generally south of the Wadi Hasa. The influence of Persian culture during Iron III was throughout Transjordan, probably more in the north and to a lesser extent toward the south. (Note that "Iron III" is the name of a period, while "Persian" refers to a culture.)

The following description is from Um al-Hadamus (Palumbo 1992: 25-37), Tall al-'Umayri (Herr 1996: 244-246), Tabaqat Fahl (Edwards *et al.* 1990: 57-93), 'Ayn Gav (Mazar *et al.* 1964: 1-49), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

Technique. Wares: Ware colors were buff-to-pink, red-to-brown, reddish-yellow, yellowish-brown, and, less commonly, orange, grey, or black. Iron II wares were quite similar, if not identical, to Iron III. Black ware (sometimes burnished) was indicative of the Iron III period. Imported Attic ware was uncommon during the Iron III period. *Inclusions:* Limestone granular inclusions or chert were evidenced. The size and quantity of mineral inclusions varied greatly. Medium and small mineral grits were used for temper in Iron III (as in Iron II) as was organic material. *Levigation:* Clay was moderately-to-well levigated. Paste preparation was variable. Surface spalling is evidenced in Iron III. *Manufacture:* Manufacturing techniques in the Iron II period continued from those of the Iron I,

yet the use of a weighted potter's wheel resulted in a general improvement in vessel quality. Some handmade techniques continued to be used. **Firing:** Firing was extremely variable from excellent-to-very poor. Some ceramics were well fired; others exhibited grey-to-black cores.

Surface treatment. Decoration showed a measurable increase from the Iron I period with the greater use of burnishing, painting, and plastic decoration. Assyrian ceramics and Assyrian influenced ceramic forms and decorations were transported to Transjordan (Brown 1991: 203). **Slip:** Vessels were sometimes slipped, or slipped and burnished. Slip colors included black, cream, light red (or pink), red, reddish-yellow, tan (beige or buff), and white. Slip was sometimes applied to the entire vessel (both exterior and interior), and sometimes to the whole interior and only the upper part of the exterior. A burnished, white slip can be distinguished from a similar Iron I slip by the black, painted bands on the Iron II examples. Wet-smoothing was evidenced during the period. **Burnishing:** Burnishing was by hand, wheel, and a combination of hand/wheel. It was sometimes combined with slip. Burnishing patterns included horizontal, spiral, and vertical. **Glazing:** There was some greenish-blue glazing used (Najjar 1996, personal communication). **Painting:** Bichrome ornamentation and banded treatments were painted. Jars were decorated with horizontal or zig-zag bands between parallel lines. Paint designs included parallel black lines or bands on red or on cream ware; bichrome bands of either black and white or of black and red; a crow-step design in black; a cross design in white, framed in black; black dots on red with a crow-step design; and black strokes on a white band (perpendicular to the black rings on bowl rims.)

Appliqué: Plastic decorations included thickly molded vertical knobs (sometimes giving the appearance of a wavy band) attached to the rim. Decorative "rivets" (individual conical knobs) were sometimes applied below the rim. **Impressing:** Impressing was rare in the Iron II period, but included finger impressions on storage jar handles. Stamped designs included floral and faunal motifs. In the Iron III period, denticulation (triangular or chevron stamping) decorated some jar rims. Deeply stamped triangular impressions on the rim and inside bowls (typical of the Iron III period elsewhere) was not very common in Transjordan. **Incising:** Shallow lines were incised on some pieces. In the Iron III period, lightly grooved wavy line decoration was evidenced. Both shallow and deep ribbing were used as decorations, but were uncommon. **Ridging:** Ridging was frequent during the Iron II period.

Forms (pottery examples 212-274). **Bowls:** Bowl forms included basins, carinated bowls, chalices, cooking pots, fishplates, hole-mouth bowls, kraters, mortaria, necked bowls, plates, tripod bowls, V-shaped bowls, vases, and other bowls. Bowl lip profiles included flattened, rounded, squared, thickened, and thinned. Bowl rim profiles included doubled, flattened, offset, and thickened. Bowl rim inflections included angular, bi-angular, curved, and straight styles. Wall profiles included biconical, carinated, conical, cylindrical, and globular. Bowls were sometimes irregularly burnished having either thin or slightly thickened rims and thicker carinated sides. Other bowls were sometimes characterized by thin walls, lightly slipped levigated clay, and were burnished inside and out. Some bowls with globular wall profiles (rounded bowls) had flattened rim profiles (with or without ridging which gave it a "stepped" appearance), vertical rim inflections, and rounded lips—a possible precursor of a similar Nabataean bowl form (Najjar 1996, personal communication). Chalices were sometimes decorated with bands of black paint. Cooking pots were sometimes carinated, squat and globular with thickened rim profiles. They were generally without handles, but sometimes had two handles. They were often made of coarse ware. Fishplates, more indicative of the Hellenistic period, may have first appeared during the Iron III period. Kraters were sometimes decorated with vertical knobs or grooved lines, and stamped relief designs. Iron III mortaria had thickened rim profiles with outward rim inflections. Plates were shallow with disk or ring bases. Larger plates sometimes had incised, straight-to-pendant rims. The V-shape bowl was usually decorated with a crow-step design and may have been the precursor of a later Nabataean form (Najjar 1996, personal communication). Two-handled, globular bowls were sometimes called "vases." **Jars:** Jar forms included amphora, amphoriskoi, Assyrian bottles, beer strainers, bottles, holemouth jars, jars, rhytons, and storage jars. Jar rim profiles included flattened and thickened. Jar rim inflections included angular, bi-angular, curved, and straight styles. Jar neck profiles included conical, curving, and cylindrical styles. Amphoriskoi had cylindrical necks and round mouths. They were decorated with lines or line-groups in black paint. Their handles connected from a ridge at the shoulder to the middle of the neck. Assyrian bottles had pointed bases and were often decorated with lines of black paint. Iron II holemouth jars were cylindrical without handles and had a rounded base. Handleless jars with pointed bases were sometimes decorated with parallel, incised, or painted bands. Smaller jars had two handles and a pointed or stump base.

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
212	Bowl	Open	very small	intermediate	<i>Technique: Ware: Color: ext./int. 7.5YR2/40 (black); Manufacture: Wheelmade; Firing: Core 10R5/1 (reddish-grey); Surface Treatment: Burnishing: Wheel burnish</i>	Tall al-'Umayri	Lawlor 1991: 45 (fig. 3.26:9)
213	Bowl	Open	very small	intermediate	<i>Technique: Ware: Color: ext./int. 2.5YR6/6 (light red); Manufacture: Wheelmade; Firing: Core 2.5YR N6/ (grey)</i>	Tall al-'Umayri	Low 1991: 219 (fig. 8.22:18)
214	Bowl (plate)	Open	small	shallow	<i>Technique: Ware: Color: ext./int. (7.5YR7/4, pink); Manufacture: Wheelmade; Firing: Core 5YR7/1 (light grey); Surface Treatment: Burnishing: Medium wheel burnishing on int.; Slip: Heavy int.</i>	Tall al-'Umayri	Low 1991: 219 (fig. 8.22:1)
215	Bowl (plate)	Open	medium	shallow	<i>Technique: Inclusions: Many mixed white grits; Firing: Core tan; Surface Treatment: Slip: Traces of red brown</i>	Tall as-Sa'idiyah	Pritchard 1985: fig. 10:23
216	Bowl	Open	very small	intermediate	<i>Technique: Inclusions: Grits fine-to-3 mm; Firing: Pink, buff core; Surface Treatment: Wet-smoothing: On upper part while turning; Comments: "Edomite", Rough finish ext.</i>	Busayrah	Bennett 1974: 22 (fig. 14:7)
217	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: ext./int. 5YR6/4 (light reddish-brown), base center 2.5YR6/6 (light red); Manufacture: Wheelmade; Firing: Core 7.5YR6/0 (grey); Surface Treatment: Slip: Ext. rim: medium and light carbon with design; int. rim: light with design</i>	Tall al-'Umayri	Low 1991: 215 (fig. 8.21:22)
218	Bowl	Open	small	deep	<i>Technique: Ware: Color: buff; Inclusions: Grits fine-to-1 mm; Manufacture: Handmade; Firing: Core grey buff; Surface Treatment: Burnishing: Dull ring on shoulder; Painting: Red and black on rim; Comments: "Edomite"; Vessel Dimensions: Ht. 9.1 cm; rim diam. 12 cm</i>	Busayrah	Bennett 1975: 12 (fig. 7:5)
219	Bowl	Open	medium	intermediate	<i>Technique: Ware: Type: smooth; Color: pink; Inclusions: Many white grits; Surface Treatment: Painting: Black on rim and black lines on int.; Slip: Red; Comments: "Edomite"; Vessel Dimensions: Diam. 18 cm; ht. 4 cm</i>	Busayrah	Bennett 1975: 10 (fig. 6:13)
220	Bowl	Open, footed	medium	intermediate	<i>Technique: Inclusions: Grits fine-to-1 mm; Manufacture: Handmade; Firing: Pink core; Surface Treatment: Painting: Red and black lines int./ext.; Wet-smoothing; Comments: "Edomite"</i>	Busayrah	Bennett 1974: 24 (fig. 16:4)



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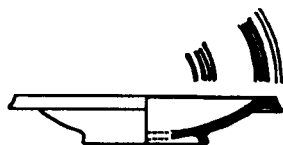
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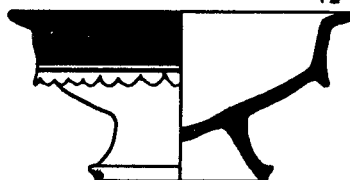
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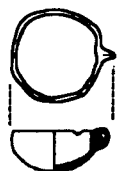
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Iron II-III pottery examples. Bowls (nos. 212-220).

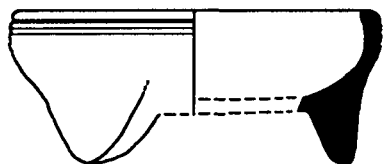
No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
221	Bowl	Open	very small	intermediate	<i>Technique: Ware:</i> Color: ext. 5YR6/4 (light reddish-brown); int. 7.5YR4/0 (dark grey); <i>Firing:</i> Core 7.5YR4/0 (dark grey)	Tall al-'Umayri	Lawlor 1991: 45 (fig. 3.26:10)
222	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: ext./int. 5YR7/4 (pink); <i>Manufacture:</i> Handmade; <i>Firing:</i> Underfired; core 7.5YR6/1 (grey)	Tall al-'Umayri	Lawlor 1997: 47 (fig. 3.22:23)
223	Bowl	Open	large	intermediate	<i>Technique: Inclusions:</i> Many medium and small black and white grits; <i>Firing:</i> Core tan; <i>Surface Treatment: Burnishing:</i> On int. and rim	Tall as-Sa'idiyah	Pritchard 1985: fig. 17:33
224	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: buff; <i>Firing:</i> Medium; <i>Surface Treatment: Burnishing:</i> Circular int.; <i>Slip:</i> Red	Sahab	Harding 1948: 97 (fig. 3:11)
225	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: ext./int. 5YR7/4 (pink); <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Oxidized (pink)	Tall al-'Umayri	Lawlor 1997: 37 (fig. 3.16:19)
226	Bowl	Open	large	intermediate	<i>Technique: Ware:</i> Color: grey; <i>Firing:</i> Hard; <i>Surface Treatment: Burnishing:</i> Wheel circular on int.; <i>Slip:</i> Ext. pink; int. black	Sahab	Harding 1948: 97 (fig. 3:3)
227	Bowl	Open	large	intermediate	<i>Technique: Ware:</i> Color: ext./int. 5YR7/4 (pink); <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Core 2.5YR5/0 (grey)	Tall al-'Umayri	Herr 1989: 327 (fig. 19.8:27)
228	Bowl	Open	medium	intermediate	—	Tall al-'Umayri	Herr 1989: 327 (fig. 19.8:12)



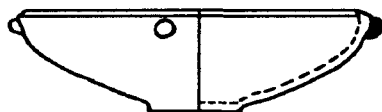
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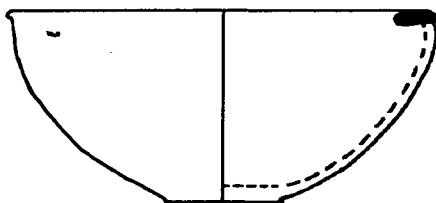
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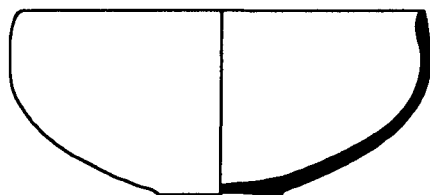


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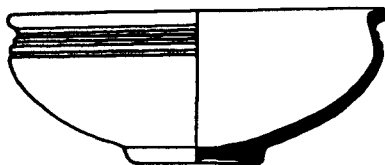


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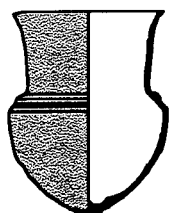
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Iron II-III pottery examples. Bowls (nos. 221-228).

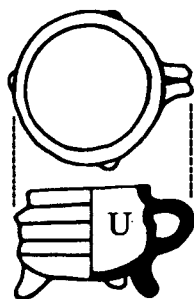
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
229	Bowl	Open	small	very deep	<i>Surface Treatment: Incising:</i> Slightly ribbed on shoulder; <i>Comments: Vessel Parts:</i> Ring base; clearly imitating the metal type and similar to a bronze vessel	Tall al-Mazar	Yassine 1984: fig. 3:7
230	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: pink; <i>Surface Treatment: Burnishing, Slip;</i> <i>Comments: Vessel Parts:</i> Curving rim with rounded profile; shape derived from metal prototype; 2 slight ribs on shoulder	Tall al-Mazar	Yassine 1984: fig. 3:3
231	Bowl	Open	very small	intermediate	<i>Comments: Vessel Dimensions:</i> Scale derived from original publication	Amman	Hadidi 1987: 103 (fig. 2:26)
232	Bowl	Open	very small	intermediate	<i>Technique: Ware:</i> Color: pink; <i>Inclusions:</i> Many; <i>Firing:</i> Good, core grey; <i>Surface Treatment: Incising:</i> Light on surface; <i>Comments:</i> "Edomite"	Umm al-Biyara	Bennett 1966: 389 (fig. 3:7)
233	Bowl (cup)	Open	small	deep	<i>Technique: Ware:</i> Type: rough; Color: buff; <i>Inclusions:</i> Large grits; <i>Comments:</i> "Edomite"; <i>Vessel Dimensions:</i> Diam. 10 cm; ht. 4 cm	Busayrah	Bennett 1975: 8 (fig. 5:16)
234	Bowl	Open	small	deep	<i>Comments: Vessel Dimensions:</i> Scale derived from original publication	Amman	Hadidi 1987: 103 (fig. 2:20)
235	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Type: smooth; Color: pink buff; <i>Surface Treatment: Painting:</i> Red band int. of rim, red and black lines on rim and body, traces of white paint; <i>Comments:</i> "Edomite"; <i>Vessel Dimensions:</i> Diam. 15 cm; ht. 11 cm	Busayrah	Bennett 1975: 8 (fig. 5:18)
236	Bowl, (incense burner)	Open	small	deep	<i>Technique: Ware:</i> Type: fairly rough; Color: pink; <i>Comments:</i> "Edomite"; <i>Vessel Dimensions:</i> Diam. 12 cm; ht. 12.5 cm	Busayrah	Bennett 1975: 12 (fig. 7:18)
237	Bowl (chalice)	Open, footed	small	intermediate	<i>Technique: Ware:</i> Color: tan; <i>Inclusions:</i> Many small-to-medium black and white grits	Tall as-Sa'idiyah	Pritchard 1985: fig. 7:30



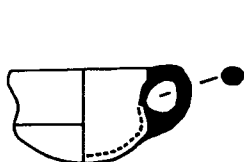
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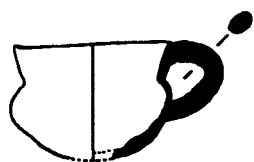
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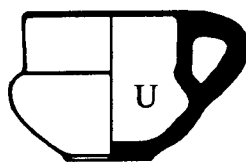
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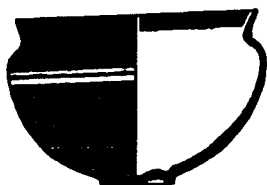


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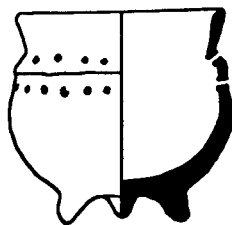


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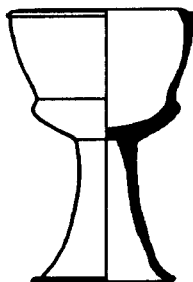
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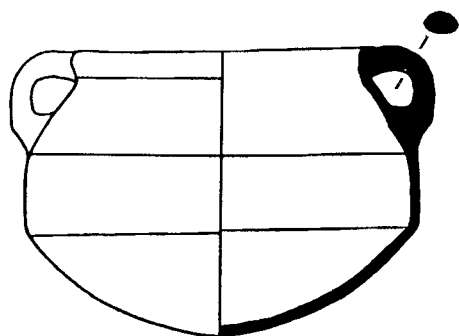
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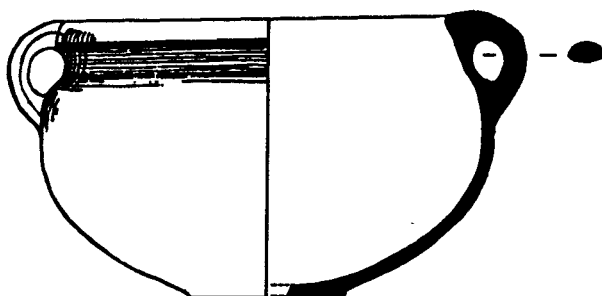
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Iron II-III pottery examples. Bowls (nos. 229-237).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
238	Bowl (cooking pot)	Open	large	deep	<i>Technique: Ware:</i> Color: 5YR6/4 (light reddish-brown); <i>Inclusions:</i> Chert and limestone up to 3 mm; <i>Levigation:</i> Coarse; <i>Firing:</i> Ext./int. 2.5Y8/2 (pale yellowish-white); 3.5 Mohs (medium) <i>Comments: Vessel Dimensions:</i> Rim diam. 20 cm	Tabaqat Fahl (Pella)	McNicol, Smith, and Hennessy 1982b: pl. 124:5
239	Bowl (cooking pot)	Open	large	intermediate	<i>Technique: Ware:</i> Type: very rough; Color: orange; <i>Inclusions:</i> Many large white grits; <i>Comments: "Edomite"; Vessel Dimensions:</i> Diam. 26 cm; ht. 18 cm	Busayrah	Bennett 1975: 8 (fig. 5:1)
240	Bowl (krater)	Open	large	intermediate	<i>Technique: Ware:</i> Color: grey; <i>Inclusions:</i> Medium coarse, multicolored; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Medium, yellowish-brown core; <i>Surface Treatment:</i> Slip: Red on upper part of body	Tall Abu al-Kharaz	Fischer 1994: 134 (fig. 3:1)

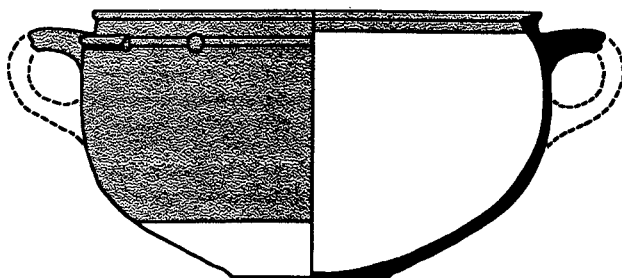


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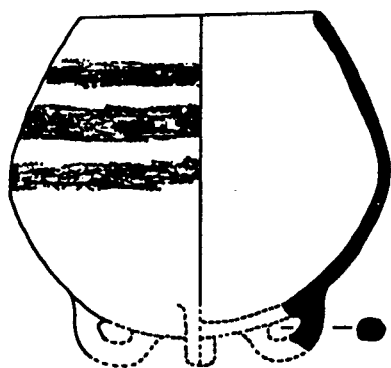


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Iron II-III pottery examples. Bowls (nos. 238-240).

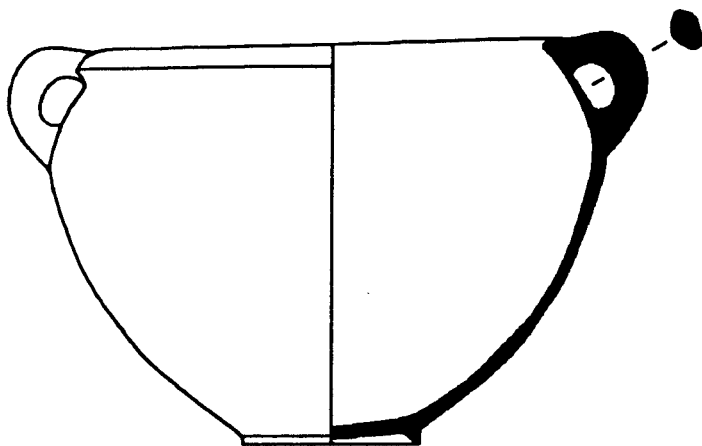
182 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
241	Bowl	Open	large	deep	<i>Technique:</i> <i>Ware:</i> Type: buff; <i>Inclusions:</i> Some grits and vegetable temper; <i>Surface</i> <i>Treatment:</i> <i>Painting:</i> Black band on ext.; <i>Comments:</i> "Edomite"; <i>Vessel Dimensions:</i> Existing ht. 21.5 cm	Busayrah	Bennett 1975: 14 (fig. 8:2)
242	Bowl (krater)	Open	large	intermediate	<i>Technique:</i> <i>Ware:</i> Color: int./ext. buff; <i>Inclusions:</i> Many mixed black and white grits; <i>Firing:</i> Core tan	Tell as-Sa'diyah	Pritchard 1985: fig. 12:15



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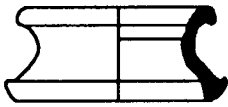


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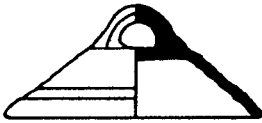
Iron II-III pottery examples. Bowls (nos. 241 and 242).

184 ANCIENT POTTERY OF TRANSJORDAN

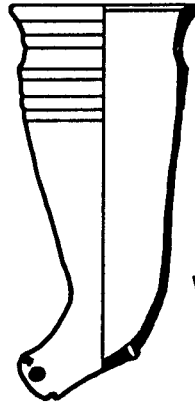
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
243	Stand	—	—	—	<i>Technique: Ware: Color: 10YR4/1 (dark grey); Firing: 2.75 Mohs (soft), ext./int. 7.5YR6/6 (reddish-yellow); Comments: Vessel Dimensions: Base diam. 12.5 cm</i>	Tabaqat Fahl (Pella)	McNicol, Smith, and Hennessey 1982b: pl. 125:6
244	Lid	—	—	—	<i>Technique: Ware: Type: smooth; Color: white; Comments: "Edomite"; Turning marks visible on ext.; Vessel Dimensions: Diam. 8 cm; ht. 8 cm</i>	Busayrah	Bennett 1975: 12 (fig. 7:15)
245	Jar (rhyton)	Closed	—	short	<i>Technique: Ware: Color: ext./int. 5YR6/3 (light reddish-brown); Manufacture: Wheelmade; Firing: Core 7.5YR6/0 (light grey)</i>	Tall al-Umayri	Lawlor 1991: 25 (fig. 3.26:19)
246	Bowl	Open	large	intermediate	—	Tall al-Umayri	Herr 1969: 337 (fig. 19.13:3)



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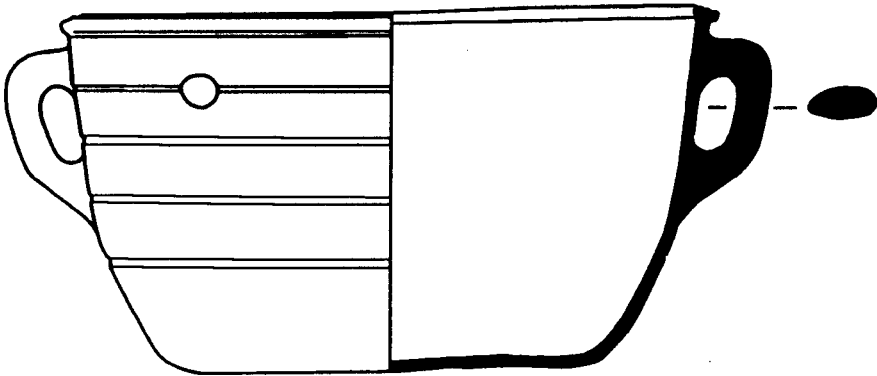


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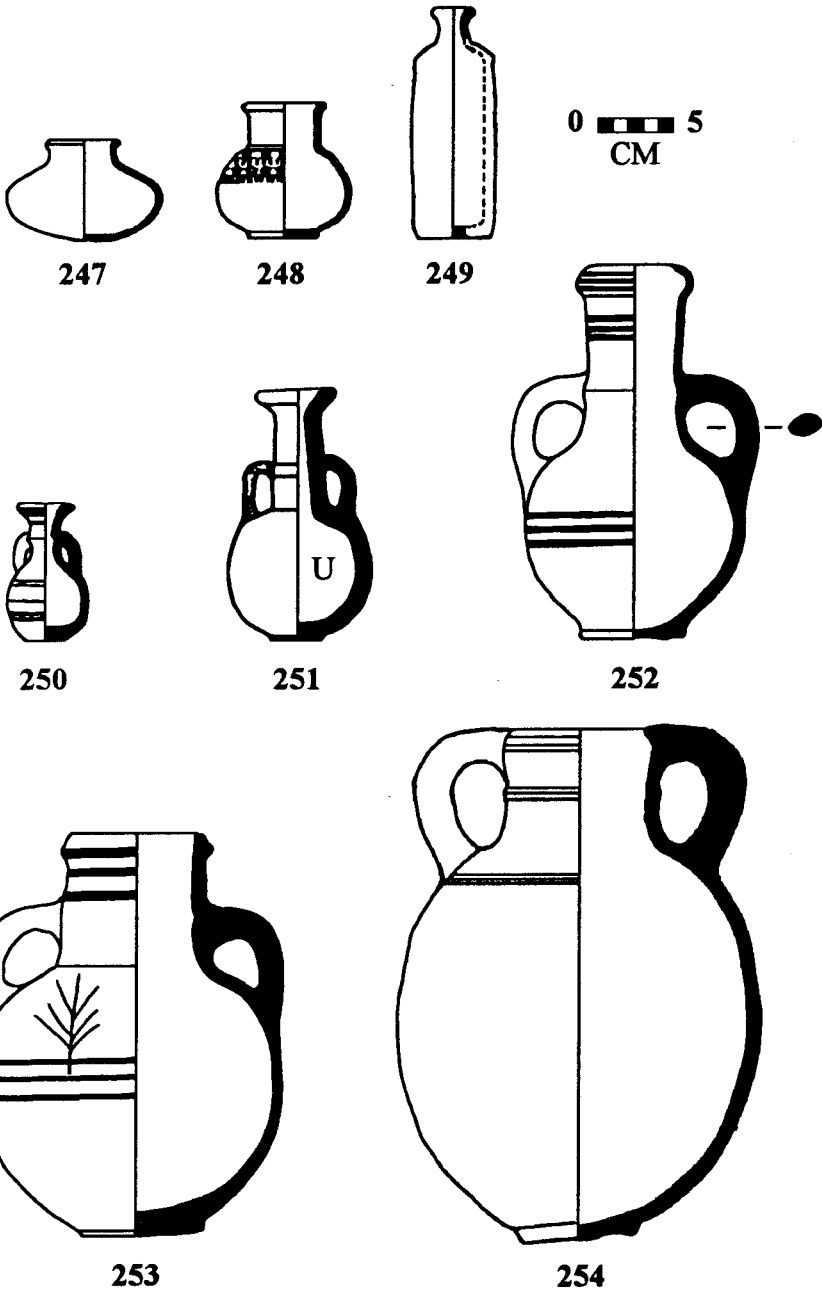
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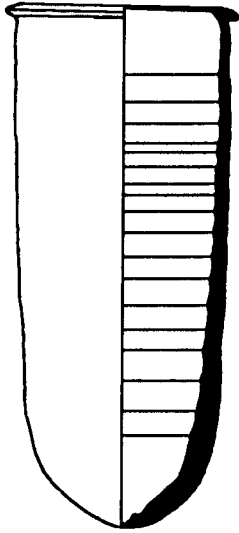
Iron II-III pottery examples. Stand (no. 243), lid (no. 244), jar (no. 245), and bowl (no. 246).

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
247	Jar	Closed	—	very short	<i>Technique: Ware:</i> Color: ext./int. 7.5YR7/4 (pink); <i>Manufacture:</i> Wheelmade; <i>Surface Treatment:</i> Burnishing; <i>Heavy hand burnish</i> ext. of rim and base	Tall al-'Umayri	Lawlor 1991: 25 (fig. 3.12:22)
248	Jar	Closed	—	very short	<i>Technique: Ware:</i> Color: yellowish-reddish; <i>Surface Treatment:</i> <i>Inclining:</i> On shoulder; <i>Comments: Vessel Parts:</i> Doubled rim; globular body; disk base	Tall al-Mazar	Yassine 1984: fig. 4:10
249	Jar (bottle)	Closed	—	short	<i>Technique: Ware:</i> Color: deep grey; <i>Surface Treatment: Luster:</i> Gloss circular; <i>Comments:</i> "Edomite"	Umm al-Biyara	Bennett 1966: 387 (fig. 2:15)
250	Jar	Closed	—	very short	<i>Technique: Inclusions:</i> Grits fine-to-1.5 mm; <i>Manufacture:</i> Handmade; <i>Firing:</i> Pink; <i>Surface Treatment: Painting:</i> Bands; <i>Wet-smoothing;</i> <i>Comments:</i> "Edomite"	Busayrah	Bennett 1974: 23 (fig. 15:6)
251	Jar (amphoriskos)	Closed	—	short	<i>Comments: Vessel Dimensions:</i> Scale derived from original publication	Azmaran	Hadidi 1987: 103 (fig. 2:54)
252	Jar (amphora)	Closed	—	short	<i>Technique: Ware:</i> Color: ext. 2.5YR6/6 (light red); int. 5YR7/3 (pink); <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Core 5YR7/3 (pink); <i>Surface Treatment: Painting:</i> 5YR3/1 (very dark grey) on rim, neck, and body	Tall al-'Umayri	Herr 1989: 323 (fig. 19.6:18)
253	Jar	Closed	—	tall	<i>Surface Treatment: Painting;</i> <i>Comments: Vessel Parts:</i> Disk base	Madaba	Piccirillo 1975: 52 (fig. II:2)
254	Jar	Closed	—	tall	<i>Technique: Ware:</i> Color: pink; <i>Surface Treatment: Inclining:</i> Grooving on rim and shoulder; <i>Ridging:</i> On neck; <i>Comments: Vessel Parts:</i> Handles drawn from ridged grooved rim; shallow disk base; irregular body profile	Tall al-Mazar	Yassine 1984: fig. 4:14

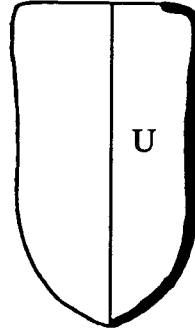


Iron II-III pottery examples. Jars (nos. 247-254).

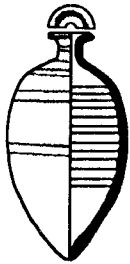
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
255	Jar	Closed	—	tall	<i>Technique: Ware:</i> Color: pink; <i>Inclusions:</i> Many grits of different kinds; <i>Firing:</i> Core brown; <i>Com- ments:</i> "Edomite"	Busayrah	Bennett 1974: 22 (fig. 14:10)
256	Jar	Closed	—	—	<i>Comments: Vessel Dimensions:</i> Secondary publication unscaled	Amman	Dornemann 1983: 234 (fig. 41:5)
257	Jar (bottle)	Closed	—	tall	<i>Technique: Inclusions:</i> Very fine grits; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Red; <i>Surface Treatment:</i> <i>Burnishing:</i> With a rib; <i>Painting:</i> Bands of red and black	Busayrah	Bennett 1974: 24 (fig. 16:6)
258	Jar	Closed	—	—	<i>Comments: Vessel Dimensions:</i> Secondary publication unscaled	Amman	Dornemann 1983: 233 (fig. 40:15)
259	Jar (bottle)	Closed	—	tall	—	Tall al-Mazar	Yassine 1984: fig. 5:4



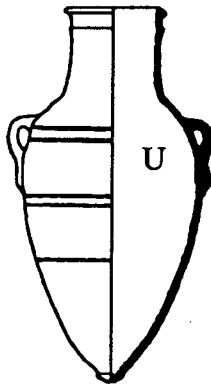
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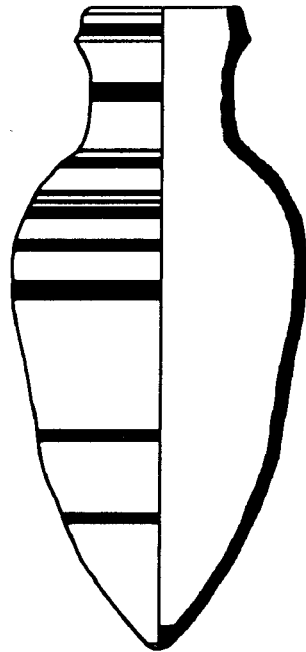
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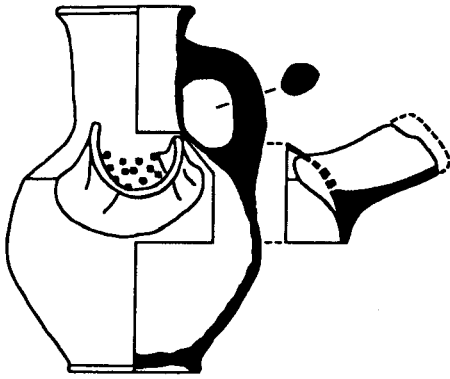


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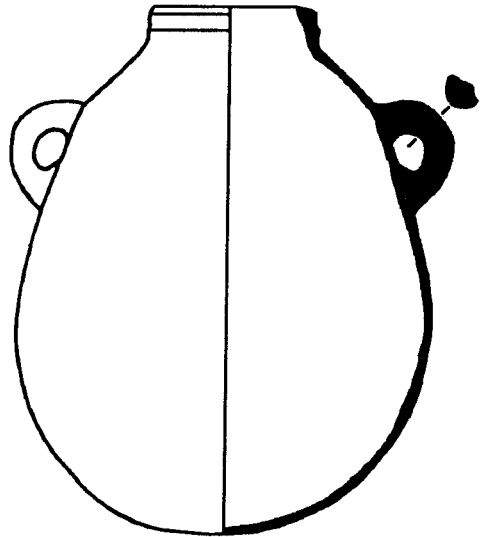
Iron II-III pottery examples. Jars (nos. 255-259).

190 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
260	Jar (beer strainer)	Closed, spouted	—	short	<i>Technique: Inclusions:</i> Many fine lime and chert grits; <i>Levigation:</i> Fairly well; <i>Firing:</i> Pale greyish-buff throughout; <i>Surface Treatment: Slip:</i> Brown buff ext.	Tabaqat Fahl (Pella)	Edwards <i>et al.</i> 1990: 70 (fig. 7:1)
261	Jar	Closed, storage	—	tall	<i>Technique: Ware:</i> Color: red-brown; <i>Inclusions:</i> Many small black and white grits	Tall as-Sa'idiyah	Pritchard 1985: fig. 9:1
262	Jar	Closed	—	tall	<i>Technique: Ware:</i> Color: ext./int. 5YR6/6 (reddish-yellow); <i>Firing:</i> Core medium grey; <i>Surface Treatment: Burnishing:</i> Wheel burnishing on ext.; <i>Slip:</i> Ext. 10YR8/2 (white)	Rujm al-Hanu	Clark 1983: 161 (fig. 8:101)
263	Jar	Closed	—	tall	<i>Technique: Ware:</i> Color: ext./int. red brown; <i>Inclusions:</i> Many mixed black and white grits; <i>Firing:</i> Core grey; <i>Surface Treatment: Slip:</i> Tan	Tall as-Sa'idiyah	Pritchard 1985: fig. 9:13

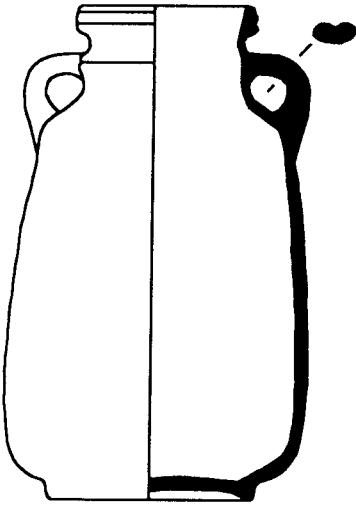


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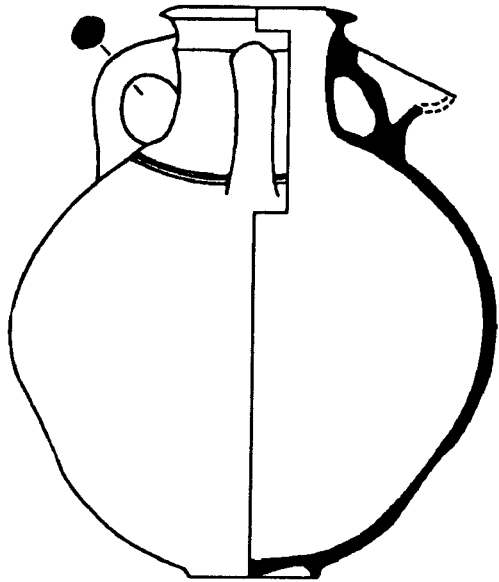


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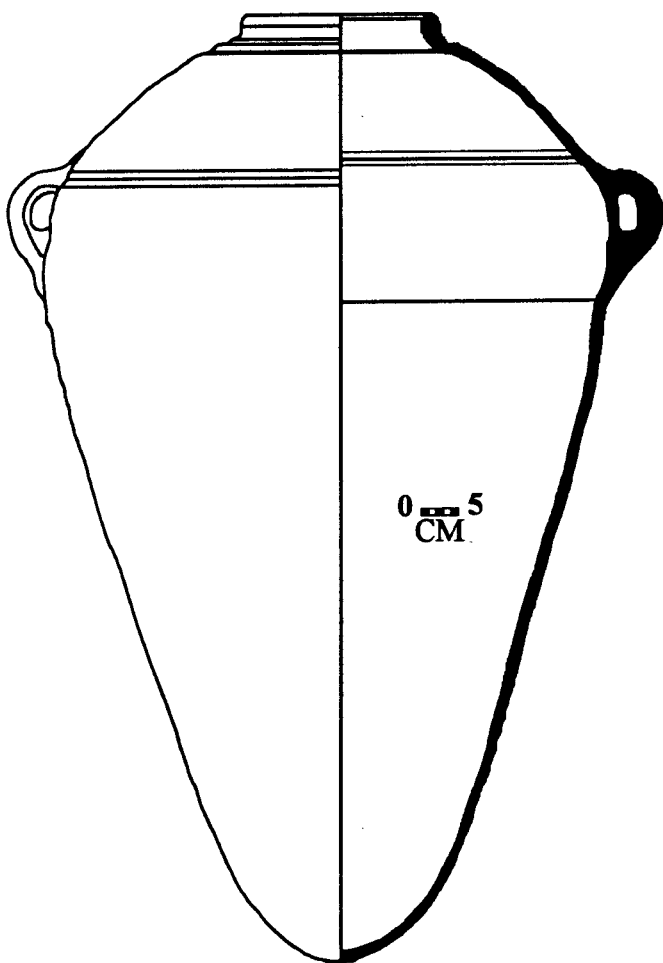


263

Iron II-III pottery examples. Jars (nos. 260-263).

192 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
264	Jar	Closed	—	very tall	Comments: <i>Vessel Parts:</i> Collared-rim	Um al-Hodamus	Palumbo 1992: 31 (fig. 4:06)



264

Iron II-III pottery examples. Jar (no. 264, scaled at 10%).

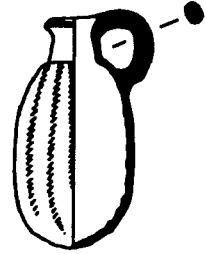
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
265	Jug (juglet)	Closed	—	very short	<i>Technique: Ware:</i> Type: Cypriot; <i>Color:</i> red; <i>Firing:</i> Hard; <i>Surface Treatment: Burnishing:</i> Wheel; <i>Painting:</i> Horizontal bands and intercircles; <i>Slip:</i> Red; <i>Smoothing;</i> <i>Comments: Vessel Parts:</i> Flat base	Tall Irbid	Dajani 1966a: pl. XXXIV:24
266	Jug (juglet)	Closed	—	very short	<i>Technique: Ware:</i> <i>Color:</i> black; <i>Firing:</i> Hard; <i>Surface Treatment: Burnishing:</i> Vertical; <i>Slip:</i> Black; <i>Smoothing;</i> <i>Comments: Vessel Parts:</i> Knob base	Tall Irbid	Dajani 1966a: pl. XXXIII:9
267	Jug	Closed	—	short	<i>Technique: Ware:</i> <i>Color:</i> red; <i>Inclusions:</i> Few large white and some small black and white grits; <i>Firing:</i> Core tan; <i>Surface Treatment: Burnishing:</i> Vertical on body	Tall as-Sa'idiyah	Pritchard 1985: fig. 11:1
268	Jug (decanter)	Closed	—	short	<i>Technique: Ware:</i> <i>Color:</i> grey; <i>Inclusions:</i> Mixed black and white grits	Tall as-Sa'idiyah	Pritchard 1985: fig. 11:13
269	Jug (decanter)	Closed	—	short	<i>Surface Treatment: Burnishing:</i> Pink reddish; <i>Comments: Vessel Parts:</i> Splayed and out off rim; ridged neck; handle drawn from ridged neck; ornated shoulder; globular body; disk base	Tall al-Mazar	Yassine 1984: fig. 4:5
270	Jug (alabastron)	Closed	—	short	<i>Technique: Ware:</i> <i>Color:</i> pink; <i>Surface Treatment: Burnishing:</i> Vertical; <i>Comments: Vessel Parts:</i> Doubled rim; ridged neck; 2 knobs; elongated body; rounded base	Tall al-Mazar	Yassine 1984: fig. 3:12
271	Jug	Closed	—	short	<i>Technique: Ware:</i> <i>Color:</i> pink buff; <i>Surface Treatment: Burnishing:</i> Hand; <i>Incising:</i> Horizontal ribbing; <i>Comments: Vessel Parts:</i> Cylindrical body; ridged rim; handle drawn from lip	Tall al-Mazar	Yassine 1984: fig. 3:19



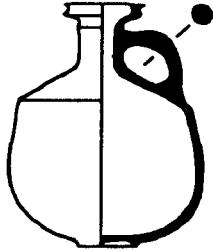
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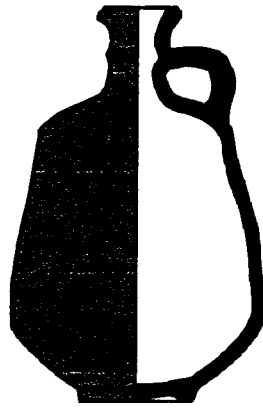
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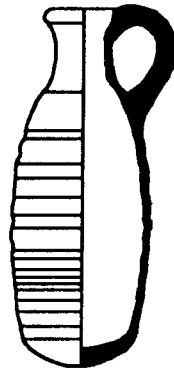
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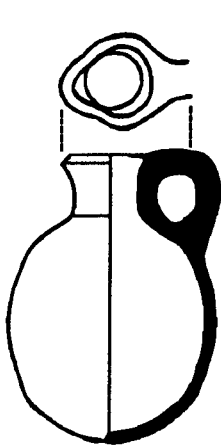
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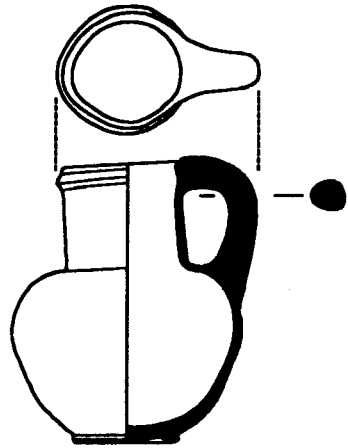
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Iron II-III pottery examples. Jugs (nos. 265-271).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
272	Jug	Closed	—	short	<i>Technique: Ware: Color: grey; Comments: Vessel Parts: Ridged rim; loop handles drawn from the rim; hemispherical profile; flat-convex base</i>	Tall al-Mazar	Yassine 1984: fig. 42
273	Jug	Closed	—	short	<i>Technique: Levigation: Well; Inclusions: Many small and medium lime and chert grits; Firing: Buff throughout; Surface Treatment: Wet-smoothing</i>	Tabaqat Fahl (Pella)	Edwards <i>et al.</i> 1990: 69 (fig. 6.4)
274	Jug (flask)	Closed	—	tall	<i>Technique: Ware: Color: tan; Surface Treatment: Painting: Red lines on both sides of body</i>	Tall as-Sa'idiyah	Pritchard 1985: fig. 11:18

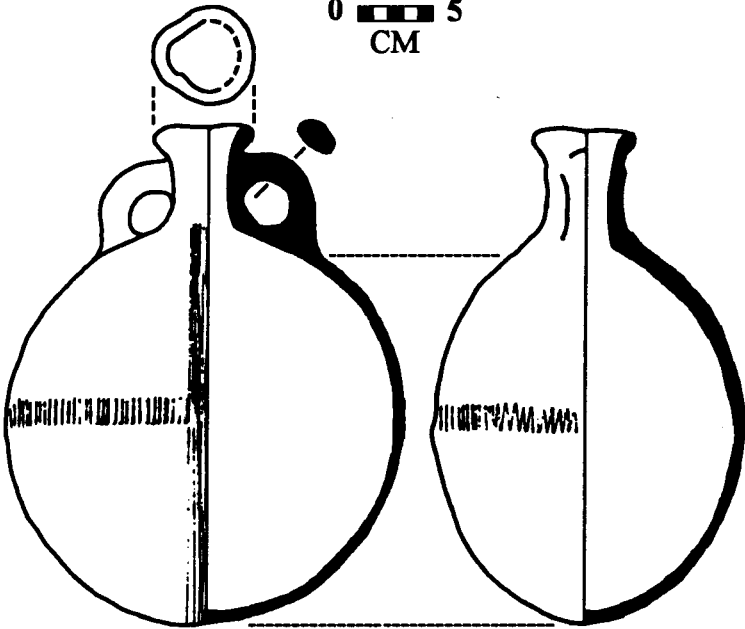


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Iron II-III pottery examples. Jugs (nos. 272-274).

Storage jars, in general, fell into two categories: 1) piriform with a low neck and outcurving or ridged rim; or 2) biconical with high neck and curved rim. Both types had rounded bases and thick loop-handles from the shoulder. Storage jar rims were thickened, or were flared outward with a ridge below the rim. A ridged-neck storage jar with thicker, gently-ridged rim may have been a transitional late Iron I-early Iron II form. Collared-rim storage jars had two types of rims: short neck with rounded rim, or tall neck with a ridge halfway between the rim and neck base. Collared-rim storage jars continued to be manufactured in the Iron II period. Iron III low-necked storage jars with thick rims were derived from the more angular Iron II "sausage jar." **Jugs:** Jug forms included alabastrons, decanters, flasks, juglets, jugs, spouted dipper juglets, and spouted jugs. Jug lip profiles included flattened, rounded, squared, and thickened styles. Jug rim profiles included flattened, pinched, and thickened styles. Jug rim inflections included angular, curved, and straight styles. Jug neck profiles included conical, curving, and cylindrical styles. Jug wall profiles included biconical, globular, and piriform styles. Alabastrons (ceramic imitations of stone alabaster) were made during the Iron II-III period. Decanters with a biconical body, a single handle from shoulder-to-neck, and a concave or ring base were common. Juglets sometimes had a very high loop handle. Jugs sometimes had a disk base, a high loop handle, and were mostly burnished. Spouted jugs had the spout either on the side or in front (relative to the handle). Jugs with strainer spouts usually featured a slip and burnishing. **Miscellaneous vessels:** Miscellaneous forms included incense burners, jar stands, kernoi, lamps, lids, and a possible incense burner holder. Incense burners (sometimes difficult to differentiate from strainers) were made. Lamps were made in two sizes, both characterized by wide rims with horizontally-flattened profiles and rounded bases. Lamp rims were pinched in one place, occasionally more, and in at least one instance, as many as eight (Najjar 1996, personal communication). A shallow, open form with three projecting knobs in the interior was possibly an incense burner holder (Najjar 1996, personal communication). A vessel, previously termed a "cup-and-saucer," is now often identified as a lamp form. **Vessel parts:** Bases included disk (string-cut), pointed, ring, round, step-cut, stump, and tripod styles. Ringed bases appeared on bowls and jugs (decanters). Ringed and low, step-cut bases were indicative of late Iron II (Brown 1991: 202; but see, Lugenbeal and Sauer 1972: 61). Tripod bases were on bowls. Handles included bar, ledge, and loop styles. Bar handles on bowls were common.

As stated above, there is currently a categorical difference of scholarly opinion regarding the possibility of separating the Iron II period ceramic corpus according to subcultures (Ammonite, Moabite, and Edomite). The following subcultural characterizations are included in order to present the current state of understanding of differentiation of the Iron II period pottery corpus.

The Iron II Period, Northern Central Plateau "Ammonite" Culture

The assemblage of vessel forms from the Northern Central Plateau, often associated with the Ammonites, has been isolated to some extent. The following description of the most frequent and typical forms particular to the Ammonite region is taken from Larry Herr (1997).

Technique. Ware: Special wares included a grey ware used on some mortars which appears to imitate basalt.

Surface treatment. Burnishing: Bowl forms were sometimes manufactured in a black-burnished ware which was very rare outside of the Ammonite territory. *Painting:* Ammonite-style painting included precisely drawn horizontal bands of alternating black and white paint or wash.

Forms. Bowls: Bowl forms included basins, bowls, cooking pots, cups, and kraters. Basins (with flat bases, relatively straight walls, and outward-turned rims) were rare outside of the region, but were common in Ammonite territory. Two forms of cooking pots included the very common "normal" late Iron II cooking pot (with a thickened rim bearing a ridge) as well as a more unique distinctive form (with thickened rim, sometimes pointed at the top). Tripod cups were not frequent, but were distinctive to the Northern Central Plateau. Kraters with holemouths and globular wall profiles were also common. The most common bowl had an offset rim. One type of bowl had a vertical wall with a simple rim and a small ridge below the rim. Common bowls include one type with flattened rims (90° inverted), and another type with outward-turned rims and rounded, grooved (or ungrooved) profiles. Less attested were more shallow bowls with carinated or globular wall profiles and widened, thickened (τ-shaped) rim profiles.

Jars: Jar forms included holemouth jars, storage jars, and other jars.

Typical necked jars have narrow openings, a triangular rim, and an insloping neck. Many times, the neck sports 3-5 grooves. Similar rims with grooved necks were also found atop upright [vertical] necks. ...

Pithoi are typically large holemouth storage vessels, often with thickened rims and ridges, waves or grooves outside the rim. These storage jars may [began] earlier than other corpus forms (Herr 1997: 245).

Jugs: "Jugs can also carry triangular rims, but more typical is the thickened, crescent-shaped rim" (Herr 1997: 245). **Miscellaneous vessels:** Miscellaneous forms included mortars which were quite common. They were usually made with thick, gray ware to look like basalt mortars. **Vessel parts:** Bases include tripods on cups.

The Iron I-III Period, Southern Central Plateau "Moabite" Culture

The material culture straddling the Wadi Mujib, south to the Wadi Hasa is currently thought of as "Moabite." Udo Worschech (1996, personal communication) has supplied the following description of typical Moabite pottery culture based on Dhiban (Winnett and Reed 1964; Tushingham 1972), the Kerak Plateau survey (Brown 1991), and the excavation at al-Balua' (Worschech 1990: 71-86).

Technique. Ware: The Iron I wares were heavy and coarse. Iron I Moabite wares sometimes also had a greenish surface. The Iron II and III periods marked a proliferation in ware colors including red, white, pink, red, orange, and buff. **Inclusions:** The surfaces of Iron I sherds were more pitted than from Late Bronze or Middle Bronze Ages. In Iron I, large amounts of mineral temper were used with dense calcite inclusions. Size or quality of mineral inclusions varied greatly in the Iron II period. In the Iron III period, medium-to-small grits for temper were used as in the Iron II period. **Manufacturing:** In the Iron II period, vessels were made on a weighted potter's wheel effecting a better vessel quality. **Firing:** Some Iron II vessels were well-fired while others show a range of thick-to-faint cores. Iron III firing ranged from very good-to-very poor.

Surface treatment. Slipping: The majority of Iron I vessels found in the Southern Central Plateau of Transjordan were generally plain and were decorated only with a surface slip. Iron II and III slip colors include red, white, pink, red, orange, and buff. **Burnishing:** Burnishing in Iron I was rare. **Painting:** Iron I painted vessels sometimes had painted rims and dripped red paint on the body or on the interior. Typical Iron II Moabite painting consisted of multicolored decorations of alternating horizontal parallel bands or zones of red and white set off by thin black lines. **Smoothing and Wiping:** During the Iron I period, there were sometimes traces of an uneven hand smoothing or wiping the vessels.

Forms. Thick and heavy bowls, kraters, and jars of various sizes were the most numerous Iron I forms. In Iron II, a greater diversity of vessel types and specific forms within these types occurred. During Iron II, there

was a wide variety of holemouth jars as well as krater, jug, and cooking pot forms. **Bowls:** Bowl forms included bowls, cooking pots, and kraters. Iron II bowls usually had outcurving rim inflections, thickened rim profiles with notching, and biconical wall profiles. Cooking pots had rounded lip profiles and thickened rim profiles. Rims of kraters had a vertical stance and were externally thickened. **Jars:** Jar forms included jars and storage jars. Iron II jar forms had a simple wedge-thickened profile. Early storage jars had a gently ridged form and a hooked rim, while those of Iron II (7th-5th centuries) had a broad flanged rim and a rounded base. **Jugs:** Iron II jug rim profiles were usually thickened with rounded lips. Jug bodies were globular (ovoid), later more cylindrical.

The Iron II Period, Southern "Edomite" Culture

The material culture south of the Wadi Hasa is currently thought of as "Edomite." Piotr Bienkowski (1996, personal communication) has supplied the following description of typical Edomite pottery culture based on the sites of Tawilan (Hart 1995: 53-66), Busayra (Oakeshott 1983) and Umm al-Biyara (Bennett 1966; see generally Bienkowski 1995: 49-53).

Technique. **Ware:** Negev ware (Bennett and Bienkowski 1995: fig. 6.36) was a coarse, handmade pottery that occurred throughout Edom and the Negev during all of the Iron Age. **Inclusions:** Inclusions were calcareous. Inclusions were basalt, quartz, grog, mica, vegetable matter, and calcite. **Levigation:** Clays were moderately-to-well levigated. **Manufacturing:** Vessels were generally wheelmade, with the exception of Negev ware which was handmade. **Firing:** Firing was normally within the range of red-buff-orange-grey, though white-firing clays were also used. (Calcareous inclusions effectively prevents firing above about 900°C.) Thicker sherds (5 mm and above) nearly always had a grey or black unoxidized core.

Surface treatment. **Slipping:** The slips fired red, brown, or black. **Painting:** Vessels were sometimes unpainted. When painted, the paint used was pigmented slip which was applied to the surface before firing and adhering well. Bowls were often painted with bands, occasionally with groups of slash or dribble marks on the rim or more complex decoration such as cross-hatching, and panel designs, as well as vertical and horizontal lines (Bennett and Bienkowski 1995: figs. 6.1:3, 6.10:1, 6.13:2). **Impressing:** Surface treatment included finger and dot impressions (Bennett and Bienkowski 1995: fig. 6.8:9), a denticulated band at the rim of certain bowls (Oakeshott 1983: fig. 1:4, 7), and occasionally seal impressions.

Forms. Bowls: Bowl forms included bowls, kraters, necked bowls, platters, and spouted bowls. The most common vessel types were shallow and intermediate bowls: plates, platters, and bowls (Bennett and Bienkowski 1995: fig. 6.1). Fine-ware bowls (Bennett and Bienkowski 1995: fig. 6.8) were defined by the thinness of their walls and were usually decorated. Necked bowls (Bennett and Bienkowski 1995: fig. 6.19) were deep bowls with a short neck. Cooking pots normally had a ridged rim continuing the line of the shoulder (Bennett and Bienkowski 1995: fig. 6.33). Kraters (Bennett and Bienkowski 1995: fig. 6.15) were deep bowls with handles, generally undecorated. **Jars:** Jar forms included storage jars and other jars. There was a wide range of large storage jar types (Bennett and Bienkowski 1995: figs. 6.24 and 6.25). **Jugs:** Jug forms included jugs. Large jugs with a ridged rim (Bennett and Bienkowski 1995: figs. 6.26 and 6.27) had one handle from shoulder-to-rim, and were only occasionally decorated. **Miscellaneous vessels:** Miscellaneous forms included lamps. Lamps show little distinction from standard Iron Age II forms (Bennett and Bienkowski 1995: fig. 6.34:13-16).

The Iron III Period, "Persian" Culture

"Stratified Persian pottery is not well-attested in Transjordan" (Brown 1991: 205). The following description of the Iron III period "Persian" culture has been gleaned from the Kerak Plateau (Brown 1991), the Northern Central Plateau (Herr 1997), and the Southern Central Plateau (Worschech 1996, personal communication).

Technique. Ware: Persian wares had hard fabrics and various shades of orange, dark brown, and grey colors.

Surface treatment. Burnishing, Slipping, and Incising were used.

Form. Herr indicates similarities between Northern Central Plateau forms and Persian forms for the triangular jar and jug rims; necked kraters; bowls with outcurving, everted rims; deep hemispherical bowls that sometimes had an exterior groove below the rim; and necked cooking pots.

"Totally absent from the corpus are such Persian standbys as sausage jars, high-necked cooking pots, and amphoras. Very rare were mortaria and shallow rounded bowls" (1997: 245). **Bowls:** Bowl forms included bowls, fishplates, and mortaria. Bowls of the Persian culture had opened incurved rims. Bowls were red burnished. Fishplates and early styles of mortaria appeared in the Iron III period. **Jars:** Jars included holemouth jars, jars, and storage jars. Holemouth and storage jars had thick, upturned rims.

The Hellenistic Period

The Classical periods in Transjordan were characterized, not only by a change in technique, surface treatment, and form—which were typical of other periods—but also by a veneer of Hellenistic (Greek) and Roman imported vessels which overlaid and influenced the indigenous Transjordanian pottery corpus.

Probably the most distinctive Hellenistic pottery characterization is that it is common to the whole Eastern Mediterranean world, including Transjordan, not regional, as in the Iron Age (Lapp 1996, personal communication).

The Hellenistic ceramic repertoire can be differentiated morphologically from the later Nabataean and Roman corpora. Due to the importation of particular Aegean forms and the fact that local potters began imitating these imports, Hellenistic pottery was very similar throughout Syro-Palestine, including Transjordan.

The technological changes in ceramic production that were manifest in southern Levantine Hellenistic pottery demonstrate the impact of Greek manufacturing techniques upon indigenous ceramic producers. Vessel form was also influenced by Aegean products and imported Greek ware became part of the Levantine ceramic repertoire. ...The use of a faster wheel, the production of new and thinner vessel forms, and the introduction of orange and red-brown mottled slips combined to transform aspects of the ceramic assemblage in sharp contrast to the attributes of the [preceding period] (Brown 1991: 208).

The Nabataean cultural influence may be traced from the Hellenistic period, but especially from the Early Roman period, and to a lessening extent, into the Byzantine period. The Nabataean pottery forms are included with the appropriate historical period (some forms in the Hellenistic section and some in Early Roman), however, since the Nabataean cultural influence was most dominant in the Early Roman period, it is prudent to include the Nabataean ceramic characterization as a separate section following that latter period.

Some of the sites currently associated with the Hellenistic period pottery culture in Transjordan include: al-Drayjat, Amman, Amman Citadel (al-Qal'a), Amman Roman Forum, Aqaba, 'Ara'ir ('Aro'er), az-Zantur, Baq'ah, Dayr 'Alla, Faynan (Feinan), 'Iraq al-Amir, Jarash, Khirbat al-Mukhayyat, Machaerus, Mount Nebo, Quwayliba (Abila), Tabaqat Fahl (Pella), Tall al-Fuhhar, Tall al-Mazar, Tall al-'Umayri, Tall as-Sa'idiyah, Tall ash-Shuna (North), Tall Hisban, Tall Iktanu, Tall Nimrin, Tall Siran, Talul adh-Dhahab, Udhruh, and Zurrabah, as well as small sites along the Wadi al-Hasa, Wadi al-Yabis, and Wadi Ziqlab. This description is from

the site of Tabaqat Fahl (McNicoll *et al.* 1984: 55-86), J. Sauer (1994), the contextual study of the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

Technique. Ware: Local wares included imitations of imported glazed pottery, well-levigated buff ware, and coarse light brown ware. Local ware colors included mostly pink-orange, beige, and characteristic grey ware. Other ware colors included reddish-brown and dark red. Imported wares included black glazed ware (actually, a slip and not a true glaze), Rhodian ware, and Megarian ware. The fine, buff paste of Rhodian ware was exceptionally well prepared and fired (Brown 1991: 206). Moldmade Megarian ceramics consisted of an orange-pink ware with deep bright red paint on both the interior and exterior, and was characteristically decorated with "egg-and-dart" and palmette motifs (Brown 1991: 206). **Inclusions and Levigation:** Clays were very well prepared with fine temper. **Manufacturing:** Table wares were better made and had less surface treatment or decoration than was utilized in Iron II and III (Brown 1991: 208). Globular bowls (generally, hemispherical) may have been mass-produced (Brown 1991: 208). Some distinctive vessels were handmade. **Firing:** Firing was very good-to-excellent, with some bluish cores present.

Surface treatment. There was "a distinct lack of attention to the application of surface finish" during the Hellenistic period (Brown 1991: 208). **Slipping:** Slip colors included dark, red-brown; mottled, red-orange-brown; semi-glossy, streaked, deep-reddish (the common Hellenistic surface treatment). **Glazing:** Slip glazing was present on some forms in red or black. **Wash:** Some vessels exhibited black or reddish wash. **Painting:** Painting was applied.

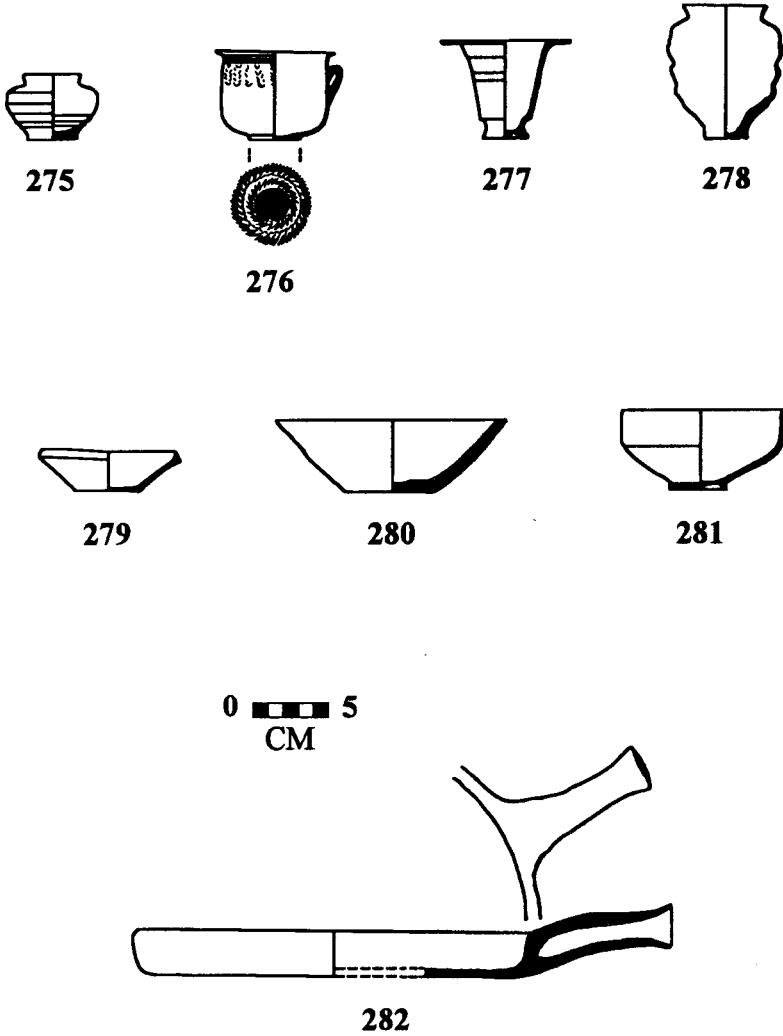
Fluting: Fluting was present. **Impressing:** Stamping and finger impressing were utilized. Imported Rhodian jar handles were often stamped with their maker's name while local imitations were not stamped. **Incising, Molding, Rouletting:** Incising, molding, and rouletting were all used as surface treatments.

Forms (pottery examples 275-309). **Bowls:** Bowl forms included casseroles, cooking pots, cups, fishplates, frying pans, goblets, hemispherical bowls, kraters, plates, platters, and other bowls. New forms introduced in the Hellenistic period included fishplates and hemispherical bowls (Brown 1991: 208). Imported bowls included the Megarian bowl (Brown 1991: 208). Bowl lip profiles included flattened, rounded, and

thickened, as well as thinned styles (the latter being less common). Bowl rim profiles included doubled, flattened, and thickened styles. Bowl rim inflections included angular and straight styles. Bowl wall profiles were biconical, conical, cylindrical, globular, and piriform. The "incurved" or "hemispherical" bowl with either a flat or ring base appeared later in the Hellenistic period and continued through to the Early Roman, *ca.* 200 B.C. to A.D. 68, and may have been made either locally or imported (Brown 1991: 206 and 207). Cooking pot rim inflections were angular, curved, or straight. Fishplates were "a distinctive, characteristic Hellenistic form" (Lapp 1996, personal communication). Hellenistic fishplates with their center depressions, imitated imported Greek fishplates and were well-made.

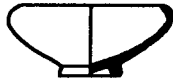
Jars: Jar forms included various styles including Rhodian jars, spindle bottles, storage jars, and unguentaria. Jar rims typically had thickened profiles and everted inflections. Imported jars included the tall, straight-necked Rhodian jar. **Jugs:** Jug forms included alabastrons, decanters, juglets, and lagynoi, as well as various other jug styles. Jugs commonly had conical and curving necks. Jug rim profiles included flattened, pinched, and thickened styles. **Miscellaneous vessels:** Miscellaneous forms included lamps. Lamps were moldmade. **Vessel parts:** Bases included flat and ringed. Handles included loop handles, sometimes sharply angled. Imported Rhodian jar handles were often stamped with their maker's name while local imitations were not stamped.

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
275	Bowl	Open	very small	intermediate	Technique: <i>Ware</i> : Color: orange; Surface Treatment: <i>Incising</i> : Ribbing; <i>Slip</i> : Yellowish; <i>Comments</i> : "Nabataean"; <i>Vessel Parts</i> : Globular wall profile	Petra	Zayadine 1979: pl. LXXXVII:2
276	Bowl (cup)	Open	very small	deep	Technique: <i>Ware</i> : Type: fine hard; Color: red; <i>Inclusions</i> : No visible grit; <i>Firing</i> : Throughout; Surface Treatment: <i>Impressing</i> : Horizontal band of palm fronds around upper half; <i>Incising</i> : 2 horizontal lines below ext. rim and spiral under ring base; <i>Rouletting</i> : Band above base; <i>Slip</i> : Dark red engobe ext., smoothed; <i>Comments</i> : "Nabataean"; <i>Vessel Parts</i> : Out-turned rim; cylindrical wall profile; ring base; small flattened loop handle	Petra	Khairy 1983: 18 (fig. 1:5)
277	Bowl	Open	very small	deep	Technique: <i>Ware</i> : Type: fine thin ware; Color: red; Surface Treatment: <i>Incising</i> : Spiral lines on body; <i>Comments</i> : "Nabataean"; Originally published as a jar; <i>Vessel Dimensions</i> : Ht. 6.5 cm; rim diam. 8.5 cm	Petra	Hammond 1973: 46: no. 91
278	Bowl (cup)	Open	very small	very deep	Technique: <i>Ware</i> : Color: pink; <i>Inclusions</i> : White; <i>Comments</i> : "Nabataean"	Petra	Zayadine 1979: pl. LXXXIX:14
279	Bowl	Open	very small	intermediate	Technique: <i>Ware</i> : Type: coarse gritty; <i>Firing</i> : Drab light brown; <i>Comments</i> : <i>Vessel Parts</i> : String-out base; <i>Vessel Dimensions</i> : Diam. 9.5 cm	Tabaqat Fahl (Pella)	McNicoll and Hennessy 1980: 235 (pl. XVIII:9)
280	Bowl	Open	small	intermediate	Technique: <i>Ware</i> : Type: coarse; Color: tan; <i>Comments</i> : Possible "Nabataean"; <i>Vessel Parts</i> : String-out base; crudely thrown; fire marks on surface; flecks of iron pyrites on surface; <i>Vessel Dimensions</i> : Diam. 12.5 cm; ht. 4.8 cm	Petra	Hammond 1973: 39: no. 6
281	Bowl	Open	small	intermediate	Technique: <i>Ware</i> : Type: fine thin ware; Color: red; <i>Comments</i> : "Nabataean"; <i>Vessel Parts</i> : Ring base; <i>Vessel Dimensions</i> : Ht. 5.4 cm; rim diam. 10 cm	Petra	Hammond 1973: 45: no. 72
282	Bowl (frying pan)	Open	large	shallow	Technique: <i>Ware</i> : Type: coarse; <i>Firing</i> : Terracotta color; <i>Comments</i> : <i>Vessel Dimensions</i> : Diam. 27 cm	Tabaqat Fahl (Pella)	McNicoll and Hennessy 1980: 234 (pl. XVII:7)



Hellenistic pottery examples. Bowls (nos. 275-282).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
283	Bowl	Open	small	intermediate	<i>Technique:</i> Levigation: Fine; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Buff; <i>Surface Treatment:</i> Slip: Matte red int/ext.	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 128:9
284	Bowl (cup)	Open	very small	deep	<i>Technique:</i> Ware: Type: fine thin ware; Color: red; Surface Treatment: Incising: Spiral; Rouletting: On base; Comments: "Nabataean"; <i>Vessel Parts:</i> Globular wall profile; wide ring base; <i>Vessel Dimensions:</i> Ht. 5.9 cm; rim diam. 7.5 cm	Petra	Hammond 1973: 46: no. 92
285	Bowl (fishplate)	Open	medium	shallow	<i>Technique:</i> Ware: Color: 2.5YR4/4 (reddish-brown); <i>Firing:</i> 3.75 Mohs (Medium); Comments: <i>Vessel Dimensions:</i> Diam. 23 cm	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 130:4
286	Bowl	Open	medium	intermediate	<i>Technique:</i> Levigation: Fine; <i>Firing:</i> Terracotta color; Surface Treatment: Glazing: Metallic black on int/ext. and red glazed relief on foot; <i>Impressing:</i> 5 palmettes in relief; <i>Rouletting</i>	Tabaqat Fahl (Pella)	McNicoll and Hennessy 1980: 236 (pl. XIX:1)
287	Bowl	Open	medium	intermediate	<i>Technique:</i> Ware: Type: Eastern Sigillata A; Color: buff; <i>Levigation:</i> Fine; <i>Firing:</i> 2.5 Mohs; <i>Surface Treatment:</i> Glazing: Dull red	Tabaqat Fahl (Pella)	Edwards <i>et al.</i> 1990: 75 (fig. 10:9)
288	Bowl	Open, footed	—	intermediate	<i>Technique:</i> Ware: Type: coarse; Color: ext/int. light brown; <i>Firing:</i> 6.0 Mohs, core 7.5YR8/4; <i>Surface Treatment:</i> Wash: Int. 2.5YR6/8 (reddish); ext. 2.5YR3/1-4/4; Comments: <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1984: 71 (fig. 7:3)



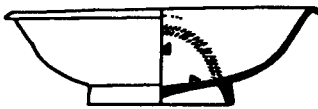
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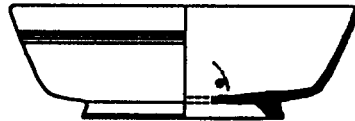
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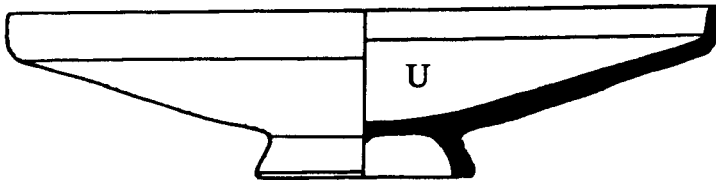


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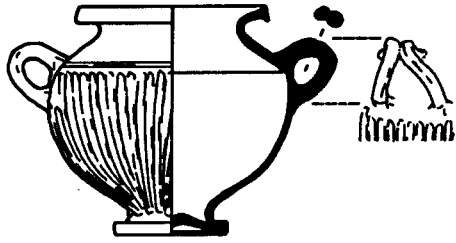
Hellenistic pottery examples. Bowls (nos. 283-288).

210 ANCIENT POTTERY OF TRANSJORDAN

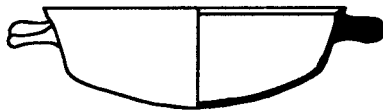
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
289	Bowl (goblet)	Open, footed	very small	deep	<i>Technique: Manufacture: Wheelmade; Firing: Orange pink; Surface Treatment: Luster: Dull on ext.; Painting: Matte on int.; Rouletting; Comments: Vessel Parts: 2 broken handles; Vessel Dimension: Ht. 8.5 cm</i>	Petra	Bennett 1973: 131 (fig. 1:1)
290	Bowl (krater)	Open	medium	deep	<i>Technique: Ware: Color: 5YR7/4 (pink); Firing: 3.75 Mohs (medium); Surface Treatment: Slip: 2.5YR5/4 (reddish-brown) on ext./int.; Fluting; Comments: Vessel Dimension: Ht. 15 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 130:1
291	Bowl (casserole)	Open	medium	intermediate	<i>Technique: Ware: Color: light red; Surface Treatment: Wet-smoothing; Comments: Vessel Dimension: Diam. 19 cm</i>	Jarash	Kracling 1938: 563 (fig. 41:29)
292	Bowl (cooking pot)	Open	small	very deep	<i>Technique: Ware: Type: coarse; Color: red; Comments: "Nabataean"; Vessel Parts: Out-turned rim; high collar with lid device; sloping shoulder; rounded base; 2 handles; rim deformed prior to firing; Vessel Dimension: Ht. 13 cm; rim diam. 11 cm</i>	Petra	Hammond 1973: 39: no. 2
293	Bowl (cooking pot)	Open	medium	deep	<i>Technique: Ware: Color: dark red</i>	Tabaqat Fahl (Pella)	Smith, McNicoll, and Hennessy 1981: 16 (fig. 14:6)



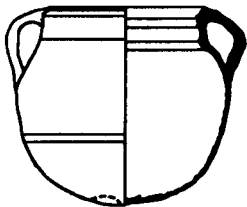
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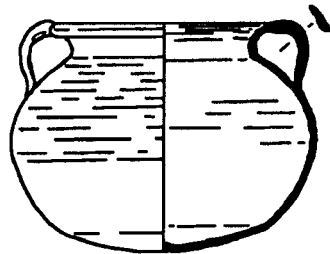
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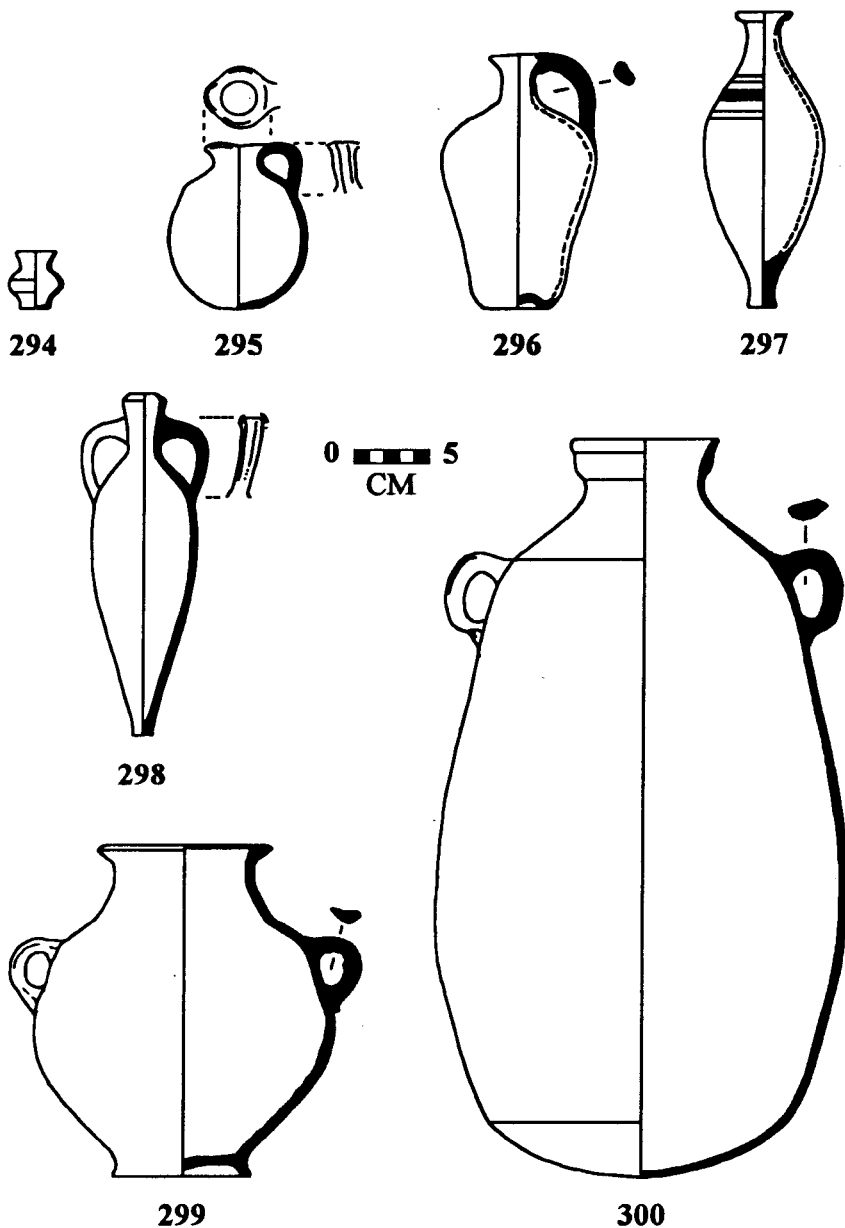


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Hellenistic pottery examples. Bowls (nos. 289-293).

212 ANCIENT POTTERY OF TRANSJORDAN

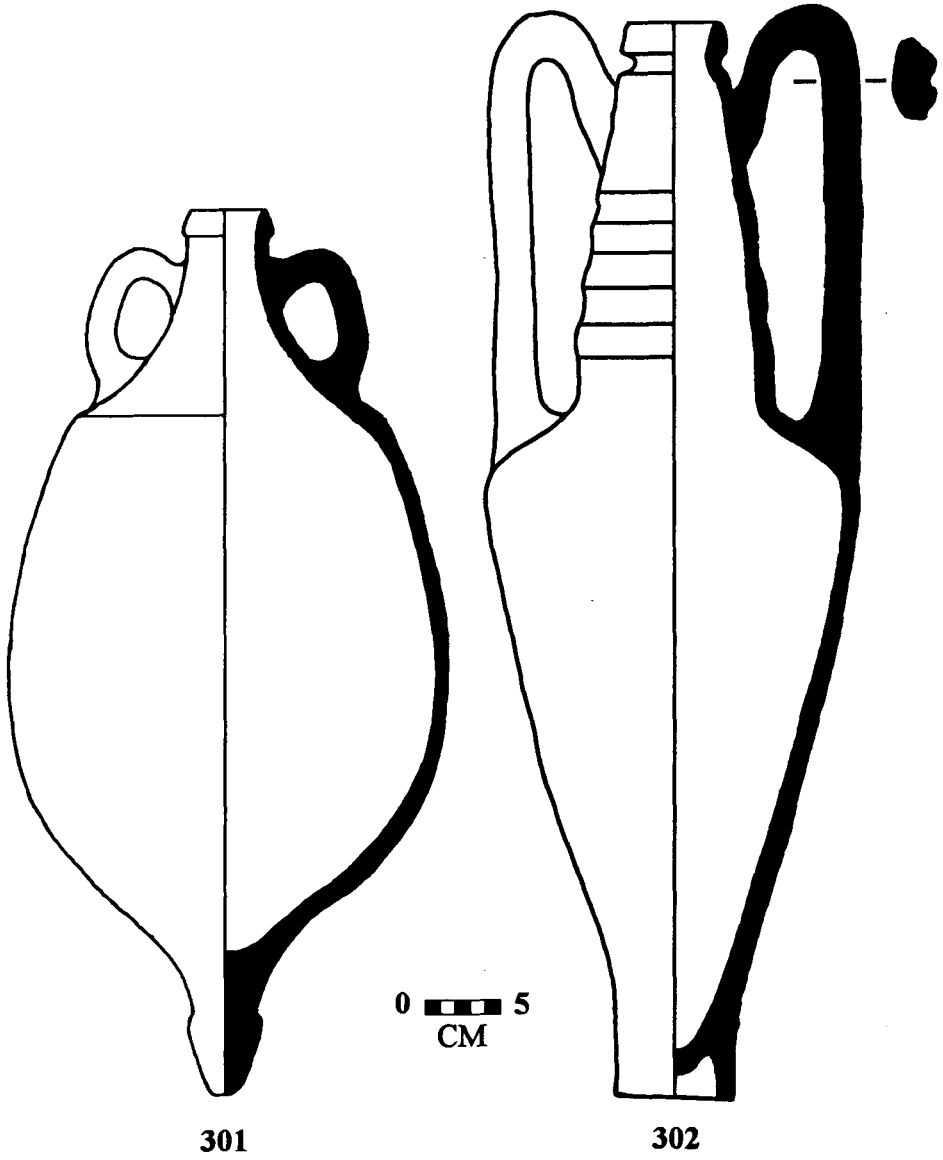
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
294	Jar	Closed	—	very short	<i>Technique: Ware: Color: 7.5YR7/6 (reddish-yellow); Firing: 2.75 Mohs (soft); Comments: Vessel Dimensions: Ht. 4 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 130:7
295	Jug	Closed	—	very short	<i>Technique: Ware: Color: grey; Levigation: Well; Surface Treatment: Molding</i>	Tall as-Sa'idiyah	Pritchard 1985: fig. 19:29
296	Jug	Closed	—	short	<i>Technique: Ware: Color: 5YR6/2 (pinkish-gray); Firing: 2.5 Mohs (soft); Surface Treatment: Slip: 7.5YR7/4 (light brown) on ext.; Comments: Vessel Dimensions: Ht. 17.5 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 131:2
297	Jar (spindle bottle)	Closed	—	short	—	Petra	Smith, McNicoll, and Hennessy 1981: 16 (fig. 14:11)
298	Jar	Closed	—	short	<i>Technique: Ware: Color: ext./int. tan; Inclusions: Many small black grits; Firing: Core tan; Surface Treatment: Slip: Buff</i>	Tall as-Sa'idiyah	Pritchard 1985: fig. 19:27
299	Jar	Closed	—	short	—	Tabaqat Fahl (Pella)	Smith, McNicoll, and Hennessy 1981: 16 (fig. 14:8)
300	Jar	Closed	—	tall	<i>Technique: Ware: Color: 10YR7/2 (light grey); Firing: 2.5 Mohs (soft); Comments: Vessel Dimensions: Ht. 50 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 131:5



Hellenistic pottery examples. Jars (nos. 294, 297-300) and jugs (nos. 295 and 296).

214 ANCIENT POTTERY OF TRANSJORDAN

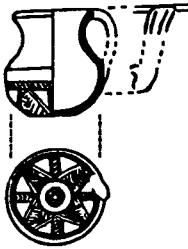
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
301	Jar	Closed	--	tall	--	Jarash	Fisher and McCown 1931: 31 (fig. 3x4)
302	Jar (amphora)	Closed	--	tall	--	Jarash	Fisher and McCown 1931: 31 (fig. 3x1-3)



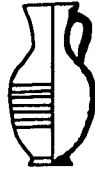
Hellenistic pottery examples. Jars (nos. 301 and 302).

216 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
303	Jug (juglet)	Closed	—	very short	<i>Technique: Ware:</i> Color: black; <i>Inclusions:</i> Some medium black grits; <i>Surface Treatment:</i> Molding	Tall as-Sa'diyah	Pritchard 1985: fig. 19:19
304	Jug (juglet)	Closed	—	very short	<i>Technique: Ware:</i> Type: coarse thin; Color: red; <i>Surface Treatment:</i> Incising; Ribbing; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Wide flaring mouth; 1 handle; ring base; <i>Vessel Dimensions:</i> Body diam. 5.5 cm; ht. 10.5 cm; mouth diam. 3.8 cm	Petra	Hammond 1973: 41: no. 15
305	Jug (alabastron)	Closed	—	very short	<i>Technique: Ware:</i> Color: red; <i>Surface Treatment:</i> Burnishing; <i>Slip:</i> Red brown; <i>Comments:</i> "Edomite"; <i>Vessel Dimensions:</i> Ht. 14 cm	Petra	Hammond 1973: 42: no. 26
306	Jug	Closed	—	short	—	Amman	Zayadine 1978b: 52 (fig. 23:J13370)
307	Jug (tagynos)	Closed	—	—	<i>Technique: Ware:</i> Color: pink; <i>Levigation:</i> Fine well; <i>Inclusions:</i> Tiny icaceous and other inclusions; <i>Firing:</i> 3.5 Mohs; <i>Surface Treatment: Painting:</i> 5YR6/6 with variants 5YR5/8-7/6 (orange-to-black orange) of parallel horizontal lines with swags, garlands, oenochoe and a gazebo/birdcage? on upper body and shoulder; <i>Slip:</i> Thick 10YRB/3 (white) on ext.; <i>Comments: Vessel Parts:</i> Reserved 5YR7/4 on base and body to approx. 1 cm above base; <i>Vessel Dimensions:</i> Original publication unsealed	Tabaqat Fahl (Pella)	McNicol <i>et al.</i> 1984: 71 (fig. 7:7)
308	Jug	Closed	—	short	—	Tabaqat Fahl (Pella)	Smith, McNicol, and Hennessy 1981: 16 (fig. 14:4)
309	Jug	Closed	—	short	<i>Technique: Ware:</i> Type: Metallic coarse terracotta; <i>Inclusions:</i> Coarse, white; <i>Firing:</i> 5 Mohs	Tabaqat Fahl (Pella)	Edwards <i>et al.</i> 1990: 75 (fig. 10:4)



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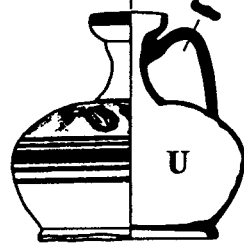
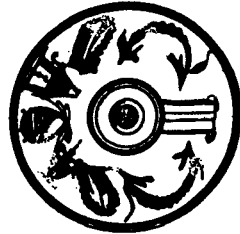
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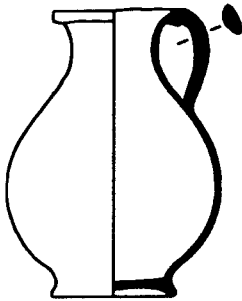
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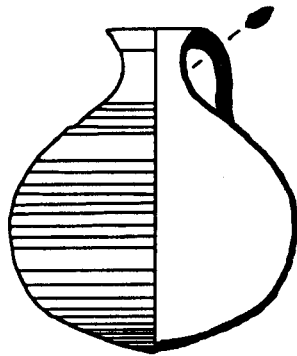
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Hellenistic pottery examples. Jugs (nos. 303-309).

The Roman Period

Roman period ceramic production continued many of the forms and techniques of the Hellenistic period, however, with the beginning of the industrial production of glass and glassware, many forms (cups, plates, jars, juglets, etc.) were made of glass in addition to, or instead of, clay.

Some sites currently associated with the Roman period pottery culture in Transjordan include: Abu Khushayba, aj-Juwaydah, al-Quwaysma, Amman, Amman Airport, Amman Citadel (al-Qal'a), Amman Roman Forum, Aqaba, 'Ara'ir (Aro'er), as-Sadah, as-Salt, az-Zantur, Baq'ah, Bayir Wells, Bayt Zar'a, Dhiban (Dibon), Faris, Faynan, Humayma, 'Iraq al-Amir, Jarash, Jabal Amman, Khirbat adh-Dharih, Khirbat al-Mukhayyat, Khirbat at-Tannur, Khirbat Dohalah al-N'aymah, Khirbat Dor, Luwaybdah, Machaerus, Madaba, Mount Nebo, Petra (Sela'), Quwayliba (Abila), Rajib, Ramm, Sabra, Sadaqa, Rujm al-Malfuf, Salamah, Shuqayra, Tabaqat Fahl (Pella), Tall Abu al-Kharaz, Tall Abu Sarbut, Tall al-'Umayri, Tall as-Sa'idiyah, Tall Hisban, Tall Nimrin, Udhruh, Umm al-Walid, Umm Qays, and Zurrabah, as well as smaller sites along the Wadi al-Badan, Wadi al-Hasa, Wadi 'Isal, Wadi al-Jilat, Wadi Sir, Wadi al-Yabis, and Wadi Ziqlab.

The Early Roman Period

Characterization of this period has been taken from J. Sauer (1973 and 1994), the Kerak Plateau by Brown (1991), and the pottery example site reports, as well as personal communication from project consultants.

Technique. Early Roman ceramics were generally small and delicate, reminiscent of Hellenistic antecedents. **Ware:** Ware colors included light buff, tan, orange, pink, reddish-yellow, deep red, and grey. Early Roman ware color was less consistent than that of Nabataean fabrics. **Terra Sigillata** ware (Eastern Sigillata A) was characterized by a glossy mottle red-orange surface slip. *Terra sigillata* jugs had rounded lip and everted rim profiles. Closed forms of *terra sigillata* were not as common as plates, bowls, and other open vessels. (Brown 1991: 213). There is currently no evidence for Eastern Sigillata A in Transjordan after end of 1st century A.D. (Brown 1991: 212). **Inclusions and Levigation:** Paste quality was very good. White inclusions were characteristic of cooking pot fabrics. **Manufacturing:** Early Roman vessel walls were characteristically thin due to their manufacture on a weighted potter's wheel, however, not as thin as Nabataean fine ware. **Firing:** Firing was thorough, although jars sometimes exhibited a "sandwich" grey core.

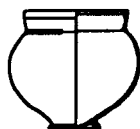
Surface treatment. **Slipping:** Slip colors included red or reddish-brown, light beige, and white. **Painting:** Red painted exterior rim and dripped red paint on interior were common. Splashed exterior red paint was more common among Early Roman than Nabataean vessels. **Glazing:** Pinkish-brown slip glazing was sometimes applied. **Incising:** Some ribbing was utilized.

Forms (pottery examples 310-334). **Bowls:** Bowl forms included bowls, cooking pots, footed bowls, kraters, and platters. Bowl lip profiles included flattened, rounded, thickened, and thinned styles. Bowl rim profiles included doubled, flattened, and thickened styles. Bowl rim inflections included angular, bi-angular, curved, and straight. Bowl wall profiles included biconical, conical, and globular. Early Roman bowls with globular wall profiles and a variety of incurving rim inflections were a development of the Hellenistic "hemispherical" bowl. Typical cooking pots had grooved rims and biconical wall profiles. Cooking pots with straight rim inflections were probably derived from the sloping rim of the Hellenistic period. Coarse brick red ware mixed with small white inclusions was typical of Early Roman cooking pot fabric. The open cooking pan form came into use along with a closed cooking pot and continued into the Late Roman. Kraters typically had "S"-curved wall profiles. **Jars:** Jar forms included amphorae, amphoriskoi, bottles, jars, storage jars, and unguentaria. Jar lip profiles include flattened, rounded, squared, and thickened styles. Jar rim profiles included flattened, pinched, and thickened styles. Jar rim inflections included angular, curved, and straight styles. Jar wall profiles globular and piriforms styles. Jar neck profiles included conical, curving, and cylindrical styles. Tall-necked storage jars with a groove or ridge at the bottom of the neck came into use at the beginning of 1st century A.D. (Brown 1991: 213). **Jugs:** Jug forms included juglets and jugs. Jug lip profiles were generally rounded. Jug rim profiles included flattened and pinched styles. Jug rim inflections included angular and curved styles. Jug wall profiles were generally globular or piriform. Jug neck profiles included conical, curving, and cylindrical styles. Globular juglets with various rim styles (derived from Hellenistic precursors) were common in the Early Roman period. **Miscellaneous vessels:** Miscellaneous forms included Herodian lamps, lids, and jar stands. The straight-edged, thinned, cooking pan lid developed along with the cooking pan. **Vessel parts:** Bases were normally string-cut. Juglets had small flattened handles from body-to-rim and body-to-neck.

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
310	Bowl	Open	very small	intermediate	<i>Technique: Ware:</i> Color: red; <i>Inclusions:</i> Few white limestone grits; <i>Firing:</i> Even; <i>Surface Treatment: Incising:</i> Grooving below ext. edge of rim; <i>Slip:</i> Creamy on ext.; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Everted rim; short bulging neck; small strap handle from rim-to-shoulder; rounded shoulder with squat body; uneven disk base with traces of string cutting; <i>Vessel Dimensions:</i> Ht. 5.0 cm; mouth diam. 5.3 cm	Petra	Khairy 1987: 177 (fig. 9:10)
311	Bowl	Open	very small	deep	<i>Technique: Ware:</i> Type: sandy clay; Color: salmon red; <i>Inclusions:</i> Fine chalk; <i>Surface Treatment: Burnishing:</i> Wheel burnishing on ext.; <i>Comments:</i> Possible "Nabataean"; <i>Vessel Parts:</i> Scrape marks on ext. neck, under part of ext. end on base; ring base; <i>Vessel Dimensions:</i> Diam. 3.4 cm	Khirbat Dor	Weippert 1979: 96 (fig. 4:15)
312	Bowl	Open	very small	intermediate	<i>Technique: Ware:</i> Color: pinkish; <i>Inclusions:</i> Small grits; <i>Surface Treatment: Incising:</i> On body; <i>Comments:</i> Possible "Nabataean"; <i>Vessel Parts:</i> Wide flaring-out rim; ring base; <i>Vessel Dimensions:</i> Diam. 5.5 cm; ht. 6.5 cm	Sadaqa	Kurdi 1972: 164 (pl. II:22)
313	Bowl	Open	medium	shallow	<i>Technique: Ware:</i> Type: fine; Color: red; <i>Firing:</i> Hard, even; <i>Surface Treatment: Fluting; Slip:</i> Dark red; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Globular wall profile	Petra	Khairy 1983: 23 (fig. 8:57)
314	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: 7.5YR8/4 (pinkish-tan) <i>Manufacture:</i> Wheelmade; uneven; <i>Surface Treatment: Incising:</i> Ribbing on int.; <i>Slip:</i> 5YR5/8 (reddish-grey) on int./ext.; evidence of small drops of 2.5YR 5/6 (reddish-brown) on ext.; <i>Comments:</i> <i>Vessel Parts:</i> Incurved rim inflection; V-shaped wall profile; small string-cut base; <i>Vessel Dimensions:</i> Base diam. 4.7 cm; rim diam. 13.6 cm; max. ht. 7.5 cm	Qirwaytiba (Abila)	Mare 1985: 233 (fig. 10:3)
315	Bowl (cooking pot)	Open	small	very deep	<i>Technique: Ware:</i> Color: red; <i>Surface Treatment: Incising:</i> Ribbing and shaving; <i>Slip:</i> Light beige; <i>Comments:</i> <i>Vessel Parts:</i> Inverted rim with lid device; flat, string-cut base; single loop handle; <i>Vessel Dimensions:</i> Max. ht. 11 cm; rim diam. 10 cm	Petra	Hammond 1973: 39: no. 3



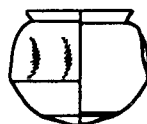
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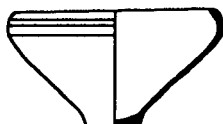
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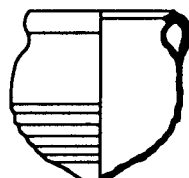
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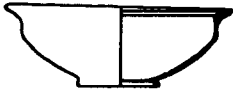
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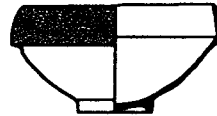
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Early Roman pottery examples. Bowls (nos. 310-315).

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
316	Bowl	Open	large	intermediate	<i>Technique: Ware:</i> Type: fine <i>Comments:</i> "Nabataean"	Petra	Khairy 1983: 23 (fig. 6:40)
317	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: ext./int salmon red; <i>Inclusions:</i> Fine chalk; <i>Firing:</i> Hard; core yellowish; <i>Surface Treatment: Burnishing:</i> Bottom third of ext. and base with scraper; <i>Painting:</i> Yellow rim with top edge black; <i>Slip:</i> Ext. salmon red; <i>Comments:</i> Possible "Nabataean"; <i>Vessel Parts:</i> Ring base; <i>Vessel Dimensions:</i> Diam. 5.1 cm	Khirbat Dor	Weippert 1979: 96 (fig. 4:11)
318	Bowl	Open	small	intermediate	—	Jarash	Fisher and McCown 1931: 53 (pl. 12:65)
319	Bowl	Open	very small	intermediate	—	Qurwayliba (Abila)	Fuller 1987: 436 (fig. 62:B)
320	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: pinkish-red; <i>Firing:</i> Even; <i>Surface Treatment: Painting:</i> Brownish-on int.; <i>Slip:</i> Dark pinkish-engage with cream-colored around ext. rim; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Inverted rim; curved base; <i>Vessel Dimensions:</i> Diam. 18.0 cm; ht. 4.3 cm	Petra	Khairy 1987: 173 (fig. 5)
321	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: pinkish-red; <i>Levigation:</i> Well; <i>Firing:</i> Even; <i>Surface Treatment: Incising:</i> Spiral wheel finish on base; <i>Painting:</i> Int. 3 zone patterns; <i>Slip:</i> Ext. yellowish-white; <i>Comments:</i> <i>Vessel Parts:</i> Hemispherical wall profile; low ring base; <i>Vessel Dimensions:</i> Diam. 11.3 cm; ht. 4.4 cm	Petra	Khairy 1987: 175 (fig. 7:9)
322	Bowl (plate)	Open	medium	shallow	<i>Technique: Ware:</i> Type: fine; <i>Comments:</i> "Nabataean"	Petra	Khairy 1983: 23 (fig. 6:39)
323	Bowl (platter)	Open	large	shallow	<i>Technique: Ware:</i> Type: Eastern terra sigillata; Color: pinkish-yellow; <i>Firing:</i> Even; <i>Surface Treatment: Glaze:</i> Pinkish-brown	Petra	Horsfield and Horsfield 1940: 129 (fig. 10:86)



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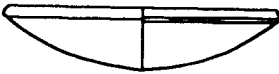
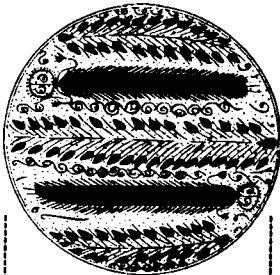
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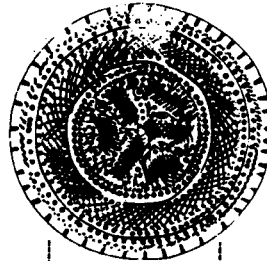
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Early Roman pottery examples. Bowls (nos. 316-323).

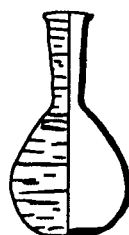
No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
324	Jar (bottle)	Closed	—	very short	Technique: <i>Ware:</i> Color: ext. 10R5/6 (red); <i>Inclusions:</i> Small white grits; <i>Manufacture:</i> Wheelmade; <i>Surface Treatment:</i> <i>Incising:</i> Horizontal ribbing from shoulder-to-base; <i>Comments:</i> <i>Vessel Dimensions:</i> Max. ht. 7.1 cm; max. diam. 4.7 cm; rim diam. 2.4 cm	Quwayliba (Abila)	Mare 1984: 51 (fig. 9:45)
325	Jar (unguentarium)	Closed	—	very short	Technique: <i>Ware:</i> Color: 2.5SYR.6/8 (light red); <i>Surface Treatment:</i> <i>Incising:</i> Ribbing on body; <i>Comments:</i> <i>Vessel Parts:</i> Long neck; everted rim; flat string-cut base; <i>Vessel Dimensions:</i> Ht. 13.5 cm	Bayt Zar's	Khadija 1974: 160 (fig. 2:7)
326	Jar (piriform bottle)	Closed	—	short	Technique: <i>Ware:</i> Color: reddish-yellow; <i>Inclusions:</i> Sparse grits; <i>Manufacture:</i> Wheelmade; <i>Surface Treatment:</i> <i>Burnishing:</i> <i>Incising:</i> Horizontal ribbing smoothed by burnishing; <i>Comments:</i> <i>Vessel Parts:</i> Flattened rim profile; <i>Vessel Dimensions:</i> Max. ht. 15.1 cm; max. diam. 8.2 cm; rim diam. 3.8 cm	Quwayliba (Abila)	Mare 1984: 51 (fig. 9:14)
327	Jar (cooking pot)	Closed	—	short	—	Sadeh	Lindner <i>et al.</i> 1988: 93 (fig. 10:1)
328	Jar	Closed	—	small	Technique: <i>Ware:</i> Color: 5YR.6/8 (light red); <i>Surface Treatment:</i> <i>Incising:</i> Ribbing on body; <i>Comments:</i> <i>Vessel Parts:</i> Ring base; everted rim; short neck; <i>Vessel Dimensions:</i> Ht. 17 cm; mouth diam. 11.5 cm	Bayt Zar's	Khadija 1974: 160 (fig. 2:2)
329	Jar	Closed	—	short	Technique: <i>Ware:</i> Color: red; <i>Inclusions:</i> Fine to medium quartz and chalk; <i>Surface Treatment:</i> <i>Slip:</i> ext. yellow; <i>Comments:</i> Possible "Nabataean"; <i>Vessel Parts:</i> Ring base	Khirbat Dor	Weippert 1979: 100 (fig. 5:17)
330	Jar (amphoriskos)	Closed	—	tall	Technique: <i>Ware:</i> Color: 10YR.7/3; <i>Levigation:</i> Medium; <i>Firing:</i> 3.75 Mohs	Tabaqat Fahl (Pella)	Smith and Day 1989: pl. 45:15
331	Jar	Closed	—	tall	—	Quwayliba (Abila)	Fuller 1987: 440 (fig. 66)



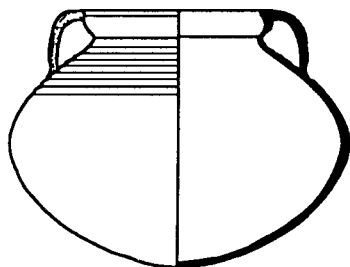
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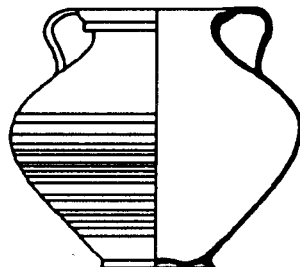
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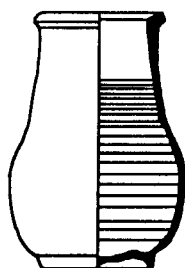


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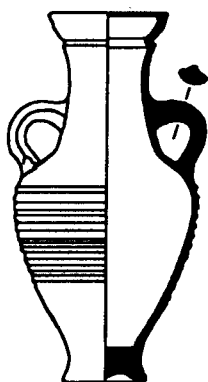


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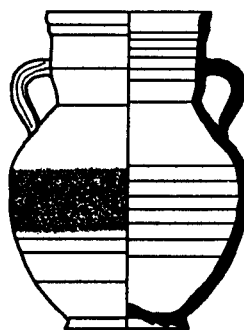
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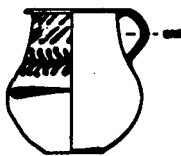
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Early Roman pottery examples. Jars (nos. 324-331).

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
332	Jug	Closed	—	very short	<i>Technique: Ware:</i> Color: pinkish; <i>Inclusions:</i> Small grits; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Globular wall profile; bicurving neck profile; 1 handle attached to upper part of body; small ring base; <i>Vessel Dimensions:</i> Ht. 10 cm	Sadaqa	Kurdi 1972: 164 (pl. II:1)
333	Jug	Closed	—	very short	<i>Technique: Ware:</i> Color: pinkish-red; <i>Inclusions:</i> Few small grits; <i>Firing:</i> Even; <i>Surface Treatment:</i> Burnishing; <i>Inclining:</i> Combing on ext.; <i>Slip:</i> Dark red engobe on ext.; <i>Comments:</i> "Nabataean"; <i>Vessel Parts:</i> Wide mouth with everted flattened rim; flattened vertical handle from rim-to-shoulder, neck slopes down towards globular body with ring base; <i>Vessel Dimensions:</i> Ht. 9.7 cm; mouth diam. 6.6 cm	Petra	Khairy 1987: 177 (fig. 9:11)
334	Jug	Closed	—	very short	<i>Technique: Ware:</i> Color: 7.5YR8/2 (pinkish-white); <i>Manufacture:</i> Wheelmade; <i>Comments:</i> <i>Vessel Parts:</i> Cylindrical wall profile with inverted base and bottom; sloping shoulder merging with a gentle-flaring neck with thickened inverted rim; round and slightly flattened handle from rim-to-shoulder; <i>Vessel Dimensions:</i> Max. rim diam. 3.2 cm; max. ht. 12.6 cm; max. diam. 5.7 cm	Qarwayliba (Abila)	Mare 1985: 233 (fig. 10:4)



332



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334



Early Roman pottery examples. Jugs (nos. 332-334).

The Hellenistic-Roman-Byzantine Period, "Nabataean" Culture

The Nabataean cultural ceramic influence may be traced from the Hellenistic period, but especially from the Early Roman period, into the Byzantine period, although

there are distinctions between earlier and later Nabataean wares.

Nabataean forms pretty much follow Hellenistic and Roman characteristics, but what makes it most distinctive is the thin, hard ware and the painted figures and designs (Lapp 1996, personal communication).

This description is from Petra (Hammond, 1973: 27-50; Khairy, 1987: 167-181), Homès-Fredericq and Franken (1986), and the contextual study of the Kerak Plateau by Brown (1991).

Technique. Wares: The main Nabataean ware was "egg-shell" thin. Wares were colored black, black-red, red, orange, tan, and may range from light pinkish-to-dark red pinkish or purplish with a light grey core. Typical Nabataean color was more or less dark salmon-pink with an irregular red-brown slip. The wares exhibit less variation in color than in any of the preceding periods and may indicate standardized pastes (Brown 1991: 209). *Inclusions:* Vessels were coarse as well as fine. Thin vessel walls had few visible inclusions. *Levigation:* Clay was well levigated, fine and homogeneous, with strong cohesion. The paste preparation of fine wares was the best, technologically, ever achieved in Transjordan (Brown 1991: 209). *Surface splitting* was rare. *Firing:* Firing was even, generally without core on thin vessel walls. Wall cores, when present, were more often lighter rather than darker. *Manufacturing:* Vessels were made on good wheels which made for little deformation. Vessel walls range from thin-to-coarse, but were characteristically thin. Walls were shaved in order to gain the desired thinness.

Surface treatment. Slipping: No real slip was utilized except for an occasional creamy-whitish band around the exterior of some bowl rims and a self-same slip on various vessels. Some white (-to-cream) or red slip may occur. *Wash:* Red wash was applied. *Painting:* Painted decoration ranged from pink-to-reddish-brown-to-black, with some yellow. Dark reddish painted decoration occurs mainly on the inside of bowls. Motifs of the decoration included lines, spots, tendrils, palmettes, pomegranates, and others. Painting was done when the bowls were bone-dry and prior to firing.

Fluting: Fluting was evidenced on some vessels. *Impressing:* Impressed designs, originally introduced in the Hellenistic period, included dots, palmettes, triangles, scrolls, and egg-shapes impressed with a stamp into fresh clay. Rouletted designs, rolled on wet clay by a small wheel or

cylindrical tool, were located on the vessel body and/or base. Both impressed designs and rouletting were applied on cups, bowls, goblets, and juglets. **Incising:** Combing, grooving, and ribbing were decorative incisions. Finger-grooving was frequent on pithos handles.

Forms (Hellenistic pottery examples: 275-278, 280, 281, 284, 292, and 304; Early Roman pottery examples: 310-313, 316, 317, 320, 322, 329, 332, and 333; Late Roman pottery example: 353). **Bowls:** Bowl forms included bowls, chalices, cooking pots, cups, kraters, and plates. Bowl lip profiles included flattened, rounded, squared, and thinned styles. Bowl rim profiles included doubled and flattened styles. Bowl rim inflections included angular, bi-angular, and straight styles. Bowl wall profiles included biconical, conical, and globular styles. Bowls imitated Hellenistic forms with ring bases and globular or biconical bodies. Some bowls had biconical bodies with flat string-cut bases. Cooking pots had very thin walls. Cooking pots had high or narrow collars, ribbed bodies, loop or strap handles, rounded bottoms, with or without lid devices, and flat string-cut bases. **Jars:** Jar forms included jars, storage jars, and unguentaria. Unguentaria were small bottles with an ovoid body, were often ribbed with a long tubular neck, and finished with a flattened lip and with flat, rounded, or conical (often string-cut) bases. **Jugs:** Jug forms included alabastrons, juglets, and jugs. Alabastrons were common. Juglets sometimes had a globular body, a ring base, and a bicurving neck profile. Jugs could be one-handed or loop-handled. The jug type with a wide belly and handle connecting the rim or middle of the neck to the body is reminiscent of the Hellenistic form. **Miscellaneous vessels:** Miscellaneous forms included lamps. Lamps sometimes had molded or incised volutes. **Vessel parts:** Bases included flat (string-cut), footed, and ring (the typical Nabataean base). Ring bases were higher or lower (possibly with sloping centers). Handles included loop or strap. Chalices had footed bases. Handles were formed of multiple rolls of clay pressed together.

The Late Roman Period

Late Roman pottery displayed influences by, as well as differences from, Early Roman antecedents (see the discussion: Brown 1991: 214, 217). As during the Early Roman period, due to the industrial production of glass and glassware, many forms (cups, plates, jars, juglets, etc.) were made of glass in addition to, or instead of, clay. Late Roman period pottery was a continuation of Early Roman vessel forms and similar ceramic technologies.

Ware, not morphology, was the most consistent difference between Late Roman and Early Roman ceramics. Unique Late Roman stylistic attributes included finishing techniques, details of vessel form, and influence of *terra sigillata* decorative styles. Stylistic attributes such as notched bowl rims, grooved cooking pot rims, and pinched handles were more characteristic of Late Roman rather than Early Roman vessels. These traits formed a distinctive blend that characterized the Late Roman ceramic corpus in Transjordan. Characterization of this period has been taken from J. Sauer (1994 and 1973), the contextual study of the Kerak Plateau by Brown (1991), and personal communication from project consultants.

Technique. Ware colors, thickness, and surface treatments contrast with Early Roman equivalents. **Ware:** Ware colors were cream, yellow-brown, or grey, more frequently, pink, red, or orange. **Inclusions and Levigation:** Paste preparation during the Late Roman period was slightly coarser than during the Early Roman period. **Manufacturing:** Late Roman ceramic technology can be traced directly to Hellenistic and Nabataean manufacturing styles. The clearest indications of mass-production in Transjordan during the Hellenistic-Roman periods were found among Late Roman assemblages (Brown 1991: 217). Late Roman manufacturing techniques showed no technological improvement over the Early Roman period. Late Roman vessel walls were notably thicker. **Firing:** Late Roman firing was similar to Early Roman.

Surface treatment. **Slipping:** Slip colors included red and red-orange as principal treatments, however beige was used as well. Textures ranged from glossy to duller matte tones. Cream-colored wares usually had very bright orange slip that was mottled in tones of burnt orange and brown and highly indicative of Transjordan during the Late Roman period (Brown 1991: 215). Band-slipping was utilized.

Impressing: Deep finger impressions marked the bases of handles or lids. **Incising:** Rouletting (irregular horizontal bands of short wedge-shaped incisions) and ribbing continued from the previous period.

Forms (pottery examples 335-359). Late Roman vessel forms were a continuation of Early Roman forms, distinguished not by shape, but by wall thickness, firing, and surface treatment. Late Roman Transjordanian ceramic attributes (grooved-rim cooking pot, notched-rim bowls, and pinched handles) were not common in Palestine (Brown 1991: 217). Many cups, plates, and platters were made of glass during the Late Roman period.

230 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
335	Bowl	Open	small	intermediate	—	Jarash	Fisher and McCown 1931: 53 (pl. 12:81)
336	Bowl	Open	small	intermediate	—	Jarash	Fisher and McCown 1931: 53 (pl. 12:75)
337	Bowl	Open	small	intermediate	—	Jarash	Fisher and McCown 1931: 53 (pl. 12:65)
338	Bowl	Open, footed	very small	intermediate	—	Jarash	Smadeh, Rasson, and Seigne 1992: 268 (fig. 5:F)
339	Bowl (cooking pot)	Open	very small	deep	Comments: <i>Vessel Parts</i> : Piniform wall profile	Jarash	Fisher and McCown 1931: 53 (pl. 12:37)
340	Bowl (cooking pot)	Open	very small	deep	Comments: <i>Vessel Parts</i> : Globular wall profile	Jarash	Fisher and McCown 1931: 53 (pl. 12:35)
341	Bowl	Open	very small	very deep	Technique: <i>Ware</i> : Color: red; <i>Surface Treatment</i> : <i>Incising</i> : Ribbing; <i>Slip</i> : Beige; <i>Comments</i> : <i>Vessel Parts</i> : String-cut base; <i>Vessel Dimensions</i> : Max. ht. 9.8 cm; rim diam. 8 cm	Petra	Hammond 1973: 40: no. 7
342	Bowl (plate)	Open	medium	shallow	—	Jarash	Seigne 1986: 68 (fig. 17:2)
343	Bowl	Open	small	intermediate	Comments: <i>Vessel Parts</i> : 1 handle	Petra	Gerber and Brogi 1995: 665 (fig. 11:2)
344	Bowl (cooking pot)	Open	large	deep	Surface Treatment: <i>Incising</i> : Horizontal revolving grooving int./ext.; <i>Comments</i> : <i>Vessel Parts</i> : Top with two handles; globular wall profile; straight rim with outer slanting; neck distinct from vessel body; <i>Vessel Dimensions</i> : Ht. 21.5 cm; max. diam. 25 cm; mouth diam. 13 cm	Petra	Stucky <i>et al.</i> 1990: 261 (fig. 5:E)
345	Bowl	Open	large	intermediate	Comments: <i>Vessel Parts</i> : Flattened everted rim	Jarash	Fisher and McCown 1931: 53 (pl. 12:55)



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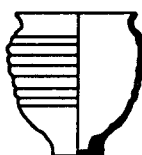
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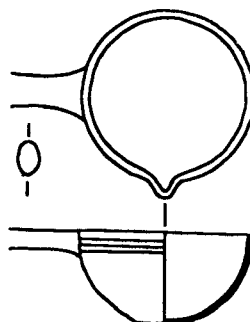
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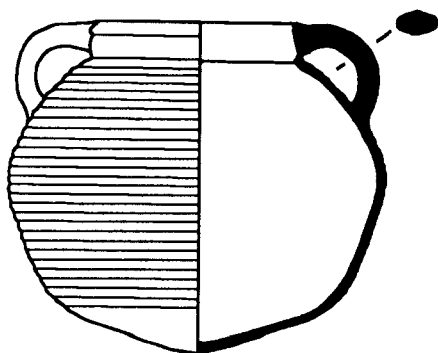
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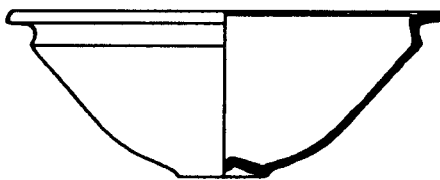
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Late Roman pottery examples. Bowls (nos. 335-345).

232 ANCIENT POTTERY OF TRANSJORDAN

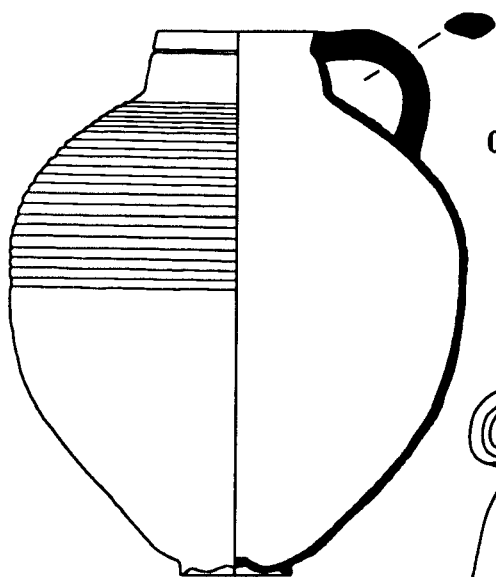
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
346	Lid	---	---	---	Comments: <i>Vessel Parts:</i> Knob-like end; <i>Vessel Dimensions:</i> Ht. 3 cm; inner diam. 10.8 cm; max. diam. 11.6 cm	Petra	Stucky <i>et al.</i> 1990: 269 (fig. 8:L)
347	Lid	---	---	---	Technique: <i>Ware:</i> Type: coarse terracotta	Tabaqat Pahl (Pella)	McNicol, Smith, and Hennessy 1982b: pl. 137:9
348	Jar (bottle)	Closed	---	very short	Technique: <i>Ware:</i> Color: brown; Surface Treatment: <i>Incising:</i> Slight ribbing on lower half; Comments: <i>Vessel Parts:</i> Ovoid wall profile; curving neck; thickened rim; circular and flat base slightly raised; <i>Vessel Dimensions:</i> Mouth diam. 3.4 cm; ht. 11 cm	Tall Fayyal	Pahrnbo <i>et al.</i> 1993: 103 (fig. 9:1)
349	Jar	Closed	---	tall	Surface Treatment: <i>Incising:</i> Horizontal rotating grooving through middle of ext.; Comments: <i>Vessel Parts:</i> Ring base; straight rim inflection with inner thickened rim profile; neck distinct from vessel body; <i>Vessel Dimensions:</i> Ht. 35.4 cm; max. diam. 30 cm; mouth diam. 10 cm	Petra	Stucky <i>et al.</i> 1990: 263 (fig. 6:M)
350	Jar	Closed	---	very short	Technique: <i>Ware:</i> Color: red; Surface Treatment: <i>Incising:</i> Ribbing; Comments: <i>Vessel Parts:</i> Globular wall profile; slightly everted rim; omphalos base; 2 strap handles; <i>Vessel Dimensions:</i> Ht. 10 cm	Jarash	Gawlikowski and Musa 1986: 146 (fig. 6:5)
351	Jar	Closed	---	tall	---	Tall Abu Sarbut	Haas, LaCro, and Steiner 1992: 337 (fig. 6)



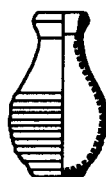
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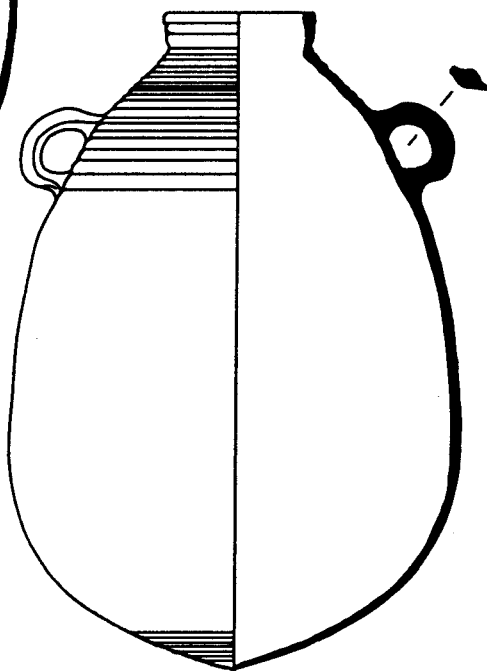
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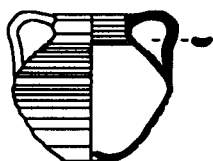
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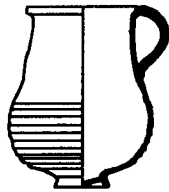
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Late Roman pottery examples. Lids (nos. 346 and 347) and jars (nos. 348-351).

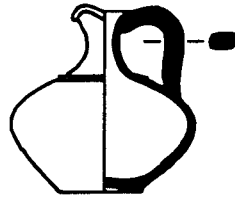
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
352	Jug (juglet)	Closed	—	very short	<i>Technique: Ware: Color: brown red; Surface Treatment: Incising: Slight ribbing; Comments: Vessel Parts: Globular wall profile; short and narrow neck; flattened rim; flat base; Vessel Dimensions: Mouth diam. 4.2 cm; ht. 8.8 cm</i>	Tall Faysal	Palumbo <i>et al.</i> 1993: 103 (fig. 9:6)
353	Jug (juglet)	Closed	—	very short	<i>Technique: Ware: Color: red; Comments: "Nabataean"; Vessel Parts: 1 handle; small ring base; Vessel Dimensions: Max. ht. 12.4 cm; rim diam. 8.5 cm</i>	Petra	Hammond 1973: 40: no. 8
354	Jug (juglet)	Closed	—	very short	—	Jarash	Fisher and McCown 1931: 53 (pl. 12:22)
355	Jug	Closed	—	very short	<i>Technique: Ware: Color: light orange; Surface Treatment: Incising: Ribbing; Comments: Vessel Parts: Ovoid wall profile; conical neck; thinned rim; handle from neck-to-shoulder; circular and flat base slightly raised; Vessel Dimensions: Mouth diam. 3 cm; ht. 13.8 cm</i>	Tall Faysal	Palumbo <i>et al.</i> 1993: 103 (fig. 8:2)
356	Jug (flask)	Closed	—	short	<i>Technique: Ware: Color: 10YR8/3 (very pale brown); Surface Treatment: Ribbing: Concentric; Comments: Vessel Parts: Lentoid wall profile; rim slightly everted; Vessel Dimensions: Rim diam. 4.8 cm; ht. 19.5 cm; max. diam. 11.9 cm</i>	Petra	Stucky <i>et al.</i> 1991: 254 (fig. 3:10)
357	Jug (juglet)	Closed	—	short	<i>Technique: Ware: Color: orange; Firing: Core grey; Surface Treatment: Rouletting: Three horizontal bands on upper half of body; Comments: Vessel Parts: Curving neck; pronounced shoulder; wide ring base; flattened everted rim; strap handle from below rim-to-shoulder</i>	Petra	Khairy 1983: 28 (fig. 11:75)
358	Jug	Closed	—	short	<i>Technique: Ware: Color: 5YR7/6; Levigation: Moderate; Firing: 2.25 Mohe (soft); Surface Treatment: Slip: 10YR8/3 on ext.; Comments: Vessel Dimensions: Ht. 19 cm</i>	Tabaqat Fahl (Pella)	McCnicoll, Smith, and Hennessy 1982b: pl. 133:17
359	Jug	Closed	—	short	<i>Surface Treatment: Incising: Horizontal rotating grooving on top part of int.; Comments: Vessel Parts: Cylindrical wall profile; straight rim; rounded lip; vertical loop handle; rim and neck of jug do not fit directly on vessel body; Vessel Dimensions: Max. diam. 9.6 cm; mouth diam. 4.4 cm</i>	Petra	Stucky <i>et al.</i> 1990: 261 (fig. 7:B)



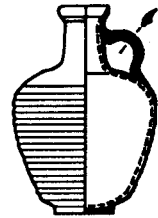
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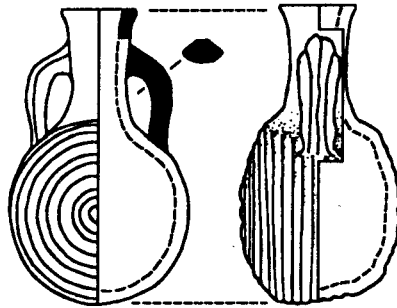


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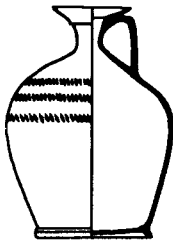


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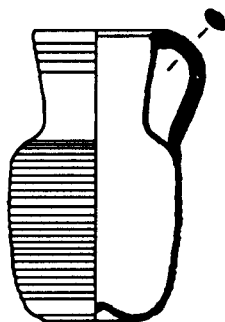
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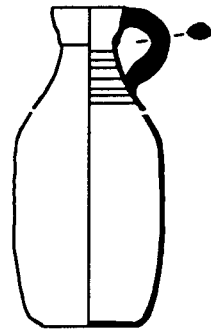
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359

Late Roman pottery examples. Jugs (nos. 352-359).

Bowls: Bowl forms included bowls, casseroles, cooking pots, footed bowls, plates, and platters. Bowl lip profiles included rounded, squared (a Late Roman indicator in Transjordan), thickened, and thinned styles. Bowl rim profiles included doubled, flattened, pinched, and thickened styles. Bowl rim inflections included angular, bi-angular, curved, and straight styles. Bowl wall profiles included biconical, conical, cylindrical, globular, and piriform styles. The shallow, sloping plate/platter with rouletted rim and body was characteristic of *terra sigillata* and its local imitations (Brown 1991: 215). Cooking pot ware was usually yellow-brown color and thicker and softer than Early Roman ware. Globular closed cooking pot form was generally comparable to Nabataean and Early Roman and was characterized by grooved rim, shallow, gentle body ribbing and two loop handles with pinched profiles, while the open cooking pot or casserole (which was used during the Early Roman period—though not as common as globular closed cooking pot) became more frequent during the Late Roman period and continued into the Byzantine period (Brown 1991: 216).

Jars: Jar forms included bottles, jars, and storage jars. Jar ware was usually colored dark gray or red. Jar lip profiles were generally thickened. Jar rim profiles were generally thickened. Jar rim inflections were generally straight. Jar wall profiles were generally globular or piriform. Jar neck profiles included conical, curving, and cylindrical styles.

Jugs: Jug forms included flasks, juglets, and jugs. Jug ware was usually colored dark grey or red. Jug lip profiles included flattened, rounded, squared, thickened, and thinned styles. Jug rim profiles included flattened, pinched, and thickened styles. Jug rim inflections included angular, curved, and straight styles. Jug wall profiles included cylindrical, globular, and piriform styles. Jug neck profiles included conical, curving, and cylindrical styles.

Miscellaneous vessels: Miscellaneous forms included lamps and lids. Molded lamps were small and round, with ridges and relief-molded designs surrounding the filling holes which were depressed and medium-sized. Nozzles of lamps were small and handles were grooved. Lids had distinguishable yellow-brown ware and thumb-indented strips or incised bands of finely spaced lines

Vessel parts: Bases included flat (string-cut), omphalos, and stump forms. Late Roman string-cut bases were higher than those of the Early Roman period. Handles included loop, pinched (mostly on cooking vessels), and rounded.

The Byzantine Period

Early Byzantine pottery was directly related to the Late Roman corpus, as was exemplified by a continuation in vessel morphology and surface treatment. As the period progressed,

the ceramic assemblage became increasingly divergent from characteristically Late Roman repertoire. The rising popularity of grey wares, incised and 'pie-crust' decorations, more sharply defined body ribbing on jars and cooking pots, and a growing preference for both light and dark slips, among other traits, became definitive in the characterization of Byzantine pottery (Brown 1991: 224).

Late Byzantine ceramics were a continuation of the Early Byzantine assemblage with new additions and greater variety. Because some forms/wares were utilized throughout the Byzantine period and because the forms were not well enough differentiated stratigraphically to provide an absolutely fixed typology, it is sometimes difficult to delineate Early from Late Byzantine vessels. For this reason, the pottery examples of the Byzantine period are combined into one characterization.

Some of the sites currently associated with the Byzantine period pottery culture include: ad-Dayr (Ma'in), al-Lajjun, Amman, Amman Citadel (al-Qal'a), Amman Roman Forum, Aqaba, 'Ayn Boqaq, Baq'ah, Dayr 'Ayn 'Abata, Dayr 'Alla, Dhiban (Dibon), Faris, Humayma, 'Iraq al-Amir, Jarash, Khirbat al-Kursi, Khirbat al-Mukhayyat, Khirbat as-Samra, Khirbat Dohalah al-N'aymah, Listib, Madaba, Maqabalayn (Meqabelein), Mar Alias, Mount Nebo, Mount Nebo ('Ayn Musa), Mount Nebo (Siyagha), Mukawar, Na'ur, Petra (Sela), Quwayliba (Abila), Rujm al-Malfuf (South), Salamah, Shunat Nimrin, Tabaqat Fahl (Pella), Tall al-'Umayri, Tall as-Sa'idiyah, Tall Fandi, Tall Hisban, Tall Irbid, Tall Nimrin, Tall Siran, Udhruh, Umm ar-Rasas, Umm Qays, and Yasilah, as well as smaller sites along the Wadi al-Hasa, Wadi al-Yabis, Wadi Araba, Wadi 'Isal, Wadi Sir, and Wadi Ziqlab. The following characterization of the Byzantine period has been taken from J. Sauer (1982: 329, 330; 1994: 229), the contextual study of the Kerak Plateau by Brown (1991), and personal communication from project consultants.

Technique. Wares: Wares in the Early Byzantine period were thicker, darker-slipped, and had more diverse fabric colors than in the Late Roman period. Ware colors less commonly included buff, pink, grey, and beige, but were more commonly reddish-orange, red, and black. Fine red wares occurred during the entire Byzantine period. African red slip ware was also extant throughout the period. Grey wares were witnessed in the

Early Byzantine period, but were more indicative of the Late Byzantine. Ware colors during the Late Byzantine period included grey (most typical), deep red, and orange red, as well as a "dark metallic ware" of dark orange or grey-red (*cf.* Sauer 1982: 330, 332). "The fine red wares that gained popularity in the Levant during the Early Byzantine period became more prevalent in Transjordan during the Late Byzantine period" (Brown 1991: 221). **Inclusions and Levigation:** During the Early Byzantine period, inclusions were fine with a few visible particles. Tempering was variable. Red wares were fine tempered. During the Late Byzantine period, clay was generally well prepared. Gritty deep-red fabric was typical of Late Byzantine cooking wares. **Manufacturing:** Although most Early Byzantine vessels were produced on a potter's wheel, there were some handmade vessels. During the Late Byzantine period, ceramic manufacture "may have been less centralized, and correspondingly, there may have been an increase in the number of producers" (Brown 1991: 224). Most Late Byzantine pottery was wheelmade, resulting in very thin profiles. Storage jars were handmade. Lamps were moldmade during both subperiods. **Firing:** Clay firing quality during the Early Byzantine period was variable, but generally excellent. Red wares were thoroughly fired. Firing was generally excellent during the Late Byzantine period, but often some grey cores were evident in thicker profiles.

Surface treatment. **Slipping:** Vessels of the Early Byzantine period had more variety in slips than did those of the Late Roman period. The bright orange and mottled orange-brown tones (prominent in the Late Roman) became darker and more brown with fewer orange tones (Brown 1991: 218). White slip (with a greenish tint) was uncommon. During the Late Byzantine period, slip colors included white-to-cream (associated with red fabrics), red, and grey (to charcoal). "While there [was] no glazing in the Late Byzantine period, there [was] the distinctive burnished, stamped, and rouletted 'red ware,' which [did] not appear in the Umayyad period" (Sauer 1982: 330). **Burnishing:** During the Late Byzantine period, burnishing was utilized on red ware. **Molding:** During the Byzantine period, design molding on lamps portrayed Christian motifs. **Painting:** Large ribbed jars were sometimes painted white during the Byzantine period. During the Late Byzantine period, paint colors included "red, orange, white, grey, and black, with red-orange and black predominating in most regions (although white seems to be common in the far south)" (Sauer 1982: 330). Red painting was uncommon.

Appliqué: Decorative appliqués were used during the Late Byzantine period. **Impressing:** Finger impressing occurred. Rouletting was a common decorative style on bowls during both the Early and Late Byzantine periods. **Incising:** Incising, wavy band-combing, or straight and wavy incised lines were applied in the Early Byzantine period, but became more frequent during the Late Byzantine period. During the Early Byzantine period, “nicking” was applied on jugs and juglets. Ribbing was extremely common during both subperiods. **Indenting:** During the Late Byzantine period, “pie-crust” rims were indented. **Smoothing:** Surface smoothing was sometimes utilized on Byzantine period vessels.

Forms (pottery examples 360-383). **Bowls:** Bowl forms included basins, bowls, casseroles, cooking pots, cups, frying pans, kraters, plates, and platters. Bowl lip profiles included rounded, squared, thickened, and thinned styles. Bowl rim profiles included doubled, flattened, offset, and thickened styles. Bowl rim inflections included angular, bi-angular, and curved styles. Bowl wall profiles included conical, globular, and piriform styles.

The Early Byzantine ceramic corpus included bowls of various sizes. Basins sometimes had incised rims. Bowls with thickened, flattened rims and a distinctive exterior ridge were typical of the Early Byzantine period, continuing from Late Roman. Kraters were thickly-profiled with everted rims. Cooking pots sometimes had orange fabric, coarse texture, and loop handles arching from rim-to-shoulder. Neckless cooking pots with rounded lips and simple rims were apparently derived from Late Roman parallels. The more common necked cooking pots had sharp body ribbing. The Late Byzantine period bowl assemblage was directly related to that of the preceding subperiod. Dark metallic ware bowls “often [had] single wavy line incising, with simple rims and low ring bases” (Sauer 1982: 330).

Cooking vessels included casseroles and frying pans (handled platters).

Casseroles [were] of thin ribbed ware with flat-cut rims, flattened bases, and horizontal loop handles. ... Cooking pots [were] of red-orange or grey-black ribbed ware with sharply everted and angular rims [hole-mouth], rounded or angular bodies with flattened bases, and long vertically-ridged loop handles. ... Cups [were] unribbed, metallic ware and were sometimes horizontally combed, with thin outcurved rims and flat or omphalos bases. ... Kraters and large bowls [were] of red-orange or black ware with rounded or angular thickened rims and sharp, angular shoulders. ... [Frying pans (platters with handles) were of] black ware with distinctive looped ‘wishbone’ handles (Sauer 1982: 330).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
360	Bowl	Open	small	intermediate	—	Siyagha (Mount Nebo)	Schneider 1950: 68 (fig. 6:9)
361	Bowl	Open	very small	intermediate	—	Jarash	Seigne 1986: 73 (fig. 19:1)
362	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: coarse grey; Comments: Vessel Parts: Concave base; conical wall profile; square lip; Vessel Dimensions: Diam. 11 cm; ht. 6 cm</i>	Jarash	Gawlikowski and Musa 1986: 146 (fig. 6:6)
363	Bowl	Open	very small	intermediate	—	Siyagha (Mount Nebo)	Schneider 1950: 114 (fig. 13:8)
364	Bowl	Open	small	intermediate	—	Siyagha (Mount Nebo)	Schneider 1950: 114 (fig. 13:4)
365	Bowl (platter)	Open	large	shallow	—	Jarash	Fisher and McCown 1931: 55 (pl. 14:2)
366	Bowl (plate)	Open	medium	shallow	—	Siyagha (Mount Nebo)	Schneider 1950: 105 (fig. 12:6)
367	Bowl	Open	medium	intermediate	<i>Surface Treatment: Rouletting: 3 rows on ext.; Slip: Red with brown on rim</i>	Khirbat al-Kurni	Tzaferis 1983: 53 (fig. 4:17)
368	Bowl	Open	—	intermediate	<i>Technique: Ware: Color: ext./int. reddish-yellow; Inclusions: Finely mixed with dark grits and lime grits; Firing: Hard; core light brown; Comments: Vessel Dimensions: Original publication unscaled</i>	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 178 (fig. 4:4)
369	Bowl	Open	large	intermediate	<i>Technique: Ware: Color: ext./int. 10YR4/1 (dark grey); Manufacture: Wheelmade; Firing: Core 7.5YR5/0 (grey)</i>	Tall al-'Umayri	Low 1991: 224 (fig. 8.24:14)



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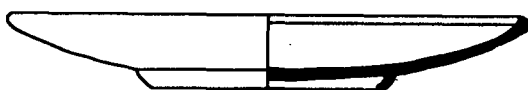
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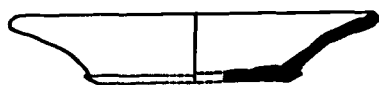
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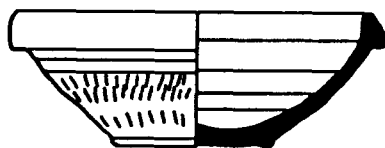
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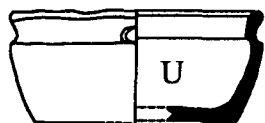
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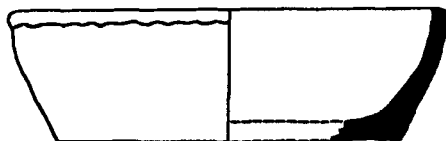
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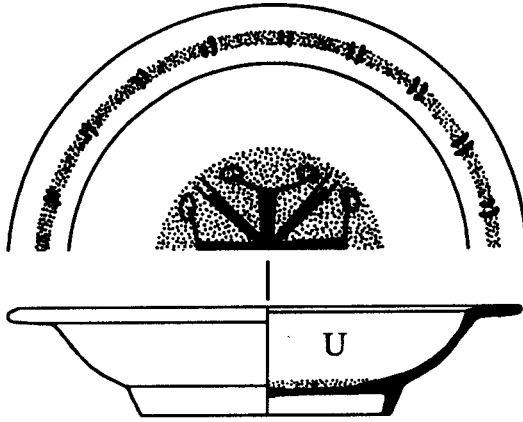
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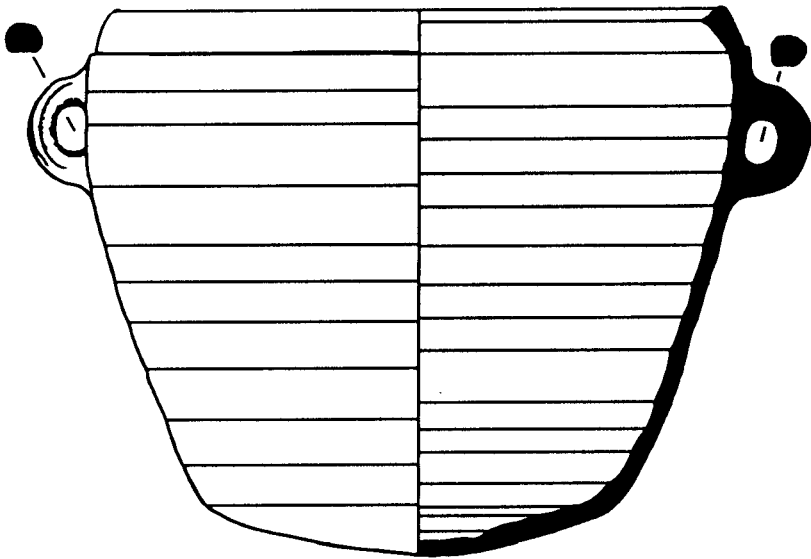
Byzantine pottery examples. Bowls (nos. 360-369).

No.	Reef (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
370	Bowl	Open	large	intermediate	<i>Technique: Ware: Color: 2.5YR5/6-to-2.5YR6/6-8; Levigation: Fine; Inclusions: Small-to-medium chert and limestone; Firing: 3.75-5.5 Mohs; Surface Treatment: Painting: 10R3/6-4/4-6 (red) and 10YR8/2-4 (yellow) to white; Christian cross design; Slip: Self-same</i>	Tabaqat Fahl (Pella)	Smith and Day 1989: pl. 47:7
371	Bowl (crater)	Open	large	deep	<i>Technique: Ware: Color: buff pink; Surface Treatment: Smoothing: Ext.</i>	Khirbat al-Kurni	Tzaferis 1983: 55 (fig. 5:12)



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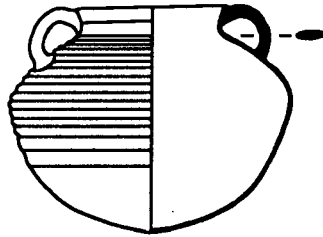
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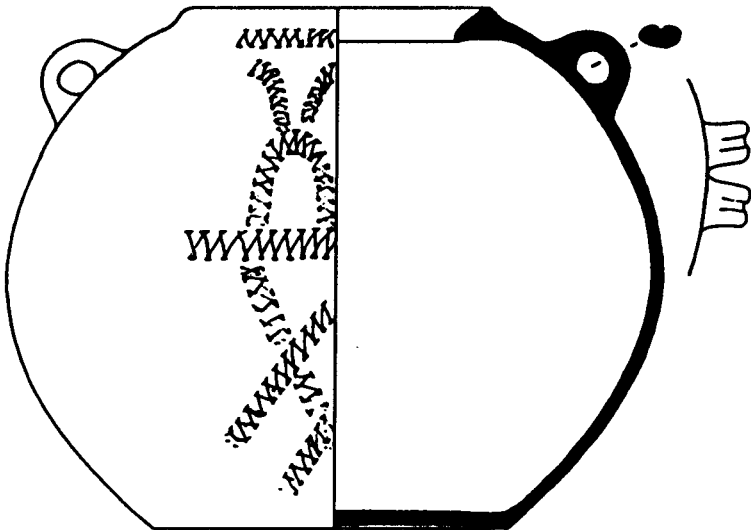
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Byzantine pottery examples. Bowls (nos. 370 and 371).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
372	Jar (cooking pot)	Closed	—	short	<i>Technique: Ware: Color: ext. 10R5/4 (weak red); Manufacture: Wheelmade; Surface Treatment: Incising: Horizontal flattened from neck to bottom; Comments: Vessel Parts: Opposing strap handles attached from rim to body; curved bottom; slight ext. evidence of smoke blackening. Vessel Dimensions: Max. diam. 19.6 cm; max. ht. 14.2 cm; rim diam. 10.2 cm</i>	Qurwayliba (Abila)	Mare 1984: 53 (fig. 10:444)
373	Jar	Closed	—	tall	—	Jarash	Fisher and McCown 1931: 54 (pl. 13:3)



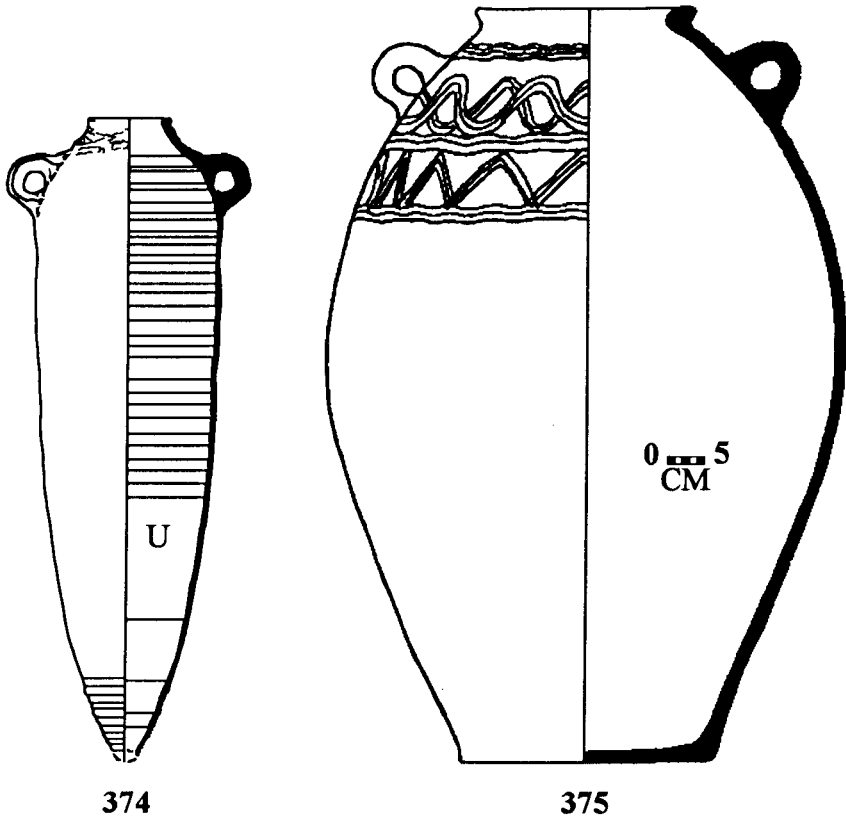
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Byzantine pottery examples. Jars (nos. 372 and 373).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
374	Jar (amphora)	Closed	—	tall-to-very tall	Technique: <i>Inclusions:</i> Fine-to-medium grits; <i>Firing:</i> Medium-hard; reddish-yellow core; Comments: <i>Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 179 (fig. 5:19)
375	Jar	Closed	—	very tall	—	Jarash	Fisher and McCown 1931: 34 (fig. 5)

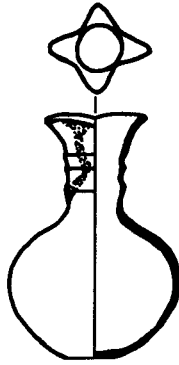


Byzantine pottery examples. Jars (nos. 374 and 375, the latter scaled at 10%).

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
376	Jug (juglet)	Closed	--	very short	--	Siyagha (Mount Nebo)	Schneider 1950: 90 (fig. 10)
377	Jug (bottle)	Closed	--	short	--	Siyagha (Mount Nebo)	Schneider 1950: 52 (fig. 3:2)
378	Jug	Closed	--	short	Comments: Possible lantern or censor	Jarash	Fisher and McCown 1931: 55 (pl. 14)
379	Jug (flask)	Closed	--	tall	Technique: Ware: Type: Metallic buff ware; Color: 7.5YR8/4 (pink)	Tabaqat Fahl (Pella)	Walmsley <i>et al.</i> 1993: 207 (fig. 20:1)
380	Jug	Closed	--	short	--	Jarash	Seigne 1986: 73 (fig. 19:3)
381	Jug	Closed	--	short	--	Jarash	Seigne 1986: 73 (fig. 19:6)
382	Jug	Closed, spouted	--	short	Surface Treatment: Painting: White spiral	Jarash	Montivault 1986: 140 (fig. 1)
383	Jug	Closed	--	short	--	Umm Qays	Holm-Nielsen <i>et al.</i> 1986: 230 (fig. 4:7)



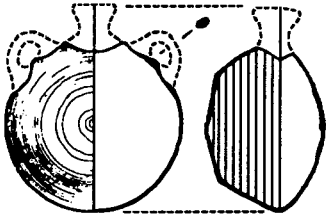
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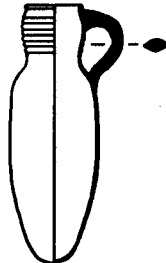
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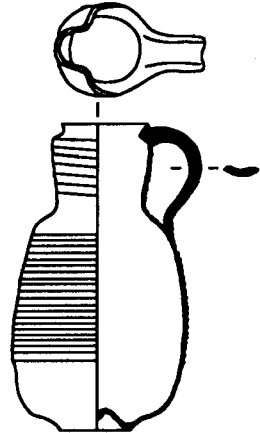
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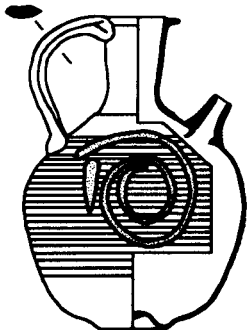
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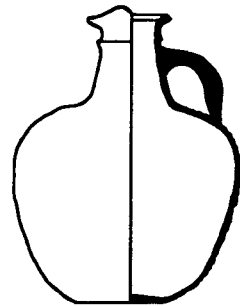
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383

Byzantine pottery examples. Jugs (nos. 376-383).

Jars: Jar forms included cooking pots, jars, and storage jars. Jar lip profiles included rounded, squared, and thickened styles. Jar rim profiles were generally thickened. Jar rim inflections included angular and curved styles. Jar wall profiles were generally globular. Jar neck profiles were generally conical or cylindrical. Early Byzantine jar rims were sometimes everted and decorated with combing. Late Byzantine jars included thinned lip profiles or thickened rim profiles. Jars were sometimes made of cruder ware, more often associated with cooking pots. Jars were of dark ribbed ware with omphalos bases, or of light unribbed ware. Larger jars of dark ribbed ware were sometimes painted white, and possessed thickened rims (sometimes with grooving), ridged necks and shoulders, as well as round bases. Tall-necked storage jars were sometimes characterized by elongated rims, a drip ring at the base of the neck, decorative combing (typical on unribbed ware), vertical loop handles, and pointed or knobbed bases. Jars with short, thickened necks were manufactured during the Roman and Byzantine periods, and into the Umayyad periods. **Jugs:** Jug forms included bottles, flasks, juglets, and jugs. Jug lip profiles included rounded, squared, thickened, and thinned styles. Jug rim profiles included flattened, pinched, and thickened styles. Jug rim inflections included angular, bi-angular, curved, and straight styles. Jug wall profiles were generally globular or piriform. Jug neck profiles included conical, curving, and cylindrical styles. Late Byzantine jugs were of dark ribbed ware with omphalos bases, or light unribbed ware. **Miscellaneous vessels:** Miscellaneous forms included candlestick lamps, molded lamps, and lids. "Candlestick lamps [had] three splayed lines on either side of the nozzles" (Sauer 1982: 330). Byzantine lamps were moldmade with Christian motifs. Knob-handled casserole cooking pot lids became a standard component of the Byzantine and Early Islamic ceramic corpora. **Vessel parts:** Byzantine bases included knobbed or pointed (on storage jars), omphalos (jars and jugs), ring (on bowls), or round (also on jars and jugs) styles. Ring bases (both lower and higher) were common on jars. Handles included loop (horizontal on casseroles; wishbone on frying pans; vertical on storage jars), ovoid (often on large jars), or spherical (large jars and basins) styles. The horizontal loop handles on open casseroles were squared and pinched at the top, flattened and ridged. Loop handles were sometimes flattened and grooved.

The Early Islamic Periods

As defined in this book, the Early Islamic periods were comprised of the Umayyad, Abbasid, and Fatimid periods. The short period of Arab bedouin control between the removal of the Byzantines and the rise of the Umayyad caliphate *per se*, referred to as the "pre-Umayyad" period, was not always ceramically distinct and therefore is incorporated in the Umayyad period in the following characterization. There was, however, strong regionalism in pottery styles with significantly different pottery in the north and south. For an extremely detailed analysis of the construction techniques and decorations of Islamic period pottery, see Franken and Kalsbeek 1975 (*cf.* Sauer 1976 and Brown 1989 for periodization).

Some of the sites currently associated with the Early Islamic period pottery culture in Transjordan include: ad-Dayr (Ma'in), al-Bassa, al-Muwaqqar, al-Quwaysma, al-Wuayra, Amman, Amman Citadel (al-Qal'a), Amman Roman Forum, Aqaba, 'Araq Abu az-Zayt, 'Ayn Boqaq, Dayr 'Ayn 'Abata, Dayr 'Alla, Dhiban (Dibon), Faris, Faynan, Hammam as-Sarakh, Humayma, 'Iraq al-Amir, Jarash, Karak, Kharana, Khirbat al-'Al, Khirbat al-Kursi, Khirbat as-Samra, Khirbat Dohalah al-N'aymah, Listib, Madaba, Mount Nebo, Mount Nebo ('Ayn Musa), Mount Nebo (Siyagha), Petra (Sela'), Qasr al-Hallabat, Quwayliba (Abila), Risha, Rujm al-Kursi, Shunat Nimrin, Tabaqat Fahl (Pella), Tall Abu Qa'dan, Tall al-'Umayri, Tall as-Sa'idiyah, Tall Hisban, Tall Jawa (South), Tall Nimrin, Tall Sahl as-Sarabat, Tall Siran, Udhruh, Umm al-Jimal, Umm al-Walid, Umm ar-Rasas, and Umm Qays, as well as smaller sites along the Wadi as-Summaq Wadi al-Hasa, Wadi Arab, and Wadi Ziqlab.

Umayyad Period

While Umayyad pottery characteristics generally continued from the preceding period, a collection of "fine wares" provided hallmark vessels for the assemblage. "These vessels demonstrate sophisticated production technologies as well as the emergence of a new ceramic aesthetic" (Brown 1991: 224, 225). Characterization of this period has been taken from J. Sauer (1982: 332), the contextual study of the Kerak Plateau by Brown (1991), and personal communication from project consultants.

Technique. Wares: Ware colors included buff, pink, orange-pink, grey (as in the Late Byzantine period), white-to-cream, along with some forms being dark-colored (black, grey-black, brown, and red). Some bowl forms (plates and cups) were of thin, hard metallic ware which was dark

colored (dark orange, grey-red). **Inclusions and Levigation:** Inclusions were visible, however, well-levigated pastes were typical of fine ware.

Manufacturing: Most vessels were wheelmade; small "cut-ware" bowls, basins, and storage jars were handmade. Lamps were moldmade. **Firing:** Umayyad ceramics were generally well fired with few grey cores despite some thick profiles.

Surface treatment. Slipping: Slip colors included white, cream (of various shades), pale-pink, and deeper pink-orange. **Burnishing:** Burnishing was utilized as a surface treatment. **Glazing:** Glazed pottery in the Umayyad period was very rare. **Painting:** Painting occurred in red (perhaps to be associated with the Late Umayyad period) and white (continuing from the Late Byzantine period and into the Early Umayyad), as well as purple and brown. Grey-green paint was unusual. Painted motifs included red or white swirls (on all vessel forms), floral designs (common on small bowls and cups), simple linear bands, wavy lines, and geometrical patterns of vertical and dripped horizontal lines.

Impressing: Finger impressing was done, sometimes in conjunction with incising. **Incising:** Incising was "associated with large handmade [grey ware] basins" during this period (Brown 1991: 227), as well as with storage jars and large jars (Sauer 1982: 332). Combing resulted in elaborate designs. Ribbing was done, but most Umayyad pottery was unribbed. Rouletting was uncommon. **Paring:** "Cut-ware" designs were made of "knife-cut squares and crosses on the exteriors of small handmade bowls" (Sauer 1982: 332). **Molding and Inscriptions:** Molded decoration or inscriptions as well as painted inscriptions were applied on lamps.

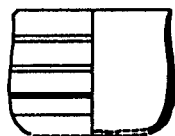
Forms (pottery examples 384-414). Basic domestic forms in the Umayyad corpus (cooking pots, casseroles, and large handmade basins) were derived from the Byzantine corpus and continued through the Early Islamic period. **Bowls:** Bowl forms included basins, bowls, casseroles, cooking pots, cups, kraters, and plates. Bowl lip profiles included flattened, rounded, squared, thickened, and thinned styles. Bowl rim profiles were generally thickened. Bowl rim inflections included angular, curved, and straight styles. Bowl wall profiles included biconical, conical, cylindrical, and globular styles. Basins were handmade. They were often wavy incised and thumb impressed, possessed rounded lips and thickened rims, straight sidewalls, and simple flat bases. Bowl forms included plates and cups of dark metallic ware. Typically, these had thinned lips and flat bases. The basic bowl had straight wall profiles, squared or thinned lip profiles, were

made of pink or buff ware, possessed exterior painted designs, and were often decorated with red, red-brown, or purple-brown paints. Later in the Umayyad period, handmade cut-ware bowls were made of thin, metallic grey ware with incised designs. They may have continued into the Fatimid period. Umayyad cups and small bowls were often painted, had thinned lip profiles or angular rim inflections, as well as rounded or slightly-flattened bases. Casseroles typically had flattened lip profiles; horizontal loop handles (curving upward); and slightly flattened bases. Casserole lids had single, high, central, knob handles. **Jars:** Jar forms included amphora, cooking pots, jars, and storage jars. Jar lip profiles included flattened, rounded, and thickened styles. Jar rim profiles were generally thickened. Jar rim inflections included angular, curving, and straight styles. Jar wall profiles included biconical, cylindrical, and globular styles. Jar neck profiles included conical, curving, and cylindrical styles. There were two types of smaller jars: 1) those with a smooth body and two handles at the shoulder; and 2) those with two handles, a wide neck, and a rounded base. Cooking pots had rounded rims. Larger jars had high necks, angular (inflection) and thickened (profile) rims, and high omphalos bases. The basic Late Byzantine storage jar form continued into the Umayyad period with a change in rim profile (more rounded and less modeled). Storage jars had thickened rims, slightly pointed bases, and vertically-ribbed, loop handles. Two types of storage jars included the amphora and the pithoi. **Jugs:** Jug forms included flasks, juglets, jugs, and spouted jugs. Jug lip profiles included rounded, squared, thickened, and thinned styles. Jug rim profiles were generally pinched or thickened. Jug rim inflections included angular, curved, and straight styles. Jug wall profiles were generally globular or piriform. Jug neck profiles included conical, curving, and cylindrical styles. **Miscellaneous vessels:** Miscellaneous forms included candlestick lamps, molded lamps, and lids. Candlestick lamps had four splayed lines on either side of the nozzle. Ornatly decorated molded lamps sometimes possessed Arabic inscriptions. Casserole lids continued in basic design from the Late Byzantine. **Vessel parts:** Bases included flat, rounded, omphalos, and pointed styles. Handles included elliptical, knob, and loop styles. Elliptical handles were placed on jars and jugs. Knob handles which were placed on casserole lids were of coarse, dark fabrics similar to that of Late Byzantine casseroles. Umayyad casserole lid handles tended to be taller than Late Byzantine. Loop handles were placed on storage jars.

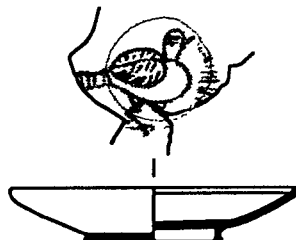
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
384	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: 7.5YR6/4 (light brown); Levigation: Fine; Firing: 4.5 Mohs (Medium); Surface Treatment: Paring; Slip: 7.5YR6/4 (pinkish-grey); Comments: Vessel Dimensions: Diam. 9 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 140:8
385	Bowl (cup)	Open	very small	deep	—	Jarash	Gawlikowski 1986: 133 (pl. XII)
386	Bowl (plate)	Open	medium	shallow	<i>Technique: Ware: Color: brick red; Surface Treatment: Jarash bowl; Burnishing; Painting: White circle with brown duck; Comments: Vessel Parts: Low ring base; globular wall profile; round rim set off with groove; Vessel Dimensions: Diam. 19 cm; ht. 3.5 cm</i>	Jarash	Gawlikowski and Musa 1986: 146 (fig. 6:1 and 6:7)
387	Bowl	Open	medium	intermediate	<i>Technique: Ware: Type: Transjordanian red-slip; Color: 5YR6/3; Levigation: Fine; Inclusions: Small limestone; Firing: 4.75 Mohs; Surface Treatment: Incising: Spiral on int.; Painting: 2 broad strokes made opposite one another with fine brush; Paring: Horizontal on ext.; Rouletting: Horizontal on ext.; Slip: Wiped-on 5YR4/2-6/3 on int.</i>	Tabaqat Fahl (Pella)	Smith and Day 1989: pl. 62:3
388	Bowl	Open	medium	intermediate	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 58:51
389	Bowl	Open	large	intermediate	<i>Technique: Ware: Color: 2.5YR6/8 (light red); Levigation: Medium-to-fine; Firing: 4.75 Mohs (Hard); Surface Treatment: Painting: Wavy white on ext., int., and rim; Comments: Vessel Dimensions: Diam. 25 cm</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 140:3
390	Bowl	Open	large	intermediate	<i>Technique: Ware: Color: dark grey; Inclusions: Small-to-medium grey, white and transparent grits; Manufacture: Handmade; Surface Treatment: Incising: Combing, chiselling</i>	Jarash	Walsley 1995: 666 (fig. 8:7)



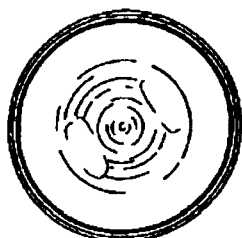
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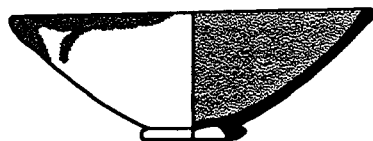


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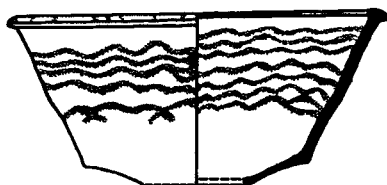


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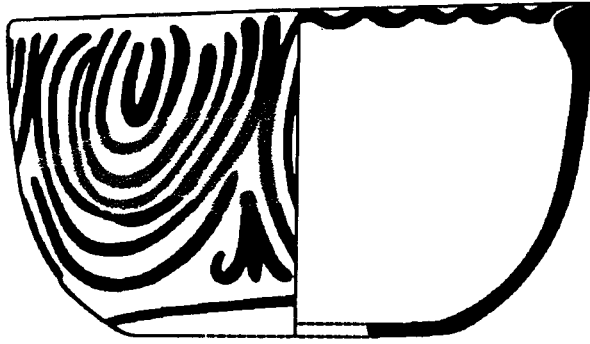


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Umayyad pottery examples. Bowls (nos. 384-390).

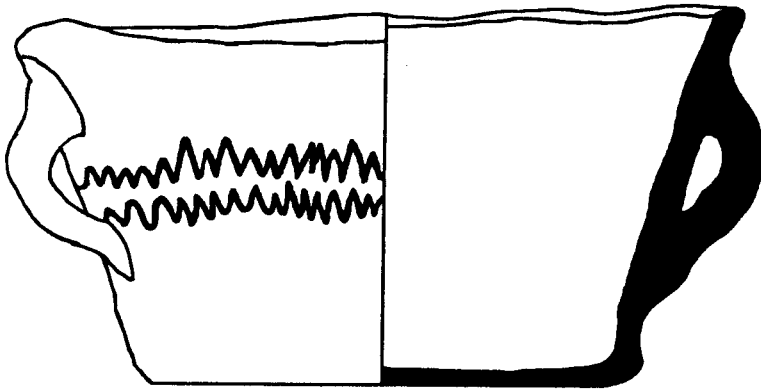
256 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
391	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: red buff, <i>Levigation:</i> Coarse and gritty; <i>Firing:</i> Hard and even; <i>Surface Treatment: Painting:</i> 2 brown straight lines around ext. rim and above base; 7 groups of half concentric circles of same paint around ext. surfaces in upright position; each group separated from other by 3 petals of upside down lotus-like flower; <i>Slip:</i> Whitish-creamy ext.; <i>Comments:</i> <i>Vessel Parts:</i> Thickened rim profile; globular wall profile; <i>Vessel Dimensions:</i> Diam. 17.8 cm; thick. 0.5 cm	Khirbat al-Kursi	'Amr 1986: 157 (fig. 25)
392	Bowl (basin)	Open	large	intermediate	<i>Technique: Manufacture:</i> Coil; <i>Surface Treatment: Incising:</i> 2 wavy lines; <i>Comments:</i> <i>Vessel Parts:</i> 2 handles irregularly placed	Amman	Northedge 1992: fig. 132:5



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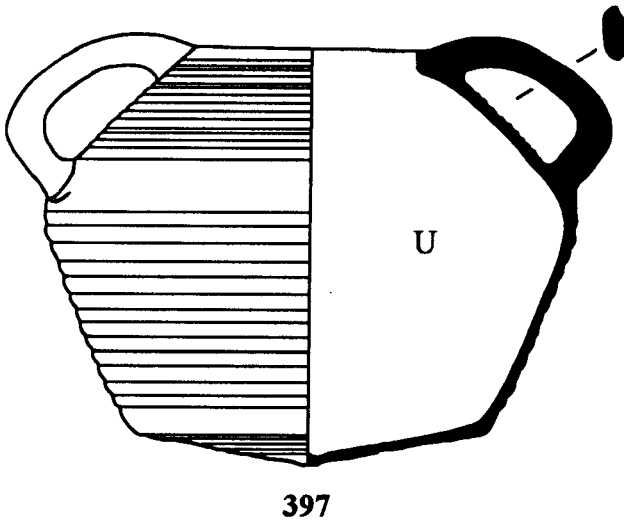
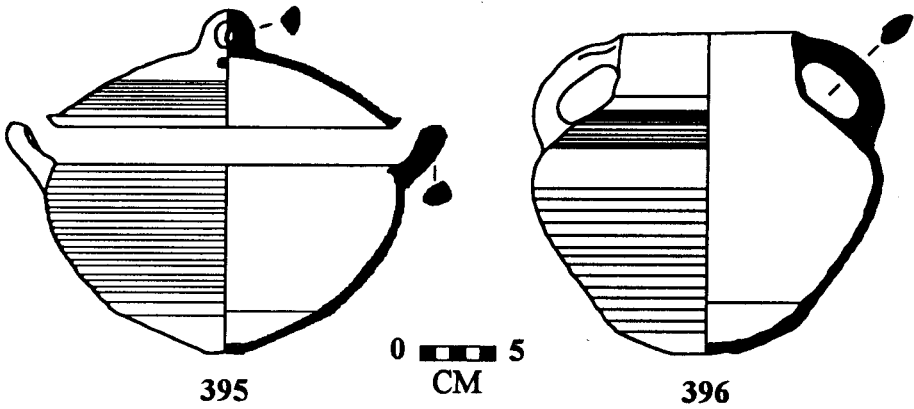
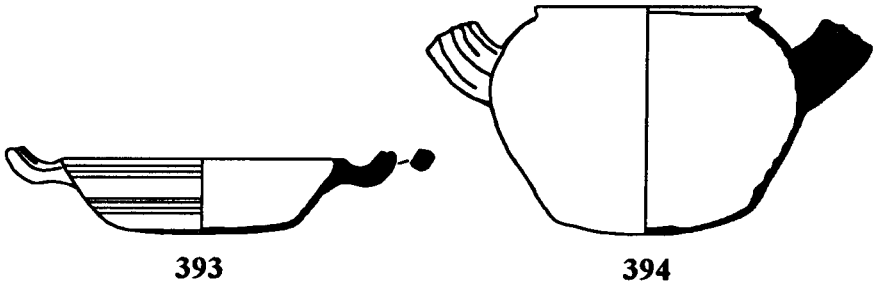


392

Umayyad pottery examples. Bowls (nos. 391 and 392).

258 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
393	Bowl (cooking pot)	Open	large	intermediate	<i>Technique: Ware: Type: coarse terracotta</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 147:10
394	Bowl (cooking pot)	Open	medium	deep	<i>Technique: Ware: Color: 2.5YR5/6 (red); Comments: Vessel Parts: 2 strap handles</i>	Amman	Northedge 1992: fig. 151:3
395	Bowl + lid (cooking pot)	Open	large	intermediate	<i>Technique: Levigation: Coarse gritty; Firing: Terraotta color; Comments: Vessel Dimensions: Diam. 24 cm</i>	Tabaqat Fahl (Pella)	McNicoll and Hennessy 1980: pl. XXIII:2, 3
396	Jar (cooking pot)	Closed	—	short	<i>Technique: Levigation: Coarse and gritty</i>	Tabaqat Fahl (Pella)	Hennessy 1989: 437 (fig. 13:8)
397	Jar (cooking pot)	Closed	—	—	<i>Technique: Ware: Type: coarse terracotta; Comments: Vessel Dimensions: Original publication unscaled</i>	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 147:16

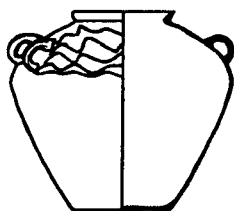


Umayyad pottery examples. Bowls (nos. 393-395) and jars (nos. 396 and 397).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
398	Jar	Closed	—	very short	<i>Surface Treatment: Incising: Ribbing; Comments: Vessel Parts: Cylindrical wall profile; Vessel Dimensions: Rim diam. 2.8 cm; ht. 10 cm</i>	Jarash	Gawlikowski and Musa 1986: 144 (fig. 5:10)
399	Jar	Closed, storage	—	tall	<i>Technique: Levigation: Well; Firing: Dark grey; Surface Treatment: Incising: Combing; Comments: Vessel Parts: 4 handles irregularly spaced around shoulder; Vessel Dimensions: Diam. of neck: 28.5 cm</i>	Tabaqat Fahl (Pella)	McNicol and Hennessy 1980: pl. XXI:1
400	Jar	Closed	—	tall	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 30:86
401	Jar	Closed	—	tall	<i>Surface Treatment: Painting: Purplish-brown on light buff</i>	Tabaqat Fahl (Pella)	McNicol, Smith, and Hennessy 1982b: pl. 143:1



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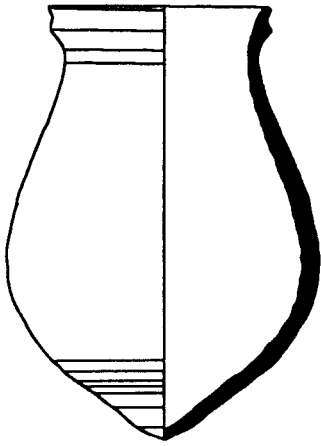


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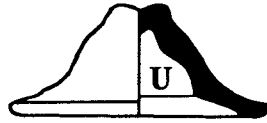
Umayyad pottery examples. Jars (nos. 398-401).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
402	Jar	Closed	—	tall	<i>Technique: Ware:</i> Type: chaff-tempered coarse	Tabaqat Fahl (Pella)	McNicol, Smith, and Hennessy 1982b: pl. 145:4
403	Lid	—	—	—	<i>Comments: Vessel Dimensions:</i> Original publication unscaled	Amman	Bennett 1978: 6 (fig. 5:800)
404	Lid	—	—	—	<i>Technique: Ware:</i> Type: coarse kitchen; <i>Color:</i> 10YR4/4; <i>Levigation:</i> Medium-to-coarse; <i>Inclusions:</i> Small chert and limestone; <i>Firing:</i> 5.75 Mohs; <i>Comments: Vessel Dimensions:</i> Original publication unscaled	Tabaqat Fahl (Pella)	Smith and Day 1989: pl. 61:11
405	Jar	Closed	—	tall	—	Umm al-Walid	Haldimann 1992: 315 (fig. 7:13)
406	Jar	Closed	—	tall	<i>Technique: Ware:</i> Type: pale jar-ware; <i>Color:</i> 7.5YR7/4; <i>Levigation:</i> Medium-to-fine; <i>Firing:</i> 2.5 Mohs	Tabaqat Fahl (Pella)	Smith and Day 1989: pl. 60:2



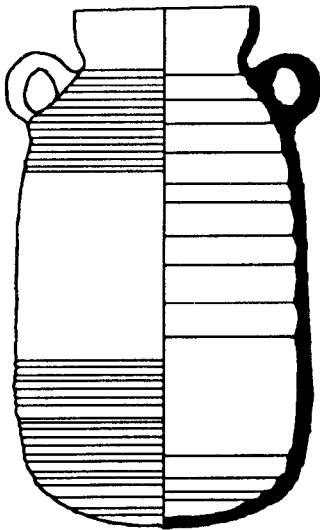
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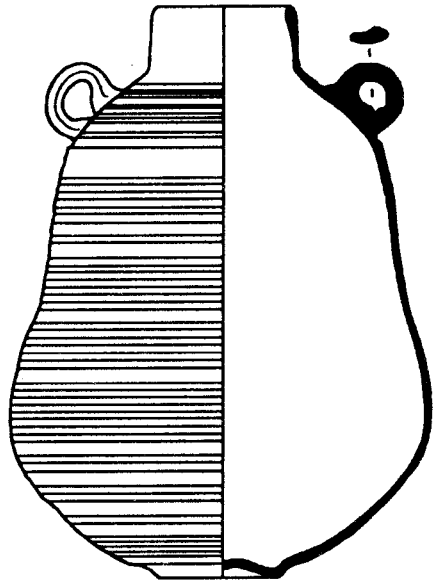
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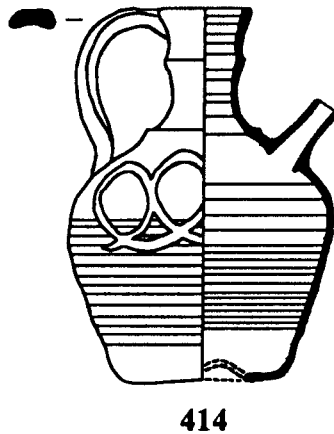
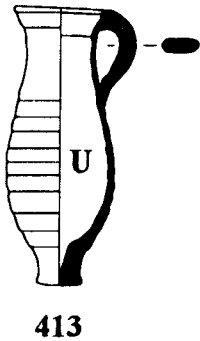
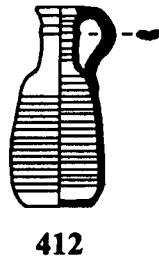
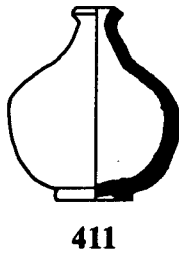
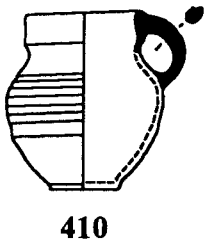
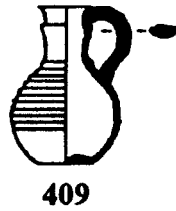
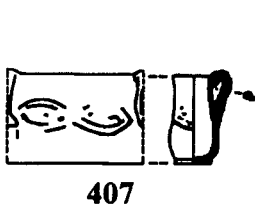
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406

Umayyad pottery examples. Jars (nos. 402, 405, and 406) and lids (nos. 403 and 404).

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
407	Jug (juglet)	Closed	—	very short	—	Tall Deyr 'Alla	Franken and Kalsbeek 1975: 105 (fig. 25)
408	Jug (juglet)	Closed	—	very short	—	Tall Deyr 'Alla	Franken and Kalsbeek 1975: 78 (fig. 14)
409	Jug	Closed, spouted	—	short	—	Jarash	Gawlikowski 1986: 132 (pl. XI)
410	Jug	Closed	—	short	—	Tabaqat Fahl (Pella)	McNicoll, Smith, and Hennessy 1982b: pl. 143.3
411	Jug (flask)	Closed	—	very short	<i>Technique: Ware: Color: buff, Firing: Medium; Comments: Vessel Parts: Thick, curving neck</i>	Amman	Harding 1951a: fig. 2.29
412	Jug	Closed	—	very short	—	Jarash	Gawlikowski 1986: 132 (pl. XI)
413	Jug	Closed	—	—	<i>Comments: Vessel Dimensions: Original publication unscaled</i>	Amman	Zayadine 1978b: 53 (fig. 24:J13380b)
414	Jug	Closed, spouted	—	short	—	Jarash	Gawlikowski 1986: 131 (pl. X)



Umayyad pottery examples. Jugs (nos. 407-414).

The Abbasid Period

Characterization of this period has been taken from J. Sauer (1982: 333), the contextual study of the Kerak Plateau by Brown (1991), and personal communication from project consultants.

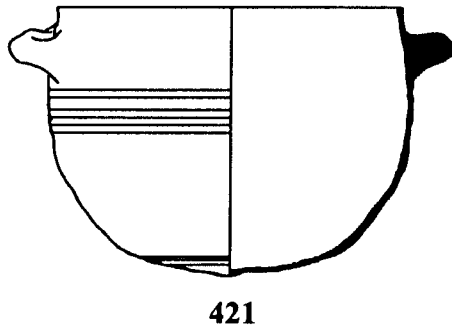
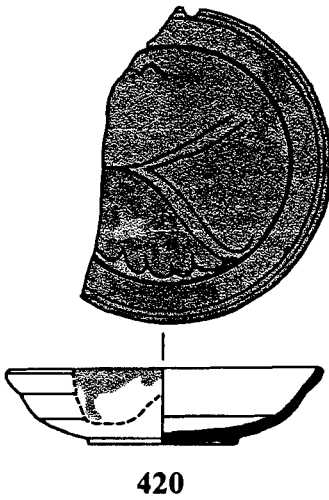
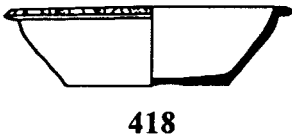
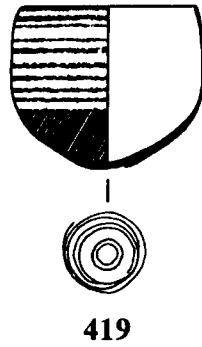
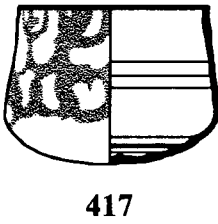
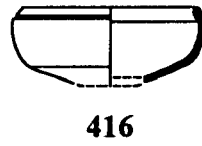
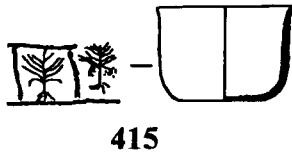
Technique. Wares: Ware colors included black, brown, cream, greenish-white grey, pink, tan, orange, white, and yellow-white, with white predominating. Abbasid pottery was thinner and smoother than Umayyad pottery. The thin metallic ware of the Umayyad period was not common in the Abbasid period. Other Abbasid wares were eggshell, compact, and cooking pot ware. "Palace" ware was manufactured in northern Transjordan. "Mahesh" ware (characterized by a cream-colored fabric, comb-incising, and specific vessel forms) was manufactured in southern Transjordan. **Inclusions:** Inclusions were generally small-to-medium sized, and barely visible. Grit colors included black, brown, grey, orange, red, transparent, white, and yellow. **Levigation:** Clay was generally very well prepared during the Abbasid period. **Manufacturing:** Abbasid pottery, like previous periods, was largely wheelmade, but some forms were made by hand (basins, "cut-ware" bowls, and storage jars). Lamps were moldmade. **Firing:** Firing was generally excellent with virtually no grey cores.

Surface treatment. The various surface treatments of Abbasid period pottery all differ from the Umayyad period types. Glazing became common, while at the same time, slipping, burnishing, molding, and incising (except for incising on larger basins) were utilized less-and-less. Polychrome glazing was therefore a hallmark of the Abbasid period and continued in the following Islamic periods. Glazing, itself, can be diagnostic for determining archaeological periodization. **Slipping:** White slipping was utilized, however slipping was apparently less common during the Abbasid period than other periods. **Burnishing:** Burnishing was also used as a surface treatment. **Glazing:** Instead of paint, a new polychrome glazing (green, yellow, and purple) was applied to the inside of plates. Underglaze included green and brown painted lines on yellow-green background. Glazing styles included Coptic glaze, green glaze, splash glaze, and turquoise or blue glaze. **Painting:** Painting motifs included diagonal, parallel, straight, or wavy lines with single or multiple teeth. Yellow, green, and brown paints were used as underglazes on certain forms. Reddish-brown painted decorations included loops, stars, wavy, and crossed lines. White paint was used as decorations in banded, wavy, parallel, or intersecting lines and loops, as well as strokes on rims and handles.

Appliqué: Clay knobs (sometimes called "turbans" in the literature) were attached to the handles of jars and jugs. **Impressing:** Normal finger impressing continued, but a new type of heavy or deep impressing appeared on storage jars. **Incising:** Incising included combing, grooving, and ribbing. Band combing was not as common in the Abbasid period, and where evidenced, it was shallower and finer. Combing appeared with a new type of incising: small separated or interlocking circles. Grooved spiral circles sometimes decorated the exterior, and less commonly the interior, of vessels. Ribbing appeared on some forms, especially on cups. **Paring:** The incising on "cut-ware" bowls was much cruder and deeper than during the Umayyad period. **Molding:** Although perhaps rare, a moldmade jug with a Kufic inscription evidences that vessels other than lamps were moldmade during the Abbasid period. The molded motif of "vine, scroll, and grape" clusters was common on lamps during, and after, this period. **Ridging:** Scalloped ridges sometimes decorated vessel bodies.

Forms (pottery examples 415-432). **Bowls:** Bowl forms included basins, bowls, casseroles, cooking pots, cups, and plates. Bowl lip profiles included rounded, squared, thickened, and thinned styles. Bowl rim profiles included flattened, offset, and thickened styles. Bowl rim inflections included angular, bi-angular, and straight styles. Bowl wall profiles included biconical, conical, cylindrical, and globular styles. Basins were produced in a range of sizes. Smaller basins had flat bases and ledge handles. Smaller bowls were of unribbed and undecorated ware with inverted and offset rims. Larger "cut-ware" bowls were of crude, heavy handmade ware with vertical sidewalls and flat bases. Cooking vessels included casseroles (both miniature and normal size) and cooking pots. Casseroles were of thin unribbed ware, the lids of which had curving sidewall profiles and a single, central knob handle. Casseroles also had flat ledge handles. Cooking pots typically had two vertical handles. Cups were of plain ribbed ware with impressed rims and small flat bases. Polychrome glazed ware plates had rounded or thinned lip profiles and disk or ring bases. **Jars:** Jar forms included jars, storage jars, and water jars. Jar lip profiles included flattened, rounded, thickened, and thinned styles. Jar rim profiles included flattened and thickened styles. Jar rim inflections included angular, curved, and straight styles. Jar wall profiles included globular and piriform styles. Jar neck profiles included conical, curving, and cylindrical styles. Smaller jars were of a distinctive yellow-white ware.

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
415	Bowl (cup)	Open	very small	deep	Technique: <i>Inclusions:</i> Small white limestone grits; <i>Surface Treatment:</i> <i>Incising:</i> Date palms within finely "chiselled" borders on smoothed surface on ext.; <i>Comments:</i> <i>Vessel Parts:</i> Angular rim inflection	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 186 (fig. 9:12)
416	Bowl	Open	small	intermediate	Technique: <i>Ware:</i> Color: pink (5YR7/3); <i>Inclusions:</i> Small calcite grits; <i>Manufacture:</i> Wheelmade; <i>Firing:</i> Light yellowish-brown; <i>Surface Treatment:</i> <i>Painting:</i> Red on ext. <i>Comments:</i> <i>Vessel Dimensions:</i> Diam. 11 cm	al-Muwaqqar	Najjar 1989: 313 (fig. 5:2)
417	Bowl	Open	small	intermediate	Technique: <i>Ware:</i> Type: "Palace-ware"; Color: 2.5YR7/6-to-2.5YR/3 (orange-to-pale yellow); <i>Inclusions:</i> Small and sometimes medium white and grey grits; <i>Surface Treatment:</i> <i>Painting:</i> 2.5YR2/3 (red) loops and half circles; <i>Slip:</i> White; <i>Comments:</i> <i>Vessel Parts:</i> Angular rim inflection; conical wall profile	Tabaqat Fahl (Pella)	Walmaley, <i>et al.</i> 1993: 216 (fig. 23:4)
418	Bowl	Open	medium	intermediate	Technique: <i>Ware:</i> Color: ext. 2.5YR6/6-to-7.5YR6/4-to-N5/0; int. 2.5YR6/6; <i>Inclusions:</i> Small-to-medium sized white limestone and quartz-like grits; <i>Firing:</i> Core N4/0; <i>Surface Treatment:</i> <i>Painting:</i> Multiple white strokes on rim top; <i>Comments:</i> <i>Vessel Parts:</i> Flat base; flattened rim profile	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 184 (fig. 7:4)
419	Bowl	Open	small	deep	Technique: <i>Ware:</i> Color: ext./int. 7.5YR6/4; <i>Inclusions:</i> Very small white limestone and chert grits; <i>Firing:</i> Core 7.5YR7/4; <i>Surface Treatment:</i> <i>Burnishing:</i> Int./ext. 5YR6/6; <i>Incising:</i> Grooving on base; <i>Paring:</i> On base	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 186 (fig. 9:11)
420	Bowl	Open	medium	intermediate	Technique: <i>Ware:</i> Type: Coptic glaze; Color: 5YR6/6 (reddish-orange); <i>Surface Treatment:</i> <i>Glaze:</i> Bubbly yellow and green separated into zones by brown paint and glaze lines	Tabaqat Fahl (Pella)	Walmaley <i>et al.</i> 1993: 217 (fig. 24:4)
421	Bowl (cooking pot)	Open	medium	deep	Technique: <i>Ware:</i> Color: 10R2.5/2 (very dusky red); <i>Surface Treatment:</i> <i>Incising:</i> Ribbing; <i>Comments:</i> <i>Vessel Parts:</i> 2 horizontal handles	Amman	Northedge 1992: fig. 155:1

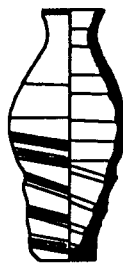


Abbasid pottery examples. Bowls (nos. 415-421).

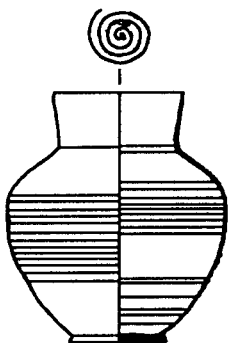
No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
422	Jar	Closed	—	very short	Technique: <i>Ware:</i> Color: ext. 5Y8/3 (pale yellow); int. 5Y8/3 (pale yellow); <i>Inclusions:</i> Small sand grits; <i>Manufacture:</i> Hand-made; <i>Surface Treatment:</i> <i>Glaze:</i> Green on ext.; <i>Comments:</i> <i>Vessel Dimensions:</i> Base diam. 6 cm; ht. 11.6 cm; rim diam. 5 cm	al-Muwaqqar	Najjar 1989: 315 (fig. 6:28)
423	Jar	Closed	---	short	Technique: <i>Ware:</i> Type: Maheah; Color: orange; <i>Inclusions:</i> Medium sand	Amman	Whitcomb 1989: 282 (fig. 3:e)
424	Jar	Closed	---	short	Technique: <i>Ware:</i> Type: Egg shell thin; Color: pale cream; <i>Inclusions:</i> Small grey, red (grog?), and clear inclusions; <i>Comments:</i> Aerated	Tabaqat Fahl (Pella)	Walmsley 1995: 667 (fig. 9:4)
425	Jar	Closed	---	very short	Technique: <i>Ware:</i> Type: metallic terracotta; Color: ext. 2.5YR5/8-to-N5/0; int. 7.5YR6/4; <i>Inclusions:</i> Many small white limestone and grey chert grits; <i>Firing:</i> Core N5/0; <i>Surface Treatment:</i> <i>Painting:</i> White bands of wavy lines on shoulder; <i>Comments:</i> <i>Vessel Parts:</i> 2 vertical strap handles; cylindrical neck; piriform wall profile; omphalos base	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 184 (fig. 7:2)
426	Jar	Closed	---	short	Technique: <i>Ware:</i> Type: fine; Color: 5Y8/3 (pale yellow); <i>Inclusions:</i> Small red-to-orange, clear, and/or grey; <i>Surface Treatment:</i> <i>Applique:</i> "Turban" knobs on handles; <i>Incising:</i> Lines on neck and body; <i>Painting:</i> <i>Comments:</i> <i>Vessel Parts:</i> Flat base; sieve in neck	Tabaqat Fahl (Pella)	Walmsley <i>et al.</i> 1993: 216 (fig. 23:9)



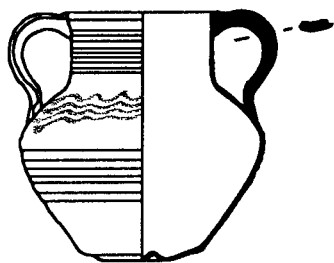
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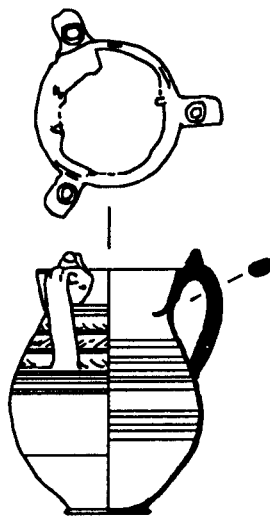
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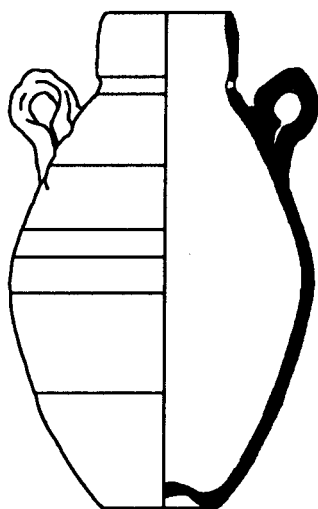


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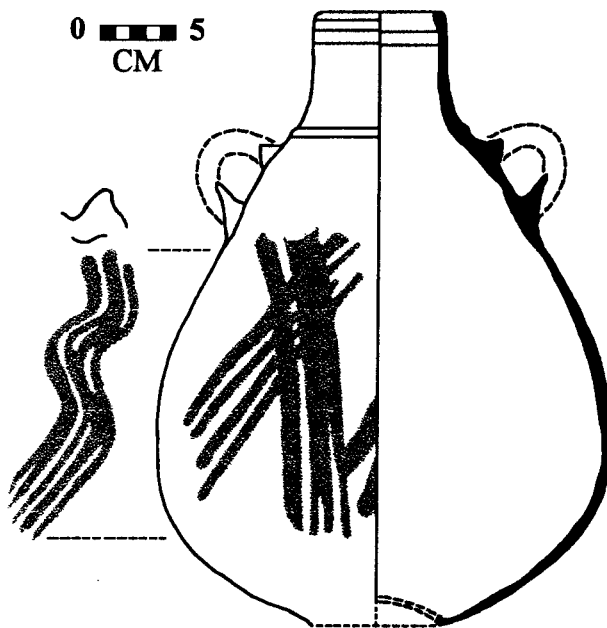
Abbasid pottery examples. Jars (nos. 422-426).

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No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
427	Jar	Closed	—	tall	Technique: <i>Wares:</i> Type: Mahesh; Color: cream; Inclusions: Medium sand	Aqaba	Whitcomb 1989: 282 (fig. 5-5)
428	Jar	Closed	—	tall	Technique: <i>Wares:</i> Color: ext. 5Y8/2 (white); int. 7.5YR7/2 (pinkish-grey); Inclusions: Small sand grits; Manufacture: Wheel-made; Surface Treatment: <i>Painting:</i> Weak red; Comments: <i>Vessel Dimensions:</i> Rim diam. 7 cm; ht. 40 cm	al-Muwaqqar	Najjar 1989: 317 (fig. 7:29)



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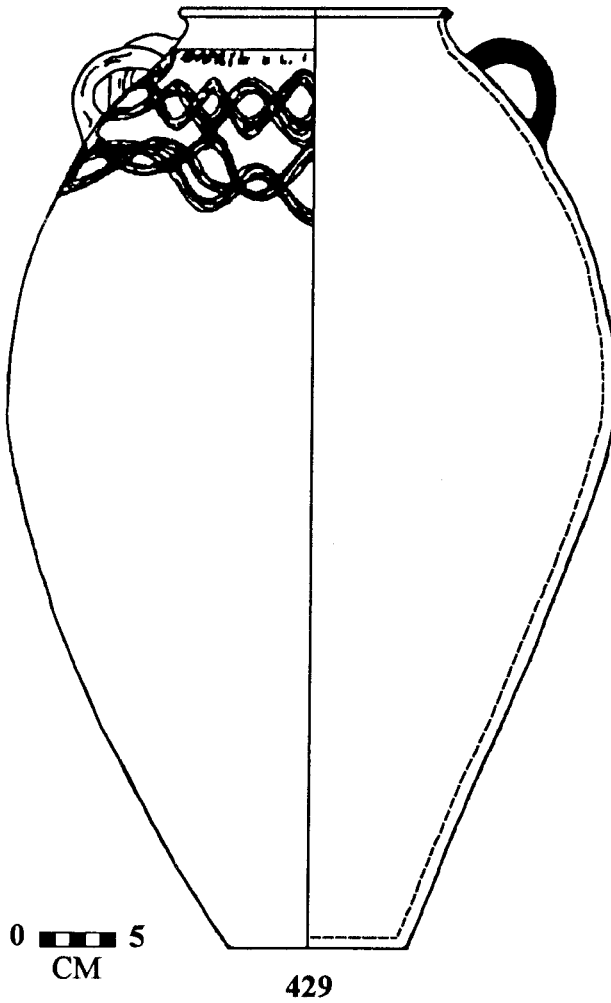


428

Abbasid pottery examples. Jars (nos. 427 and 428).

274 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
429	Jar (storage jar)	Closed	---	tall	<i>Technique: Manufacture:</i> Handmade	Darat al-Punun	Bikai, Sha'er, and Fitzgerald 1994: 411 (fig. 11)

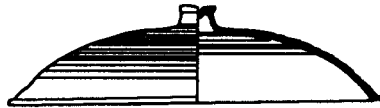


Abbasid pottery example. Jar (no. 429).

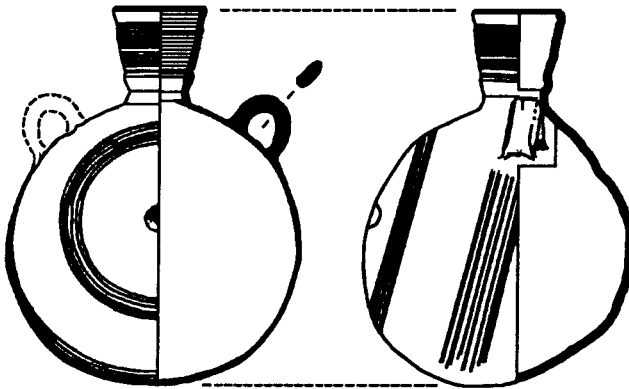
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
430	Lid (jar lid)	---	---	---	Technique: <i>Ware:</i> Color: 2.5Y8/2; <i>Inclusions:</i> Small white limestone and brown (grog) grits; Comments: String-cut markings on flat top	Tabaqat Fahl (Pella)	McNicoll <i>et al.</i> 1986: 186 (fig. 9:10)
431	Lid	---	---	---	Technique: <i>Ware:</i> Type: gritty; Color: 10R4/4 (reddish-brown); <i>Inclusions:</i> Small-to-medium grey, white, and transparent grits; Surface Treatment: <i>Inclising:</i> Mild ribbing on ext.; Comments: <i>Vessel Parts:</i> Knob handle	Tabaqat Fahl (Pella)	Walmsley <i>et al.</i> 1993: 216 (fig. 23:6)
432	Jug (flask)	Closed	---	short	Technique: <i>Ware:</i> Type: fine; Color: 5Y8/3 (pale yellow); <i>Inclusions:</i> Small red-to-orange, clear, and/or grey grits; Surface Treatment: <i>Inclising:</i> Lines on neck and body; <i>Parting;</i> Comments: <i>Vessel Parts:</i> Loop handles	Tabaqat Fahl (Pella)	Walmsley <i>et al.</i> 1993: 217 (fig. 24:1)



430



431



432

Abbasid pottery examples. Lids (nos. 430 and 431) and jug (no. 432).

Smaller jars had thinned lip profiles, high necks, and neck filters atop globular or piriform bodies with high, vertical loop handles (some with knob appliqués). Bases were disk, ring-with-disk, or flat. Larger jars were of unribbed and undecorated ware with rounded lip profiles, conical necks, and indented loop handles with deeply pinched body attachments. Storage jars were of very heavy ware (commonly deeply impressed), and possessed rounded or flattened lips. They commonly had flat bases and four handles. Water jars had steeply sloping shoulders. **Jugs:** Jug forms included flasks, juglets, and jugs. Flask forms included the "pilgrim" flask which was characterized by a rounded lip profile, a slightly thickened rim profile, a straight (sloping) rim inflection, a globular wall profile, a conical neck, two loop handles located on the shoulder, and a curved (rounded) base. Smaller jugs were very similar to smaller jars. Some jugs were moldmade and inscribed. **Miscellaneous vessels:** Miscellaneous forms included channel-nozzle lamps, molded lamps, and lids. Channel-nozzle lamps had pointed nozzles, pointed handles, and were decorated with molded grapevine or other ornate designs around the filling hole. Casseroles possessed lids. **Vessel parts:** Bases were disk, flat, omphalos, or ring. Handles included ledge, loop (high vertical or knobbed on top), and pointed handles.

The Fatimid Period

"Archaeologically, the Fatimid period is little known in Transjordan and, at present, published ceramics from the mid-10th to 12th centuries are few" (Brown 1991: 229). Much of the Fatimid ceramic repertoire closely resembled that of the preceding periods, especially the Abbasid period. Fatimid period imports arrived in Transjordan from elsewhere in Syro-Palestine, Syria, Mesopotamia (Iran and Iraq), and the Far East (China). The following characterization is based on the contextual study of the Kerak Plateau by Brown (1991), as well as Whitcomb (1988), and personal communication from project consultants.

Technique. Wares: Ware colors included cream, buff, brown, yellow, orange, pink, and red, as well as deep orange-red on cooking vessels. Wares were thin and smooth. Arab-Sasanian ware was imported from Basra. Chinese import wares were Yue, Qingbai, coarse green, and white. Luster wares, probably imports from Iran or Egypt, were either monochrome or polychrome. Handmade bowls and smaller jars which appear to be nesting sets of vessels are sometimes referred to as "tupperware" by modern archaeologists. These tupperware vessels were made with

little or no organic temper and retained reed-mat impressions on their bases. Larger pieces were better finished, but smaller ones were crude. Some tupperware vessels were decorated with red paint in a geometric style.

Inclusions and Levigation: Clay was either well-prepared with fine inclusions, or of coarse and gritty fabric with calcite inclusions, depending on the vessel. **Manufacturing:** Most Fatimid period forms were wheelmade.

Handmade vessels, a small minority of those manufactured, consisted of basins, storage jars, and tupperware vessels. Lamps were moldmade.

Firing: Clay firing was generally very good, rarely exhibiting grey cores.

Surface treatment. **Slipping:** Slip colors included orange-pink, red, red-brown, white, and dark charcoal. Wet smoothing was utilized. **Glazing:** Glazing, although used on a very small minority of the total vessels produced in this subperiod, continued to be a primary form of decoration during the Fatimid period including both clear and colored glazing. Glazing styles included monochrome, polychrome "splash," Fayyumi, and Sgraffito. Clear glazing over dark red ware appeared purple or brown on cooking pots. Polychrome "splashed" glazing occurred in yellow, brown, green, and white on plate interiors. Imported jars were sometimes glazed blue-green (Arab-Sasanian ware). **Painting:** Light red painting was sometimes used. **Appliqué:** Appliqué was evidenced. **Impressing:** Finger impressing was done on basin rims while deep, pleated impressing was modeled on storage jar rims. **Incising:** Ribbing was common on jugs and smaller forms.

Forms (pottery examples 433-451). **Bowls:** Bowl forms included basins, bowls, casseroles, cooking pots, cups, hemispherical bowls, plates, and platters. Bowl lip profiles included rounded, squared, thickened, and thinned styles. Bowl rim profiles included doubled, flattened, and thickened styles. Bowl rim inflections were generally angular or straight. Bowl wall profiles included biconical, conical, cylindrical, and globular styles. Basins had thickened rims and flat bases. Bowls were both plain and glazed. Glazed bowls had vertical or angular rim inflections and conical or globular wall profiles. Casseroles and cooking pots were characterized by brick red or red-orange ware and occasionally by interior glaze. Casseroles were generally flat-bottomed with angular, thickened rims. They typically had either horizontal strap or wavy ledge handles. Cooking pots were commonly more globular and neckless with straight (vertical) or angular (inverted) rim inflections. They often had horizontal handles. **Jars:** Jar forms included jars and storage jars. Jar lip profiles included rounded, thickened, and thinned styles. Jar rim profiles were generally simple.

No.	Rest (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
433	Bowl (cup)	Open	very small	very deep	<i>Technique: Ware:</i> Color: red; <i>Inclusions:</i> Common medium sand	Aqaba	Whitcomb 1988: 218 (fig. 6:m)
434	Bowl (platter)	Open	large	shallow	<i>Technique: Ware:</i> Color: buff-light orange; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment: Glaze:</i> Ext., int., and base greenish-yellow	Aqaba	Whitcomb 1988: 219 (fig. 7:k)
435	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Type: tupperware; Color: light orange; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment: Painting:</i> Ext. and rim light red	Aqaba	Whitcomb 1988: 216 (fig. 5:b)
436	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: orange-red; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment: Glaze:</i> Ext. white; int. yellow, dark yellow, white, and brown	Aqaba	Whitcomb 1988: 219 (fig. 7j)
437	Bowl	Open	medium	intermediate	<i>Technique: Ware:</i> Color: buff-orange-tan; <i>Inclusions:</i> Moderate sand and chaff	Aqaba	Whitcomb 1988: 218 (fig. 6:c)
438	Bowl	Open	large	intermediate	<i>Technique: Ware:</i> Type: Sgraffiato; Color: red-orange; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment: Glaze:</i> Ext., int., and base clear, green, and yellow; <i>Slip:</i> White	Aqaba	Whitcomb 1988: 219 (fig. 7r)
439	Bowl	Open	small	intermediate	<i>Technique: Ware:</i> Color: dark red; <i>Inclusions:</i> Abundant medium white sand; <i>Firing:</i> Overfired	Aqaba	Whitcomb 1988: 218 (fig. 6j)
440	Bowl	Open	large	intermediate	<i>Technique: Ware:</i> Color: red; <i>Inclusions:</i> Very common moderate sand; <i>Firing:</i> Overfired	Aqaba	Whitcomb 1988: 218 (fig. 6:d)



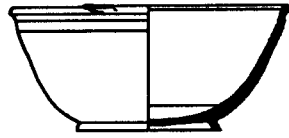
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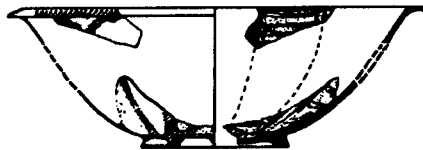
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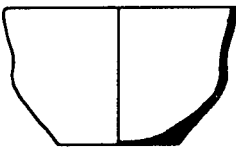
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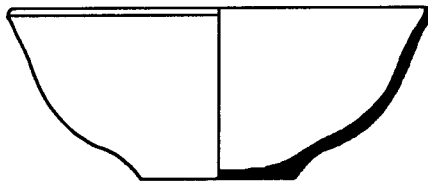
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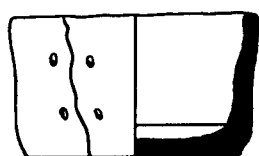
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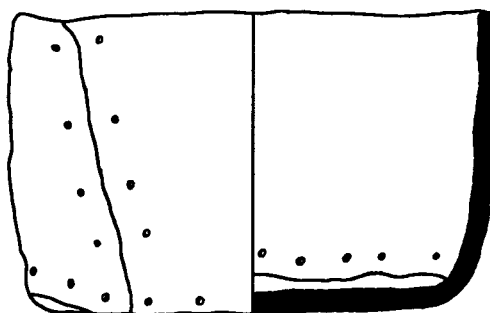
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Fatimid pottery examples. Bowls (nos. 433-440).

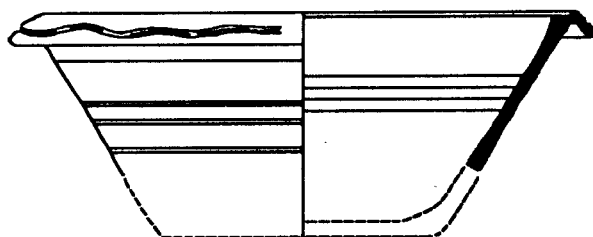
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
441	Bowl	Open	medium	intermediate	<i>Technique:</i> Ware: Type: tupperware; Color: buff-orange; <i>Inclusions:</i> Moderate medium sand and common chaff; <i>Comments:</i> Repair holes	Aqaba	Whitcomb 1988: 216 (fig. 5g)
442	Bowl	Open	large	intermediate	<i>Technique:</i> Ware: Type: tupperware; Color: orange-tan; <i>Inclusions:</i> Moderate medium sand; <i>Comments:</i> Repair holes	Aqaba	Whitcomb 1988: 216 (fig. 5h)
443	Bowl	Open	large	intermediate	<i>Technique:</i> Ware: Color: buff-orange; <i>Inclusions:</i> Moderate medium sand and mica; <i>Surface Treatment:</i> Glaze: Int. and rim dark green; <i>Comments:</i> Vessel <i>Dimensions:</i> Diam. 46 cm	Aqaba	Whitcomb 1988: 218 (fig. 6f)
444	Bowl	Open	large	intermediate	<i>Technique:</i> Ware: Type: tupperware; Color: orange-tan; <i>Inclusions:</i> Common medium sand; <i>Surface Treatment:</i> <i>Incising:</i> On rim; <i>Notching:</i> On rim	Aqaba	Whitcomb 1988: 216 (fig. 5j)



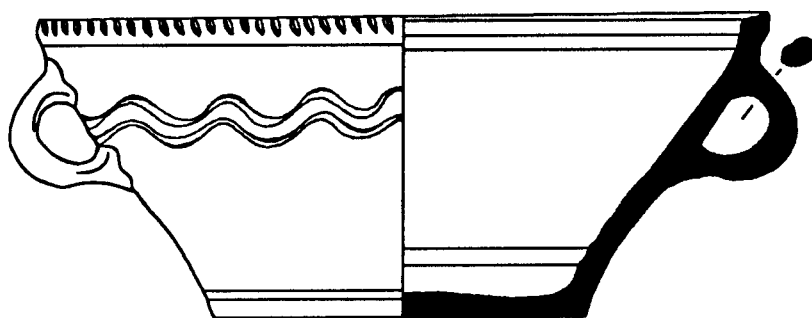
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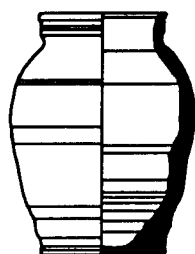


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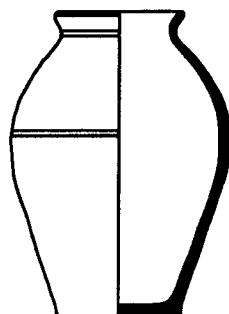
Fatimid pottery examples. Bowls (nos. 441-444).

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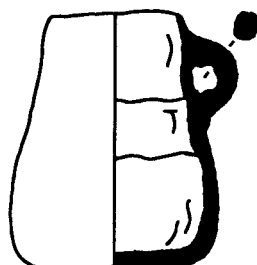
No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
445	Jar	Closed	—	short	<i>Technique: Ware:</i> Color: cream; <i>Inclusions:</i> Common medium sand; <i>Comments:</i> Warped	Aqaba	Whitcomb 1988: 215 (fig. 4:c)
446	Jar	Closed	—	short	<i>Technique: Ware:</i> Color: red; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment: Slip:</i> Ext. cream	Aqaba	Whitcomb 1988: 215 (fig. 4:a)
447	Jar	Closed	—	short	<i>Technique: Ware:</i> Type: tupperware; Color: orange; <i>Inclusions:</i> Moderate medium sand and mica; <i>Surface</i> <i>Treatment: Wet smoothing</i>	Aqaba	Whitcomb 1988: 216 (fig. 5:c)
448	Jar	Closed	—	tall	<i>Technique: Ware:</i> Type: tupperware; Color: buff-tan- orange; <i>Inclusions:</i> Moderate medium sand; <i>Surface Treatment:</i> <i>Wet smoothing</i>	Aqaba	Whitcomb 1988: 216 (fig. 5:d)



445

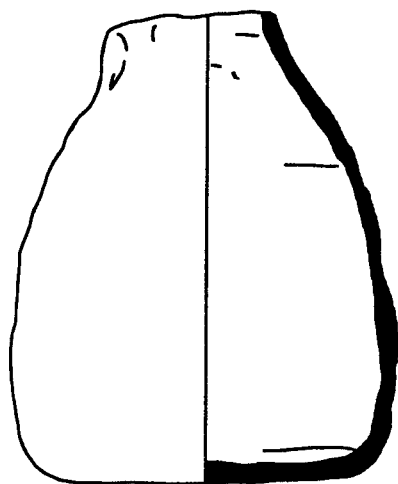


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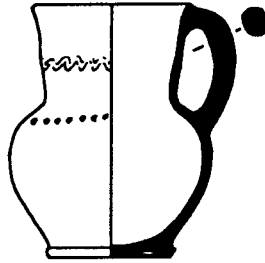


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Fatimid pottery examples. Jars (nos. 445-448).

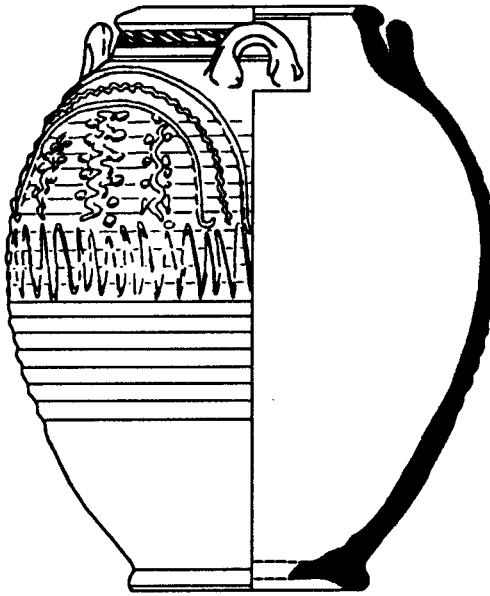
286 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
449	Jug	Closed	--	short	<i>Technique: Ware: Color: buff; Inclusions: Moderate medium sand; Surface Treatment: Incising</i>	Aqaba	Whitcomb 1988: 215 (fig. 4b)
450	Jar	Closed	--	tall	<i>Technique: Ware: Color: cream-yellow; Inclusions: Moderate medium sand; Surface Treatment: Applied; Glaze: Ext. dark blue-green; int. blue-green and white; Incising</i>	Aqaba	Whitcomb 1988: 213 (fig. 3a)



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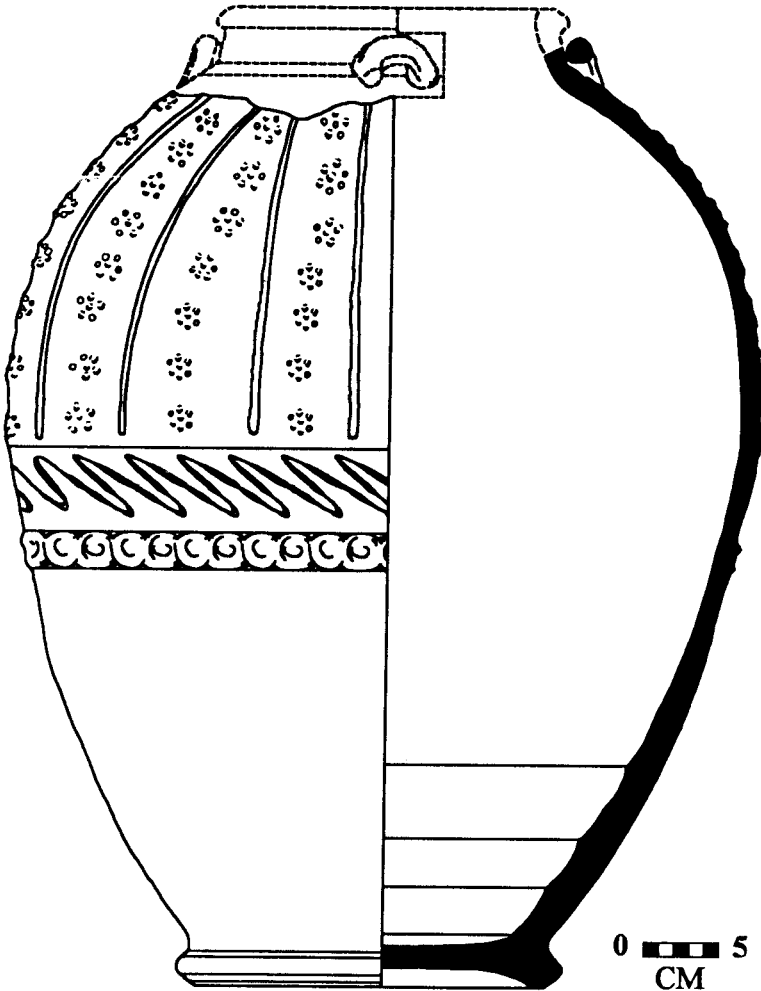
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450

Fatimid pottery examples. Jug (no. 449) and jar (no. 450).

No.	Root (branch)	Form	Diameter	Depth/Height	Description	Site	Bibliography
451	Jar	Closed	—	very tall	<i>Technique: Ware: Color: cream; Inclusions: Sand; Surface Treatment: Applique; Glass: Ext. blue-green; int. blue-green and white; Incising</i>	Aqaba	Whitcomb 1968: 213 (fig. 3.b)



451

Fatimid pottery example. Jar (no. 451).

Jar rim inflections included angular, curved, and straight styles. Jar wall profiles were almost entirely globular while some "tupperware" jars were conical in wall profile. Jar neck profiles were generally short and conical. **Jugs:** Jug forms included juglets and jugs. Jug lip profiles included rounded styles. Jug rim profiles included simple styles. Jug rim inflections included straight. Jug wall profiles included globular styles. Jug neck profiles included conical styles. Jugs were ribbed with conical neck profiles, oval-sectioned handles, and string-cut bases. They were sometimes glazed and possessed comb decorations. **Miscellaneous vessels:** Miscellaneous forms included lamps. Lamps were moldmade. **Vessel parts:** Bases were flat (sometimes string-cut). Handles included horizontal or vertical straps, wavy ledge, and oval-sectioned loop styles.

The Late Islamic Periods

In the past, it was thought that Ayyubid-Mamluk pottery was completely different from preceding Early Islamic pottery because of changes in manufacture and decoration. It is now understood that some of these changes were out-growths of the preceding period.

There is enough current evidence to at least suggest that some of the apparent radical change that characterize Ayyubid-Mamluk assemblages can in fact be traced to developments within the Early Islamic period (Brown 1991: 232).

For an extremely detailed analysis of the construction techniques and decorations of Islamic period pottery, see Franken and Kalsbeek 1975 (*cf.* Sauer 1976 and Brown 1989 for periodization).

Some of the sites currently associated with the Late Islamic period pottery culture in Transjordan include: 'Ajlun, al-Lajjun, al-Rujum, al-Wuayra, Amman, 'Aqaba, 'Ara'ir ('Aro'er,) Busra, Dayr 'Alla, Dhiban (Dibon), Fayfah (Feifeh), 'Iraq al-Amir, Jarash, Karak, Khirbat 'Ayn Janyn, Khirbat al-'Al, Khirbat Dohalah al-N'aymah, Khirbat Farys, Listib, Madaba, Maqabalayn, Mugharat al-Wardah, Petra (Sela'), Qal'at al-Rabad, Quwayliba (Abila), Rujm al-Kursi, Safi, Shobak, Shunat Nimrin, Tabaqat Fahl (Pella), Tall Abu Qa'dan, Tall Abu Sarbut, Tall al-'Umayri, Tall Fandi, Tall Hisban, Tall Nimrin, Tall Sahl as-Sarabat, Tall Siran, Tawahin al-Sukkar I, Udruh, and Umm Qays, as well as smaller sites along the Wadi Arab, Wadi al-Hasa, Wadi al-Yabis, Wadi 'Isal, and Wadi Ziqlab.

The Ayyubid-Mamluk Period

The pottery of the Ayyubid-Mamluk period was distinguished by a

high percentage of handmade vessel forms and by a proliferation of painted geometric decorations. This trend began in the 11th and 12th centuries in Fatimid and Crusader contexts.

From the Hellenistic through the Early Islamic periods the dichotomy between wheel-thrown vessels, which constituted the majority of ceramics, and handmade vessels was primarily functional. Large vats, basins, and storage jars tended to be hand-constructed, while virtually all other household ceramics were wheel-thrown. During the Ayyubid-Mamluk period this coexistence of wheel-thrown and hand-constructed ceramics continued, yet there were major changes in both the proportions and kinds of vessels manufactured with these techniques. In contrast to the previously established trend, handmade pottery heavily dominates Ayyubid-Mamluk assemblages, while wheel-thrown wares play a much lesser role. Further contrast is emphasized by the fact that the same general repertoire of forms was produced by both technologies. ... Thus, by the inception of the 13th century, the association between (1) manufacturing techniques, and (2) specific vessel forms, which had long characterized ceramic manufacture in the southern Levant, is no longer evident (Brown 1991: 240).

The pottery assemblage of the Ayyubid-Mamluk period can best be described by first dividing the corpus into wheelmade and handmade technologies (and in some cases, moldmade), then continuing with further description as done in the previous period characterizations. Characterization of this period has been taken from J. Sauer (1982: 335) and the contextual study of the Kerak Plateau by Brown (1991).

Technique. Ware: Wheelmade: Four types of wheelmade wares have been identified: (1) glazed ware, (2) plain ware, (3) plain industrial ware, and (4) Sgraffito ware. Wheelmade ware colors included light-colored wares, mostly buff or pink tones, and red wares. The hard, thin, red, glaze-covered Sgraffito ware included designs carved through a light slip into the darker clay surface below. *Handmade:* Handmade ware colors included brown; less typically, orange and buff. *Moldmade:* Ware colors included pink, white, and red, and may be glazed or unglazed. *Inclusions: Wheelmade:* Wheelmade wares were generally homogenous. *Handmade:* Ayyubid-Mamluk handmade wares were characterized by irregular vessel wall thicknesses; large quantities of coarse, poorly integrated organic and mineral tempers; surface crackling; and occasional surface spalling. Organic and mineral inclusions were dominant and appeared in combination. The density of visible tempering agents was unusually high, often constituting between 10% and 30% of fabric. Great quantities of grog was used as temper. The handmade cooking pots were made with large

amounts of calcite temper. **Levigation:** *Wheelmade:* Buff and pink wares were generally well prepared. Hard, thin, dark red fabrics were also well levigated as was the paste of softer lighter red ware. The glazed wares were made of well prepared clays as well. **Manufacturing:** *Wheelmade:* Sugar pots, water jugs, and some bowls were wheelmade. *Handmade:* A large percentage of Ayyubid-Mamluk vessels were handmade, sometimes using pieces of cloth in the production process (see Homès-Frederiq and Franken 1986: 6). Rudimentary construction techniques included coiling and partial use of rotational devices. Modeling with clay slabs was more a common technique, especially in making painted closed forms. The presence of cloth impressions on the inner surface of some vessels implies that cloth was used in the manufacturing process—perhaps a sack filled with sand and used as a form. **Moldmade:** Mold or cast-made pottery included lamps, some bowls, and some flasks. **Firing:** In general, firing quality during the Ayyubid-Mamluk period was medium. Cores sometimes occurred. Glazed ware vessels were evenly fired. *Wheelmade:* Buff and pink wares were well fired. *Handmade:* The firing of handmade vessels varied widely: some poor and some excellent, but the majority were well fired although a core was sometimes present.

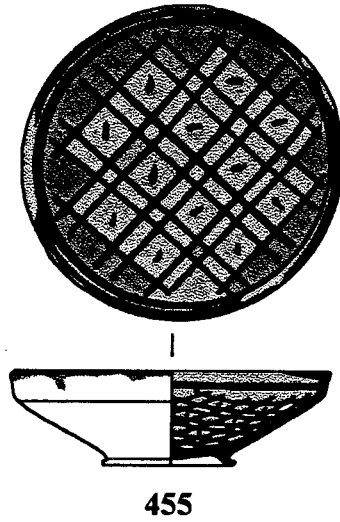
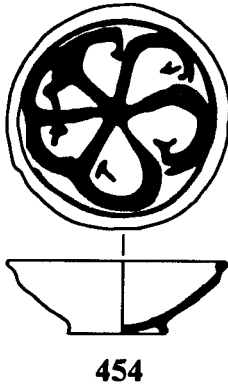
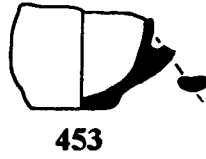
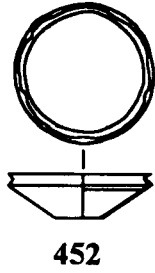
Surface treatment. Due to changes in manufacturing technique as well as surface treatment, on close examination, much of the Ayyubid-Mamluk pottery looked very different from that of the preceding period.

Several aspects of 13th to 15th century assemblages including the vast quantities of handmade wares, the widespread use of geometric painted decorations, and the lesser, but consistent, presence of wheel-thrown plain, and monochrome glazed, wares stand in sharp contrast to the ceramic history of the region during the Umayyad and Abbasid periods (Brown 1991: 232).

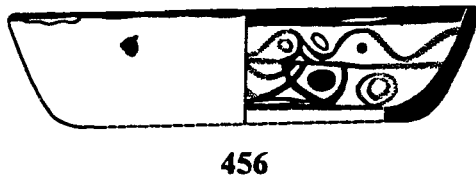
Slipping: Slip-trailing was sometimes applied prior to glazing. *Handmade:* The handmade cooking pot was often red-slipped. **Burnishing:** *Wheelmade:* Burnishing on wheelmade vessels was uncommon during the Ayyubid-Mamluk period. *Handmade:* Handmade cooking pots were also burnished by hand. **Glazing:** Glazing, once considered the hallmark of the Ayyubid-Mamluk period, is now known to have been used earlier (Brown 1991: 234). Glazed wares were imported. Bowls were often monochrome glazed in green, yellow, or brown, and molded designs were often present under the glaze. Underglaze painting and slip-trailing were also put on many glazed bowls. *Wheelmade:* Wheelmade vessels could be either unglazed (both industrial and domestic) or glazed (bowls with Sgraffito).

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No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
452	Bowl	Open	small	intermediate	<i>Technique: Ware: Color: red; Surface Treatment: Incising: Grooving on ext.; Comments: Vessel Parts: Carinated wall profile, slightly concave base; wheel traces on back</i>	Petra	Zayadine 1982: 373 (fig. 6.1)
453	Bowl (cup)	Open	very small	deep	<i>Technique: Ware: Color: 7.5YR 7/4 (pink); Comments: Vessel Dimensions: Diam. 7.5 cm</i>	al-Wu'ayra	Brown 1987: 286 (fig. 10:27)
454	Bowl	Open	small	intermediate	—	Tall Hisban	Lawlor 1980: 97 (fig. 2:575)
455	Bowl	Open	medium	intermediate	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 72:494, 1019
456	Bowl	Open	large	intermediate	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 74:940



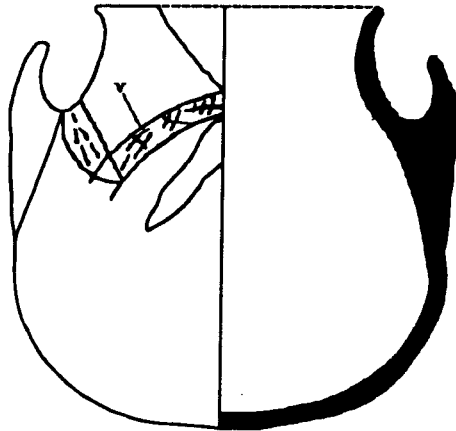
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Ayyubid-Mamluk pottery examples. Bowls (nos. 452-456).

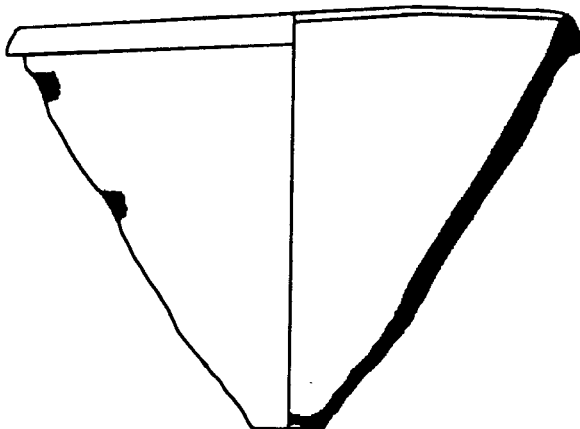
294 ANCIENT POTTERY OF TRANSJORDAN

No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
457	Bowl (cooking pot)	Open	large	deep	--	Tabaqat Fahl (Pella)	Smith 1973: pl. 59:172
458	Bowl (sugar pot)	Open	large	deep	--	Tall Abu Sarbut	Haas, LaCro, and Steiner 1992: 338 (fig. 7)



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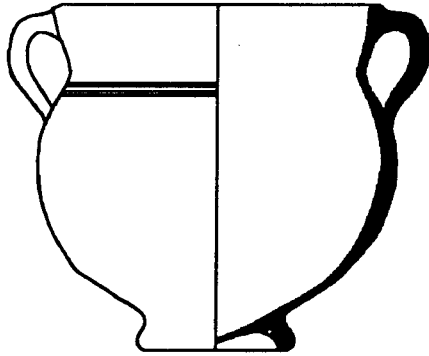
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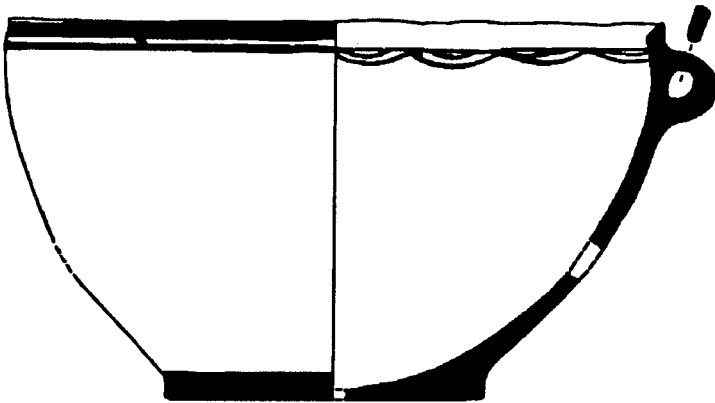
Ayyubid-Mamluk pottery examples. Bowls (nos. 457 and 458).

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
459	Bowl	Open	medium	deep	Technique: <i>Firing</i> : Light (red)	Tall Dair 'Ala	Franken and Kalsbeek 1975: 112 (fig. 27)
460	Bowl	Open	large	intermediate	Technique: <i>Manufacture</i> : Handmade	Tall Dair 'Ala	Franken and Kalsbeek 1975: 179 (fig. 55)



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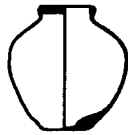
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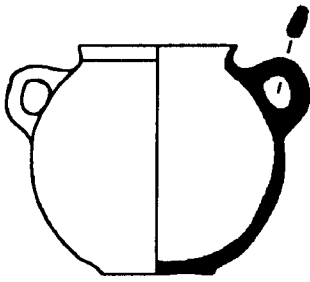
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Ayyubid-Mamluk pottery examples. Bowls (nos. 459 and 460).

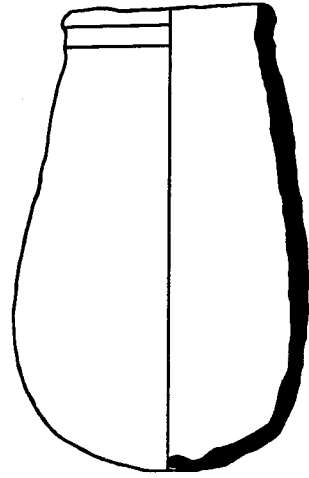
No.	Rest (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
461	Jar	Closed	—	very short	—	Tall Hisban	Lawlor 1980: 96 (fig. 1:1299)
462	Jar	Closed	—	short	<i>Technique: Manufacture:</i> Handmade	Tall Dair 'Alla	Franken and Kalsbeek 1975: 201 (fig. 74)
463	Jar (sugar jar)	Closed	—	tall	—	Tall Abu Sarbut	Haas, LaCro, and Steiner 1992: 338 (fig. 8)
464	Jar (cooking pot)	Closed	—	tall	<i>Technique: Firing:</i> Light (red); <i>Surface Treatment: Incising:</i> Ribbing	Tall Dair 'Alla	Franken and Kalsbeek 1975: 110 (fig. 26)



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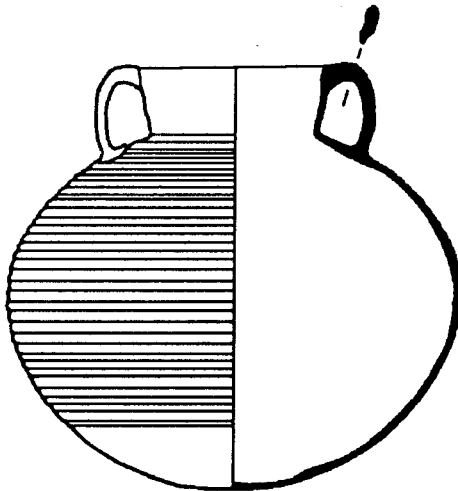


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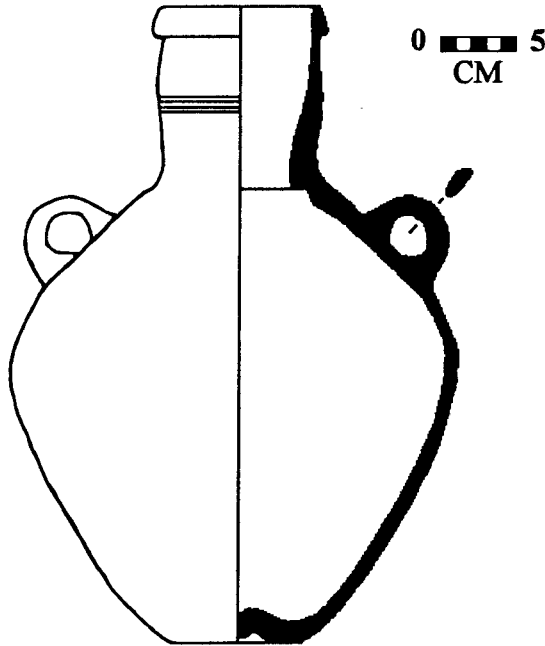
Ayyubid-Mamluk pottery examples. Jars (nos. 461-464).

300 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
465	Jar	Closed	—	tall	—	Tabaqat Fahl (Pella)	Smith 1973: pl. 73:24
466	Jar	Closed	—	tall	Technique: <i>Firing</i> : Light (red)	Tall Dayr 'Alla	Franken and Kalsbeek 1975: 114 (fig. 28)



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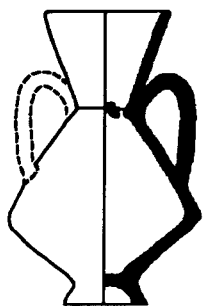


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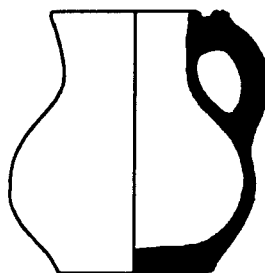
Ayyubid-Mamluk pottery examples. Jars (nos. 465 and 466).

302 ANCIENT POTTERY OF TRANSJORDAN

No.	Root (branch)	Form	Diameter	Depth/ Height	Description	Site	Bibliography
467	Jug	Closed	--	short	<i>Technique: Firing: Light (red)</i>	Tall Dayr 'Alla	Franken and Kalsbeek 1975: 116 (fig. 29)
468	Jug	Closed	--	short	<i>Technique: Ware: Color: pink- buff, Manufacture: Handmade; Firing: Poor; Surface Treatment: Painting: Ext. brown</i>	Dhiben (Dibon)	Winnett and Reed 1964: pl. 64:1
469	Jar	Closed	--	tall	--	Tabaqat Fahl (Pella)	Smith 1973: pl. 71:480



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Ayyubid-Mamluk pottery examples. Jugs (nos. 467 and 468) and jar (no. 469).

A variety of locally-used domestic pottery forms were left unglazed. Glaze treatments on wheelmade vessels included monochrome glazes of yellow and green and bichrome glazing of brown interior with green exterior. The quality and consistency of Ayyubid-Mamluk glazes were relatively poor. Bases with glazing were uncommon. Some glazed wheelmade vessels had a white underglaze slip. *Moldmade*: A glazed moldmade ware was uncommon. *Painting*: *Wheelmade*: Wheelmade vessels were both painted or unpainted. Some domestic vessels were both painted and glazed. *Handmade*: Handmade vessels were also either painted or unpainted. The paint was usually a dark color (purple, brown, or black) applied in geometric designs over much of the surface of the vessel. Exterior surface colors associated with painted wares were white-cream-slipped or pink-slipped although light-fired surfaces without slips were also common. Painted wares were often decorated with geometric designs in monochrome black as well as bichrome red and black. Monochrome painting was usually red. The artistic quality and precision of the painting varied considerably. Patterns and motifs included oblique bands of enclosed and opposing scrolls, a series of wavy lines (common), checkerboard patterns (common), dot-and-net patterns, dot-in-checkerboard patterns, scrolls, sequences of spirals (very common), diamond-net patterns, simple checkerboard within a feathered triangle, large diamond spirals, and stars (uncommon).

Impressing: *Handmade*: Finger impressing was applied to handmade vessels. *Incising*: Water pots were frequently puncture-incised to form delicate surface patterns. Grooving was utilized. Sugar pots were often ribbed. *Wheelmade*: Sgraffito incising on wheelmade vessels continued in the Ayyubid-Mamluk in two styles: narrow linear patterns coated with yellow glaze, and more commonly, broader patterns cut through a white-slipped surface and covered with mottled yellow and green glaze. *Molding*: Molded designs were often present under the glaze.

Forms (pottery examples 452-469). Forms in the Ayyubid-Mamluk included various wheelmade vessels (both industrial and domestic), handmade vessels (various forms), moldmade vessels (infrequent), and imported wares (mostly from Syria, but also Egypt and Southeast Asia, cf. Brown 1991: 232). New forms which were characteristic of the Ayyubid-Mamluk period were the "sugar vessels." One style of sugar vessel was a squat, conical vessel (called a "sugar pot" or "sugar vat") while the other style was an elongated jar (called a "sugar jar" or "sausage jar"). Sugar vats were bowl forms while sugar jars were jar forms.

Bowls: Bowl forms included bowls, cooking pots, cups, plates, and sugar vats (also called "sugar pots"). Bowl lip profiles included flattened, rounded, squared (including angular), and thickened styles. Bowl rim profiles included flattened, offset, and thickened styles. Bowl rim inflections included bi-angular, curved, and straight styles. Bowl wall profiles included biconical, carinated, conical, and globular styles. Glazed bowls and plates sometimes had ring bases. "Large-eared" cooking pots had sloping rim inflections, rounded bases, and enormous horizontal loop handles. *Wheelmade:* The unglazed, wheelmade sugar pots generally had wide mouths, globular wall profiles, and sloping rim inflections. Wheelmade water pots had thickened necks, neck filters, double loop handles, and ring bases. *Handmade:* Handmade bowls were sometimes characterized by squared lip profiles and conical-to-nearly cylindrical wall profiles. *Moldmade:* Moldmade vessels included glazed bowls with exterior relief decorations and a bichrome (yellow exterior and green interior) or monochrome glaze (green), but were uncommon in Transjordan. **Jars:** Jar forms included cooking pots, jars, storage jars, and sugar jars (also called "sausage jars"). Jar lip profiles included flattened, rounded, and thickened styles. Jar rim profiles were generally either simple or thickened. Jar rim inflections included angular, curved, and straight styles. Jar wall profiles included biconical, globular, and piriform styles. Jar neck profiles included conical, curving, and cylindrical styles. *Wheelmade:* Wheelmade sugar jars were generally deep, bag-shaped jars often ribbed, possessing omphalos bases. They were unglazed. *Handmade:* Handmade jars had flattened rim profiles, sloping rim inflections, concave disk bases, flattened loop handles, and sometimes had spouts. Handmade painted wares were widespread in Transjordan. Various sizes of tall-necked jars with two handles and a flat or disk base were commonly decorated with linear and geometric painted designs often over the whole exterior and handle. Horizontal loop handles on handmade vessels were also often painted. **Jugs:** Jug forms included juglets and jugs. Jug lip profiles included rounded and thickened styles. Jug rim profiles included pinched, simple, and thickened styles. Jug rim inflections were generally straight. Jug wall profiles included biconical and globular styles. Jug neck profiles included conical and cylindrical styles. *Wheelmade:* Unglazed, wheelmade, tall-neck jugs were often made of red-orange fabric with brick-red slip, horizontally hand-burnished on the exterior. Buff and white ware water jugs were not burnished. *Handmade:* Handmade jugs had flattened rim profiles, sloping rim inflections, concave

disk bases, flattened loop handles, and sometimes had spouts. Handmade painted jugs with one handle and disk or flat bases were painted similarly to jars. **Miscellaneous vessels:** Miscellaneous forms included fire bombs and lamps. **Moldmade:** Moldmade piriform "fire bombs" (relatively rare in Transjordan) were made of hard, dense metallic fabric and thick heavy vessel walls. They were typically stamped with designs, carved with initials or other graffiti on the exterior. Widespread from Russia-to-Afghanistan-to-Egypt, their function has been variously interpreted as containers for transporting mercury or perfumes, "fire-blowers," or grenades. Moldmade lamps were relief-decorated in a number of designs and inscriptions. Lamp handles were usually either low knobs of clay or higher attachments with pointed and curved profiles. **Vessel parts:** Bases included flat (concave or flat), curved (pointed), omphalos, and ring (high or low) styles. Handles included knob (on lamps), various loop (double, flattened, horizontal, large- or elephant-eared), or pointed and curved (on lamps) styles.

GLOSSARY

This glossary provides concise definitions of selected archaeological and ceramic terms. Synonymous terms are found after the abbreviation "aka" ("also known as"). Definitions have been gathered from numerous sources.

A

Alabastron. A very short-to-short, elongated, narrow-necked jug mimicking the early form made from alabaster (stone). It was used for the storage of perfumes and precious oils and often had a flattened lip useful for applying perfume without wasting it.

Amphora(e). A tall-to-very tall jar with two handles, normally on opposing shoulders. An amphoriskos is a very short-to-short version of the amphora.

Amphoriskos (-oi). See Amphora(e).

Analytical sherds. See Diagnostics.

Ansulate. Having to do with handles. Mono-ansulate is one handle and bi-ansulate is two handles.

Anthropomorphic. Form characteristic which includes elements of the human body.

Appliqué. See Surface treatment.

B

Balsamarium. See Bottle.

Band (decoration). See Surface treatment.

Bar handle. See Handle.

Barbotine. See Surface treatment.

Base. Part of the vessel which provides support. There are many specialized forms (see table 2 and fig. 7):

Concave base is a flat base with an irregular concave depression.

Disk base is flat base with articulated angular end points.

Flat base possesses a horizontal surface.

Footed base is an elevated base which has a horizontally-flattened extension at its bottom (aka: pedestal).

Knob base is an elevated base ending in a small, round knob (aka: button base).

Loop base is an elevated base ending in three or more loops.

Omphalos bases have an impressed concavity in the base.

Pod base is an elevated base (generally with three feet). The vessel rests equally on each foot, in the manner of a tripod.

Pointed base is a sharply curved base, the cone shape of which terminates in a single point. Vessels with these bases were normally stored in racks, on tripods stands, or placed in holes in the ground.

Ring base is a circular clay band encircling the bottom of the vessel and often occurred on wheelmade vessels. This base may also be elevated. Ring bases were both wheelmade and handmade.

Round base is a curved base with a semicircular cross-section.

Split ring base is a ring-type base made by pinching the sidewall and floor of the vessel together and extruding the base ring.

String-cut base is a term used to describe a flat base which was cut from a turning potter's wheel using a tightly stretched string. This method of cutting produced a characteristic off-center spiral in the clay of the base.

Stump base is an elevated base terminating in a thick, solid stub, which may be flat or pointed.

Trumpet/ogee base is an elevated base possessing a conical shape and is attached to the body of the vessel at the smaller end of the cone.

Basin. A medium-to-large (diameter), intermediate-to-deep bowl.

Beaker. See Cup.

Beer jug. See Beer strainer.

Beer strainer. A very short-to-tall spouted or necked jar. The body wall at the spout or inside the neck is punctured to form a strainer (aka: beer jug).

Biconical. See Wall profile.

Body. Main part of the vessel between rim and base (aka: bod). There are many different forms (see table 1, and fig. 6).

Bottle. A very short-to-short jug (if it does have a pouring lip) or jar (if it does not have a pouring lip), often with a cylindrical body and generally without handles.

Balsamarium is a very short-to-short bottle, the implied function of which (to carry balsam), is not always based on analysis of its contents.

Unguentarium is a very short-to-short bottle used for conserving perfume oils, precious liquids, and balms.

Bow-rim jar. A jar constructed with an incurved rim inflection which formed a curved neck, characteristic of the Late Neolithic II period.

Bowl. The general term for an open vessel, with or without handles. Bowls are classified as

“very small” (maximum diameter < 10 cm.), “small” (maximum diameter 10-14.9 cm.), “medium” (maximum diameter 15-24.9 cm.), “large” (maximum diameter 25-75 cm.), or “very large” (maximum diameter > 75 cm.); and each of these may be “shallow” (vertical percent of the maximum diameter < 20%), “intermediate” (vertical percent of the maximum diameter 20-74.9%), “deep” (vertical percent of the maximum diameter 75-100%), or “very deep” (vertical percent of the maximum diameter > 100%).

Brazier. See Incense burner.

Buff. See Surface treatment, slip.

Burnishing. See Surface treatment.

Button base. See Base, knob.

C

Carination. Angular ridge around the body of a vessel (see Wall profile).

Casserole. See Cooking pot.

Censer. A bowl or jar vessel for burning incense (see Incense burner).

Chalice. See Footed bowl.

Characteristic sherds. See Diagnostics.

Churn. Closed, ovoid or lenticular vessel which is wider than it is high, with pouring lip and two handles enabling it to be suspended and swung back and forth.

Clay. Fine-grained earthy material composed of silica and alumina sometimes mixed with small amounts of iron and alkalis. It becomes plastic when mixed with water and hardens when heated (fired).

Closed. This describes a vessel, the minimum mouth diameter which is less than 50% of the vessel's maximum diameter (see fig. 12).

Coarse. See Ware.

Coilmade. See Manufacture.

Collared-rim. This very distinctive decoration which is found on storage jars of the LB II through Iron II periods, consists of a raised band or series of bands at the base of the neck. The name “collared-rim” is a misnomer as the decoration actually occurs at the junction of the neck and body of the vessel rather than on the rim *per se*. The characteristic collared-rim style continued into the Iron I period, developed somewhat, and then continued on into the Iron II period. This progression has encouraged the attempt to construct a typology of styles associating style with locale and, optimally, with ethnic group. The nature of such a typology is hotly debated (aka: collar rim.)

Color. See Surface treatment.

Column jar. A short-to-tall jar with column-shaped support often for the purpose of holding a dipper juglet.

Combing. See Surface treatment, incising.

Cooking pot. A small-to-large (diameter), shallow-to-deep bowl or short-to-tall jar which was used for food preparation (aka: cook pot or cookpot). It was often made of clay mixed with a large quantity of calcite or quartz powder, which improved its resistance to heat and to

temperature variation. The sides were of consistent thickness, a detail distinguishing it from other vessels. The bottom of the cooking pot was usually rounded. A casserole is an open, flat-based cooking vessel.

Cornet. See Cup.

Corpus. Literally "body," the word corpus refers to a collection of artifacts, in this case, a collection of pottery or sherds.

Crater. See Krater.

Cross-hatching. See Surface treatment, incising.

Cross-pattern (burnishing). See Surface treatment, burnishing.

Cup. A very small (diameter), deep-to-very deep bowl, with or without handles. There are many specialized forms:

Beaker is a cup with handles.

Cornet is a cup with a pointed base.

Goblet is a cup with a footed base.

Cup-and-Saucer. This vessel looks like a smaller bowl attached to the inside of a flatter, wider bowl. Some were lamps, while the function of others is currently undetermined.

Cylindrical. See Wall profile.

Cyma. A curved form as in the top or bottom of an "S"-shape.

D

Decanter. A short-to-tall jug, most often with sharp angular shoulders.

Decoration. Exterior manipulation of the pottery vessel generally for aesthetic reasons. There is a very close association between decoration and surface treatment which is generally functional in purpose. The division between aesthetics and function is often blurred. See also Surface treatment.

Denticulation. See Surface treatment, impressing.

Depressing. See Surface treatment, depressing.

Design burnish. See Surface treatment, burnishing.

Diagnostics. Rims, bases, handles, or body sherds (when decorated) are used by the archaeologist to determine the form or periodization of the whole piece (aka: analytical sherds, characteristic sherds, indicator sherds, and significant sherds).

Dipper jug (dipper juglet). A very short-to-short jug, with an elongated body and used for dipping into other vessels.

E

Everted. Everted refers to any vessel part which bends outward toward the exterior of the vessel.

Excising/Excision. See Surface treatment.

F

Fabric. See Ware.

Finger impression. See Surface treatment, impressing.

Firing. Firing refers to heating clay vessels to varying temperatures in order to harden and/or melt the vessel or its coating. Temperatures usually range between 700° and 900° C. Red-firing is a term used to describe clay containing iron and showing brown or reddish color when sufficient oxygen available during firing. White-firing shows creamy or whitish color after firing a vessel at low or high temperatures, regardless of the presence or the absence of oxygen. Black-firing indicates the use of red-firing clay, but during the cooling period there was no flow of oxygen through the kiln.

Hard is a descriptive word used with firing (see Moh's scale).

Medium is a descriptive word used with firing (see Moh's scale).

Oxidation/oxidizing atmosphere refers to clay which is fired in presence of oxygen thereby producing a reddish-pink fabric ceramic and/or surface.

Reduction/reducing atmosphere refers to clay which is fired in absence of oxygen thus producing a dark grey/black ceramic fabric and/or surface.

Soft is a descriptive word used with firing (see Moh's scale).

Terra cotta refers to the color of baked clay or to the baked clay itself.

Underfiring results in a black or grey "core" sandwiched between inner and outer pink-to-red edges.

Vitrification refers to clay which is transformed into a green or glassy state by the application of very high heat (often inadvertently) in the kiln; or in the case of glazes, by high heat plus the presence of fluxes that permits the applied glaze to fuse into a hard, impervious surface.

Fishplate. A medium-to-large (diameter), intermediate (depth) bowl with an internal impression and doubled (pendant) rim and is most commonly found during the Hellenistic period.

Flask. A very short-to-short jug with ovoid or lenticular body. A pilgrim flask is a specialized flask which is an Iron II form with a round body (with ovoid cross-section) typically with painted concentric circles, most often with two handles—one on each side of the neck.

Fluting. See Surface treatment.

Footed. See Base.

Footed bowl. A very small-to-large (diameter), shallow-to-very deep bowl with a footed base.

Chalice is a small-to-large (diameter), shallow-to-very deep footed bowl is a chalice.

Goblet. See Cup.

Formatore. The individual who reconstructs broken pottery.

Frying pan. See Pan.

G

Glaze. See Surface treatment.

Globular. See Wall profile.

Goblet. See Cup.

Grit. See Ware.

Grog. See Ware.

Grooving. See Surface treatment, incising.

H

Hand burnishing. See Surface treatment, burnishing.

Handmade. See Manufacture.

Handle. A handle is an accessory of the vessel, made of one or more coils, fixed at two points generally on the neck and the body. Handles styles include: bar, knob, ledge, loop, lug, and tubular styles (see table 2 and fig. 8). Bar, knob, and tubular are less common. Ledge handles may be envelope, plain, or wavy. Loop handles may be horizontal (flat, plain, or wishbone) or vertical (flat, including stirrup or strap; round including basket, ear, elliptical, grooved, or plain; stranded, including double or triple; or twisted). Lug handles may be pierced, plain, or pointed. It may be attached horizontally, vertically, or less often, obliquely.

Handle placement. The location of the handle on the vessel body is referred to as "handle placement." Handle placements may be rim-to-rim, rim-to-shoulder, neck-to-shoulder, shoulder-to-body, shoulder, or body (see table 2 and fig. 9).

Hemispherical. See Wall profile, globular.

Holemouth. A holemouth vessel has no rim or neck, rather the vessel lip attaches directly to the vessel wall. Most often, "holemouth" is used to describe a form of bowl or jar with a globular body or incurved wall profile the opening ("mouth") of which is simply a "hole."

Holemouth bowl. A very short-to-tall, open vessel with a holemouth opening.

Holemouth jar. A very short-to-tall, closed vessel with a holemouth opening.

I

Impressing/Impression. See Surface treatment.

Incense burner. A vessel, pierced with ventilation holes, used for containing charcoal (aka: brazier or censer).

Incising/incision. See Surface treatment.

Inclusion. See Ware.

Incrustation. The calcium-carbonate residue built up on the surface of the vessel.

Indicator sherds. See Diagnostics.

Inverted. Inverted refers to any vessel part which is bent toward the inside of the vessel.

J

Jar. A jar is a closed vessel used for storage, preservation, or transportation of goods. It was made with, or without, handles—typically two handles or none. In terms of size, jars may be “very short” (height < 15 cm), “short” (height 15-24.9 cm), “tall” (height 25-75 cm), or “very tall” (height > 75 cm).

Jerash bowl. A bowl with an outcurving rim inflection and ring base. It is characterized by its ware and by its geometric or naturalistic decoration. It is typical of the Jarash (aka: “Jerash”) area and of northern Transjordan in Iron II period.

Jug. A jug is a closed vessel designed for pouring, usually with a pouring lip. It may have one handle or none—typically, one. In terms of size, a jug may be “very short” (height < 15 cm), “short” (height 15-24.9 cm), “tall” (height 25-75 cm), or “very tall” (height > 75 cm).

Juglet. A very short jug.

K

Kiln. A kiln is used to fire pottery. It is made from bricks or packed clay (*terre pisé*) and could have many forms. Heat moves from firing chamber through a stack of pottery and then out through a hole or chimney. The design of the kiln serves to isolate heat and concentrate it around the stack of pottery.

Knob handle. See Handle.

Krater. A Greek name for a large (diameter), intermediate-to-deep bowl generally with a rounded biconical (“S”-curved) wall profile and a flat base, originally for mixing wine and water. Also spelled “Crater.”

L

Lagynos (-oi). A short-to-tall, very narrow-necked jug from the Hellenistic period.

Lamp. A vessel which is designed for lighting.

Leatherhard. A vessel which is allowed to air dry completely before firing reaches the leatherhard stage. Surface decoration (incision, slip, glaze, etc.) often added at this point before firing.

Ledge-handle. See Handle.

Lentoid. Descriptive of a vessel profile which is “lens-shaped.” This cross-section is particularly common of flasks and pilgrim flasks.

Levigation. See Ware.

Lime spalling. This describes the tendency of fragments of calcium carbonate temper to expand explosively when heated during firing, producing voids in the fabric and especially at the surface (common in the Iron I period).

Line (decoration). See Surface treatment.

Lip. The lip is the uppermost edge of the vessel wall. Normally a lip is on the very edge of

the rim or neck, which, in turn, is the uppermost portion of the body wall. Lips are described in term of their lip profile (see Lip profile).

Lip profile. The lip profile may be flattened, rounded, squared, thickened, or thinned (aka: beveled or peaked). See table 1 and fig. 3.

Lug. A lug is a clay element fixed to a vessel for decorative and/or functional purposes. It may function as a means of holding a vessel or, if pierced, for hanging it up or for attaching a lid. A vestigial lug was more for decoration only, while a handle was more functional (for lug handle styles, see Handle).

Luster. See Surface treatment.

Lustrous (slip). See Surface treatment, slip.

M

Manufacture. The process by which pottery was constructed.

Coilmade is the process of building the vessel walls utilizing a series of clay rings (coils) one on top of the next. The coils may then be smoothed or left to form ribs on the interior or exterior (or both) of the vessel wall.

Handmade pottery was made by hand.

Moldmade is the process by which certain vessels were produced with the aid of forms. Vessels produced by molds included lamps from many periods and a spectrum of vessels during the Late Islamic periods.

Wheelmade pottery was made with the aid of either a tournette or a weighted potter's wheel, depending on the archaeological period.

Metallic. Metallic clay describes a very hard fired clay. Metallic surface treatment describes a hand burnishing quality; see Surface treatment, burnishing.

Mohs' Scale. This arbitrary scale was invented by Fredrich Mohs (1773-1839) who established a range 1-10 (softer-to-harder). The test is applied by scratching the sherd: Hard = Mohs 7; Medium-hard = Mohs 4-6; Medium-hard, but powdery = Mohs 3; Medium-soft = Mohs 3-2; Soft = Mohs 2-1.

Mold. A form into which clay can be pressed into a certain shape and from which it shrinks loose when the clay dries. See also Surface treatment; manufacture.

Molding. See Surface treatment.

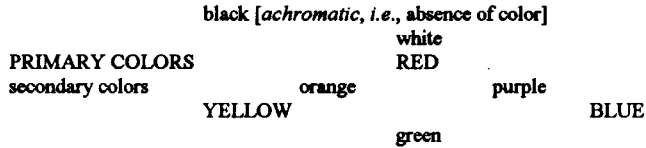
Mortarium (-ia). This is a footed bowl with thickened rim profile and outcurving rim inflection.

Munsell Notation System

I. THE MUNSELL COLOR NOTATION SYSTEM

The Munsell Color Notation System was developed to standardize color name terminology and to establish alpha-numeric expressions for standard color names. In the Munsell system, a color is described by three variables expressing its *hue*, *value*, and *chroma*.

Hue: relation to primary and secondary colors



Value: lightness/darkness; 10 = absolute white, 0 = absolute black
Chroma: saturation or brightness; 0 = weak, 20 = strong

Each color variation is designated by a unique combination of numbers and letters and a corresponding color name. Abbreviations “R”, “YR” and “Y” stand for, respectively, the hues “red,” “yellow-red” and “yellow.” The number preceding the abbreviation expresses the degree of the hue. The numbers following it designate color value and chroma. In the example “10YR 3/4 dark yellowish-brown”; “10YR” describes the degree of hue (“yellow-red”), “3” the value, and “4” the chroma.

II. ARCHAEOLOGICAL APPLICATIONS

Munsell notation can be used to designate any color in the spectrum. Archaeologists and ceramicists, however, use a limited range of Munsell terminology—about one fifth of the total possible combinations—to describe colors of excavated soil layers and ceramics. This range extends from red, reddish-yellow (“orange”)—to yellow, brown, and olive (“green”), along with the extremes of black and white. These hues are conveniently collected in the Munsell Soil Color Chart.

III. COMMON CERAMIC COLORS AND THEIR RELATION TO MUNSELL COLOR NOTATION

black	lt/dk grey*	white**	pink	lt/dk red	reddish yellow (orange)	lt brown	dk olive (green)
	10R			10R			10R
2.5YR	2.5YR			2.5YR		2.5YR	2.5YR
5YR	5YR	5YR	5YR	5YR	5YR	5YR	5YR
7.5YR	7.5YR	7.5YR	7.5YR		7.5YR	7.5YR	
10YR	10YR	10YR				10YR	
2.5Y	2.5Y						
	5Y						
<i>more white</i>			<i>more red</i>		<i>more yellow</i>		
<i>*low chromas in all hues</i>			<i>**high values in these hues</i>				

IV. POINT TO NOTE

- 1) Color readings should be taken of the dominant colors on the interior, exterior, and core of the sherd.
- 2) In citing Munsell notation, always give *both* color name and number. Neither alone is sufficiently descriptive.

3) Sherd colors may not match exactly those in the Munsell Chart. In such cases, cite the closest comparable color or chose two adjacent colors between which the color to be described falls. Such interpolations can be given numerical expression by using decimals for value or chroma. For example, a brown falling between "7.5YR 5/2 brown" and "7.5YR 4/2 brown" may be described as "7.5YR 4.5/2 brown." A brown falling between "7.5YR 5/2 brown" and "7.5YR 5/4 brown" may be described as "7.5YR 5/3 brown."

4) The selection of meaningful ceramic color readings requires some knowledge of pottery technology, especially how clay type and firing temperature affects ware and surface color.

To obtain a Munsell Soil Color Chart, write: Kollmorgen Instruments Corp., P.O. Box 230, Newburgh, NY 12551-0230.

N

Neck. This is the part of the vessel which joins the body to the rim. A neck profile may be conical (V-shaped or \wedge -shaped), curving (bicurving, incurving, or outcurving), or cylindrical (see table 2 and fig. 10).

Non-plastics. See Ware.

O

Ogee. This describes an "S"-shaped cross-section in regard to the vessel part profile.

Omphalos. See Base.

Open. This describes a vessel, the minimum mouth diameter of which is 50% or more of the maximum vessel diameter (see fig. 12).

Ovoid. See Wall profile, globular.

Oxidation. See Firing.

P-Q

Painting. See Surface treatment.

Pan. A pan is a shallow platter with flat bottom and long handle apparently used for food preparation (aka: frying pan).

Paring. See Surface treatment.

Pattern burnish. See Surface treatment, burnishing, design.

Pedestal base. See Base, footed.

Pie-crust (decoration). See Surface treatment, impressing.

Pilgrim flask. See Flask.

Piriform. See Wall profile.

Pithos (-oi). See Storage jar.

Plate. This is a very small-to-medium (diameter), shallow bowl.

Platter. This is a large-to-very large (diameter), shallow bowl.

Polish. See Surface treatment, burnishing.

Pouring lip. See Rim profile, pinched.

Profile. A term for the outline or cross-section of the vessel.

Puncture. See Surface treatment.

Pyxis. This is a very short-to-short squat, cylindrical jar with angular shoulders.

R

Red slip. See Surface treatment, slip.

Reduction. See Firing.

Relief. See Surface treatment.

Rhyton. This is a small zoomorphic jar, often shaped like a horse or mule head.

Ribbing. See Surface treatment, incising.

Ridging. See Surface treatment.

Rilled rim. See Rim profile, thickened.

Rim. Rim is the general term for that section of a vessel neck or body wall which is located immediately below the lip. It is sometimes confused with the "lip." There are several specialized shapes called rim profiles. Rim descriptions consist of (1) rim inflection, (2) rim profile, and (3) lip profile, *i.e.*, "vertical, thickened rim with a flattened lip."

Rim inflection. Rim inflection is the angle at which the rim continues into the body wall (see table 1 and fig. 4). Rim inflection is not to be confused with rim stance (the angle of the rim relative to the vessel opening).

Angular rims are those rims with one inflection point. Such rims may be either everted (if the point inflects outward) or inverted (if the point inflects inward).

Bi-angular rims (aka: articulated) are those rims with two inflection points. The primary inflection point is at the joint between the rim and the neck/body. The secondary inflection point (from whence "bi-angular" derives) is located between the primary inflection point and the lip. Bi-angular rim inflections may be everted (if the secondary point inflects outward) or inverted (if the inflection is inward).

Curved rim inflections may be incurving (aka: bowed or concave) into the vessel or outcurving (aka: flaring or convex) outside the vessel. A curved rim inflection has no specific point of inflection, but describes an arc.

Straight rim inflections may be sloping (aka: splayed) or vertical (aka: upright).

Rim profile. The rim profile is the general shape of the rim (see table 1 and fig. 5). Rim profiles may be doubled, flattened, offset, pinched, simple, or thickened.

Doubled rim profiles may be either folded, hooked, or pendant outside the vessel. Folded rim profiles are doubled to the extent that the fold actually or almost touches the vessel wall. Hooked rim profiles curve to a point. Pendant rim profiles

hang down with the edge of the rim pointing to the base, but with a gap between the doubled portion and the vessel wall.

Flattened rim profiles may be angular, horizontal, or T-shaped (aka: hammer-head). Both of the first two may be everted or inverted. A T-shaped rim profile is thickened both externally and internally with inflection points on both sides.

Offset rims are either in-set or out-set from the vessel wall, resulting in either an inverted or everted rim profile.

Pinched rim profiles (aka: pushed or squeezed) are designed either for pouring a liquid or for holding a wick (in the case of some lamps). Styles include cup-shaped, pinched (one protrusion), quatrefoil (four protrusions), or trefoil (three protrusions).

Thickened rim profiles (aka: knob or bulbous) may be external, symmetrical, or internal. A rilled rim is a special variation of thickened rim which has a band of clay added below the lip.

Rim stance. Rim stance is the angle of the rim relative to the horizontal plane of the vessel opening. The determination of rim stance is used to estimate the angle of the body wall profile for the purpose of theoretically reconstructing (or drawing) the original whole form. Rim stance is not to be confused with rim inflection (the angle of the rim-body connection used in describing the vessel).

Ring (decoration). See Surface treatment.

Rivets. See Surface treatment, appliqué.

Rope relief. See Surface treatment, relief.

Rouletting. See Surface treatment.

S

Sausage jar. This vessel is a tall, baggy storage jar from the Iron II or Middle Islamic period.

Scalloping. See Surface treatment, impressing.

Scraper burnishing. See Surface treatment, burnishing.

Self-same slip. See Surface treatment, slip.

Sgraffito. See Surface treatment, incising.

Sherd. Fragments of pottery are separated into diagnostic and non-diagnostic sherds. Non-diagnostic sherds (normally body sherds, aka: bods) are not kept unless they are part of a mendable vessel. Diagnostic sherds (aka: analytic sherds) are normally rims and bases. Body sherds may be diagnostic if they have a particular surface treatment such as painting, etc.

Shoulder. This describes the point at which a vessel body wall curves or bends inward toward a neck or mouth.

Sigillata. This is a Roman period fabric, finely levigated and red, and is often impressed.

Significant sherds. See Diagnostics.

Skeuomorph. This term describes a pottery imitation of a vessel which was originally produced in a different medium or which exhibits physical features intended to suggest a

prototype that was originally made in a different medium. An example of a skeuomorph is a ceramic vessel imitating one originally made of metal or stone.

Slashing. See Surface treatment, incising.

Slip. See Surface treatment.

Slow wheel. See Tournette.

Slurry. See Surface treatment, slip.

Smoothing. See Surface treatment, slip.

Spalling. See Ware.

Spherical. See Wall profile, globular.

Spiral incision. See Surface treatment, incising.

Splayed. See Rim inflection, straight.

Spout. This is a tube which was sometimes fixed into an opening in the body for the purpose of pouring liquid from the vessel. A spout can be angular (curved, cylindrical, straight, or trumpet) or vertical (pillar). See table 2 and fig. 11.

Spouted bowl. A small-to-large (diameter), intermediate-to-very deep bowl possessing a spout attached to its body. Smaller spouted bowls may be called "teapots."

Spouted jar. A very short-to-tall jar with a spout attached to the body. Smaller spouted jars may be called "teapot."

Spouted jug. A very short-to-tall jug with a spout attached, often at the shoulder.

Stamping. See Surface treatment, impressing.

Stand. A ceramic collar placed under a round or pointed bottom vessel in order to support or stabilize the vessel may be called a stand.

Storage jar. A tall-to-very tall jar (aka: store jar, pithos).

Storage vat. See Vat.

Sugar jar. A Late Islamic jar used to store/prepare sugar.

Sugar pot. A Late Islamic V-shaped bowl used to store/prepare sugar.

Surface treatment. Exterior manipulation of the pottery vessel, generally for functional reasons. There is a very close association between surface treatment and decoration which is generally aesthetic in purpose. The division between function and aesthetics is often blurred.

Appliqué is a design made in clay and attached to the surface of the vessel with an adhesion slip.

Rivets are conical clay knobs attached below the rim on Iron II period vessels.

Band decoration is a horizontal line of paint or other decoration.

Barbotine is a decorative style combining incision and appliqué.

Burnishing is a technique of smoothing the wall of a vessel with pressure in narrow strokes by a tool (aka: polish). This treatment orients the clay particles parallel to the surface creating a shiny surface which usually endures firing and seals the porous surface somewhat while providing an aesthetic design.

Cross-pattern burnishing results in several strokes crossed in an approximately perpendicular direction by several other strokes leaving a

checkerboard pattern.

Design burnishing results in an artistic pattern (aka: pattern burnish).

Hand burnishing results in uneven strokes in many directions as the vessel is turned by hand.

Metallic hand burnished ware is a hard-fired fabric with hand burnished surface treatment resulting in a "metallic" appearance.

Scraper burnishing indicates the manner of application.

Vertical burnishing results in a series of vertical strokes.

Wheel burnishing results in very even, horizontal bands.

Color is the chromatic tone which is recorded by a Munsell descriptor.

Depressing is decoration of the vessel by removing clay material from the exterior surface resulting in a hollowed area. The depression is not noticeable on the interior of the vessel (as distinct from impressing, which leaves a bulge).

Excising is a line or stroke cut out by a sharp, rounded, or pointed tool with which the potter extracted clay from the body of the vessel.

Fluting is a design which is cupped out of the vessel body at regular intervals.

Glaze is made from glass-forming oxides (silicates), fluxing agents (soda, potash), and strengtheners (aluminum oxides). The materials are mixed as powder with water and painted as a slip on the surface of vessel, and after firing, it becomes a glassy layer which is impermeable and allows for better cleaning of vessel.

Impressing is a decoration of the vessel by means of pressing against the unfired clay. The impression is transferred into a bulge on the interior of the vessel (as distinct from depressing, which leaves no bulge).

Denticulation is triangular or chevron stamping.

Finger impressing indicates the impression was made with a finger.

Mold indicates the impression was made with a mold.

Pie-crust is a wavy edge on lips or handles formed by finger impressing or other indentation.

Scalloping is wavy impressing often found on clay bands, ledge handles, etc.

Stamping indicates the impression was made with a stamp.

Tool impressing indicates the impression was made with a tool.

Incising is a line, stroke, or notch cut by a sharp tool resulting in the clay being pushed out on the sides.

Combing with a toothed tool results in a series of parallel incisions which are clustered in groups.

Cross-hatching is diagonal incisions on the outer surface of a vessel.

Grooving is a design wherein clay is removed or impressed to form wide, individual, regular indentions with rounded or angular cross-

sections.

Ribbing is a series of horizontal ridges, grooves, or depressions created several at a time.

Sgraffito ware consisted of a hard, thin, red ware decorated first by carving designs through light slip exposing contrasting dark clay surface below, and then by applying a covering glaze. There were many types of sgraffito ware with different geographical origins. It was, however, common among Crusader and medieval assemblages in Palestine and Syria. It was most widespread during the 13th century. Local and imported sgraffito ware was relatively rare in Transjordan.

Slashing is a haphazard series of handmade incisions sometimes forming pattern or designs.

Spiral indicates the shape of the incision.

Wheel incision results in very regular, horizontal cuts.

Indentation refers to any type of inward pressing into the clay.

Line decoration may be vertical or angular patterns of paint or other decoration.

Luster is the manner in which the surface of the vessel reflects light.

Molding is a design which has been added to the vessel so it stands out from the surface in relief (aka: mold).

Painting is a slip to which color has been added. It is applied to the vessel surface, often in designs or patterns which are typical of a particular archaeological period and/or cultural group. Paint is distinguished from slip in that slip covers large areas, normally with no patterns.

Paring is the large-scale removal of clay from the vessel wall by mechanical means such as a knife.

Puncture is a texture which results in dots that are poked into the surface to form patterns or fill space.

Relief is an applied or built-up design which stands out from the surface of the vessel.

Rope relief (or rope molding) is an upraised band at the collar of a vessel that is reminiscent of a rope design.

Ridging describes clay which has been formed into ridges for decorative purposes.

Ring(s) indicates decoration styled in circles.

Rouletting is a design pattern, especially typical of the Hellenistic, Nabataean, and Roman vessels, which is created by rolling a tool across the clay surface resulting in a continuous band of impressions.

Slip is a thin layer of fine clay applied over the vessel by dipping, pouring, or wiping it in a liquid clay. Slip is distinguished from paint by the fact that paint is applied in patterns while slip is applied to large areas, normally without patterns.

Buff slip is pinkish-to-light brown in color.

Lustrous slip reflects light.

Red slip is ubiquitous as a surface treatment, although the color varies somewhat purplish in the Middle Bronze Age, reddish in the Iron Age, and more orangish in the later periods. Red slip, in combination with variations in the type of burnishing, has been used as a period hallmark in the Iron Age.

Self-same slip (also "self" slipped) is made of the same clay as the body.

Wiped-on refers to the method in which slip is applied (aka: wiping or rubbing).

Smoothing any treatment which smooths the ceramic surface.

Wash is a thin, usually light clay suspension of creamy consistency which does not adhere well to the surface of the vessel (aka: slurry or wet slurry).

Wet smoothing is a slurry or wet hand surface treatment indicating the vessel was finished either by a rag or by hand while the clay was still plastic.

T

Teapot. See Spouted bowl or Spouted jar.

Temper. See Ware.

Terra cotta. This word means baked clay.

Tool impression. See Surface treatment, impressing.

Tournette. A small potter's turntable that enables the potter to turn the vessel in place while forming it (aka: "slow" wheel). Unlike with the faster weighted wheel, the tournette turned too slowly for centrifugal force to be a factor in the vessel's formation.

Tubular handle. See Handle.

Trefoil. See Rim profile, pinched.

Twin amphoriskos. This vessel is made of two amphoriskoi attached at their bodies.

Twin cups. This vessel is made of two cups attached at their bodies.

Twin jars. This vessel is made of two jars attached at their bodies.

U

Underfiring. See Firing.

Unguentarium. See Bottle.

V

Vase. This very subjective term is used to describe any pottery vessel that resembles a modern vase.

Vat. This is a large-to-very large (diameter), deep-to-very deep depth storage bowl.

Vertical burnishing. See Surface treatment, burnishing.

Vessel. This is a general term for a pottery form.

Vitrification. See Firing.

Void. See Ware.

W-X

Wall Profile. This describes the cross-section of a vessel body. There are many examples (see table 1 and fig. 6):

Biconical has two cones back to back atop each other, joined at their maximum diameter. The two cones may be equal or unequal.

Carinated has three cones atop each other forming a very angular "S"-shaped cross-section.

Conical describes a truncated triangle. The wall profile may be V-shaped or Δ -shaped.

Cylindrical has parallel sides or may be barrel-shaped. It may be horizontal or vertical.

Globular can be hemispherical, ovoid, or spherical.

Hemispherical has a globular body shaped like half of a circle or ball.

Ovoid is a globular, egg-shaped body and may be horizontal, upright, or upside down.

Spherical has a globular body shaped like a circle or ball.

Piriform means pear-shaped and may be upright or upside down.

Ware. This describes the combination of clay and tempering elements which is then formed into a vessel and fired (aka: fabric, paste).

Coarse describes poorly levigated with large inclusions. See Levigation, below.

Grit. See Inclusion, below.

Grog is ground ceramic used as temper.

Inclusion is either material indigenous to the clay and/or the material added by the potter to make the clay workable (aka: grit).

Levigation is the process of mixing clay and water to permit a separation of particles. Coarse particles settle while the finer particles remain in suspension. The clay mixture composed of finer particles is then poured off. This process is repeated resulting in a concentration of finer particles and a smoother, more homogenous clay.

Non-plastics are any kind of temper (e.g., straw or sand, etc.) as distinct from the plastic component of ceramic, such as clay.

Temper is the inclusion of non-plastic materials (sand, etc.) or organic material (dung or chaff, etc.) to increase the malleability or strength of the fired vessel.

Spalling is splitting, cracking, or chipping of a clay surface.

Void is any cavity in a vessel's fabric or surface.

Wash. See Surface treatment, slip.

Waster. A vessel unintentionally deformed in the kiln during firing and thus rendered unusable. They are frequently found around kilns or ancient kiln sites.

Wet smoothing. See Surface treatment, slip.

Wheel. The potter's wheel was a specialized machine upon which the potter formed the vessel: increasing technologically from pivoting tournette (up to the Early Bronze Age) to the more efficient weighted potter's wheel (Middle Bronze Age and later).

Wheel burnishing. See Surface treatment, burnishing.

Wheel incision. See Surface treatment, incising.

Wheelmade. See Manufacture.

Wiped-on slip. See Surface treatment, slip.

Wiping. See Surface treatment, slip, wiped-on.

Z

Zoomorphic. Descriptive of something made in the shape of an animal body.

BIBLIO- GRAPHY

The bibliography used in the generation of this book may be supplemented by the extensive bibliographies of Herr and Trenchard (1995), as well as Homès-Fredericq and Franken (1986) and those of the individual reports cited herein.

- Amiran, R.
1969 *Ancient Pottery of the Holy Land*. Jerusalem: Massada.
1977 Pottery from the Chalcolithic Site Near Tell Delhamiya and Some Notes on the Character of the Chalcolithic-Early Bronze I Transition. *Eretz Israel* 13: 48-56. (Hebrew).
- 'Amr, A.-J.
1984 Some Ayyubid Pottery Lamps from Rujm al-Kursi and Other Related Mamluke Examples. *Berytus* 32: 201-210.
1986 Umayyad Painted Pottery Bowls from Rujm al-Kursi, Jordan. *Berytus* 34: 145-159.
- 'Amr, Kh.
1992 Islamic or Nabatean? The Case of a First to Early Second Century AD Cream Ware. Pp. 221-226 in *Studies in the History and Archaeology of Jordan 4*. Amman: Department of Antiquities.
- Baird, D., and Philip, G.
1994 Preliminary Report on the Third (1993) Season of Excavations at Tell esh-Shuna North. *Levant* 26: 111-133.
- Banning, E. B., et al.
1989 Wadi Ziqlab Project 1987: A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 33: 43-58.
- Banning, E. B., et al.
1992 Tabaqat al-Buma: 1990 Excavations at a Kebaran and Late Neolithic Site in Wadi Ziqlab. *Annual of the Department of Antiquities of Jordan* 36: 43-69.
- Bennett, C.-M.
1966 Fouilles d'Umm el-Biyara. *Revue Biblique* 73: 372-403.
1973 An Unusual Cup from Petra (Southern Jordan). *Levant* 5: 131-133.
1974 Excavations at Buseirah, Southern Jordan, 1972: Preliminary Report. *Levant* 6: 1-24.
1975 Excavations at Buseirah, Southern Jordan, 1973: Third Preliminary Report. *Levant* 7: 1-19.
1978 Excavations at the Citadel (El Qal'ah), Amman, Jordan. *Levant* 10: 1-9.
1980 Soundings at Dhra', Jordan. *Levant* 12: 30-39.
1984 Excavations at Tawilan in Southern Jordan, 1982. *Levant* 16: 1-23.

- Bennett, C.-M., and Bienkowski, P.
1995 *Excavations at Tawilan in Southern Jordan*. British Academy Monographs in Archaeology 8. Oxford, England: Oxford University.
- Bienkowski, P.
1995 The Edomites: The Archaeological Evidence from Transjordan. Pp. 41-92 in *You Shall Not Abhor an Edomite for He is Your Brother: Edom and Seir in History and Tradition*, ed. D. Edelman. Atlanta: Scholars.
- Bikai, P. M.; Sha'er, M.; Fitzgerald, B.
1994 The Byzantine Church at Darat al-Funun. *Annual of the Department of Antiquities of Jordan* 38: 401-416.
- Braemer, F.
1987 Two Campaigns of Excavations on the Ancient Tell of Jarash. *Annual of the Department of Antiquities of Jordan* 31: 525-530.
- Brown, R. M.
1987 A 12th Century A.D. Sequence from Southern Transjordan: Crusader and Ayyubid Occupation at el-Wu'eira. *Annual of the Department of Antiquities of Jordan* 31: 267-288.
1989 Late Islamic Ceramic Production and Distribution in the Southern Levant: A Socio-economic and Political Interpretation. Unpublished Dissertation. Binghamton, NY: State University of New York.
1991 Ceramics from the Kerak Plateau. Pp. 169-280 in *Archaeological Survey of the Kerak Plateau*, ed. by J. M. Miller. American Schools of Oriental Research Archaeological Reports No. 1. Atlanta, GA: Scholars.
- Clark, D. R.
1997 Field B: The Western Defensive System. Pp. 53-98 in *Madaba Plains Project 3: The 1989 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T. Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- Clark, V. A.
1983 The Iron IIC/Persian Pottery from Rujm al-Henu. *Annual of the Department of Antiquities of Jordan* 27: 143-163.
- Dajani, R. W.
1964 Iron Age Tombs from Irbid. *Annual of the Department of Antiquities of Jordan* 8-9: 99-101.
1966a Four Iron Age Tombs from Irbid. *Annual of the Department of Antiquities of Jordan* 11: 88-101.
1966b An Iron Age Tomb from Amman. *Annual of the Department of Antiquities of Jordan* 11: 41-47.
1966c Jabal Nuzha Tomb at Amman. *Annual of the Department of Antiquities of Jordan* 11: 48-52.
- Daviau, P. M. M.
1991 Field D: The Lower Southern Terrace. Pp. 87-155 in *Madaba Plains Project 2: The 1987 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T. Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
1992 Preliminary Report of the Excavations at Tell Jawa in the Madaba Plains (1991). *Annual of the Department of Antiquities of Jordan* 36: 145-162.
- Day, F. E.
1942 Early Islamic and Christian Lamps. *Berytus* 7: 64-79.
- Dever, W. G.
1973 The EB IV-MB I Horizon in Transjordan and Southern Palestine. *Bulletin of the American Schools of Oriental Research* 210: 37-63.
1980 New Vistas on the EB IV ("MB I") Horizon in Syria-Palestine. *Bulletin of the American Schools of Oriental Research* 237: 35-64.
1995 Ceramics, Ethnicity, and the Question of Israel's Origins. *Biblical Archaeologist* 58: 200-213.
- Dollfus, G., and Kafafi, Z. A.
1989 Abu Hamid. Pp. 102-113 in *Archaeology of Jordan II, vol. 2, Field Reports Sites A-K*, eds. D. Homes-Fredericq and J. B. Hennessey. *Akkadica Supplementum* 7. Leuven: Peeters.
1993 Recent Researches at Abu Hamid.

- Annual of the Department of Antiquities of Jordan* 37: 241-262.
- Dollfus, G., et al.
1988 Abu Hamid, An Early 4th Millennium Site in the Jordan Valley. Preliminary Results. Pp. 567-601 in *The Prehistory of Jordan, the State of Research in 1986*. B.A.R. International Series 396 (ii). Ed. by A.N. Garrard and H.G. Gebel. Oxford: British Archaeological Reports.
- Dornemann, R. H.
1983 *The Archaeology of the Transjordan in the Bronze and Iron Ages*. Milwaukee, WI: Milwaukee Public Museum.
- Edwards, P.C., et al.
1990 Preliminary Report on the University of Sydney's Tenth Season of Excavations at Pella (Tabaqat Fahl) in 1988. *Annual of the Department of Antiquities of Jordan* 34: 57-93.
- Elliot, C.
1978 The Ghassulian Culture in Palestine: Origins, Influences, and Abandonment. *Levant* 10: 37-54.
- Falconer, S., and Magness-Gardiner, B.
1983 1982 Excavation of the Tell el-Hayyat Project. *Annual of the Department of Antiquities of Jordan* 27: 87-104.
1984 Preliminary Report of the First Season of the Tell el-Hayyat Project. *Bulletin of the American Schools of Oriental Research* 255: 49-74.
- Fischer, P. M.
1991 Tell Abu al-Kharaz: The Swedish Jordan Expedition 1989, First Season Preliminary Report from Trial Soundings. *Annual of the Department of Antiquities of Jordan* 35: 67-104.
1993 Tel Abu al-Kharaz: The Swedish Jordan Expedition 1991, Second Season Preliminary Excavation Report. *Annual of the Department of Antiquities of Jordan* 37: 279-305.
1994 Tel Abu al-Kharaz. The Swedish Jordan Expedition 1992: Third Season Preliminary Excavation Report. *Annual of the Department of Antiquities of Jordan* 38: 127-146.
- Fischer, P. M., and Toivonen-Skage, E.
1995 Metallic Burnished Early Bronze Age Ware From Tall Abu al-Kharaz. Pp. 587-596 in *Studies in the History and Archaeology of Jordan 5*, ed. A. Hadidi. Amman: Department of Antiquities.
- Fisher, C. S., and McCown, C.
1931 Jerash-Gerasa 1930. Pp. 1-62 in *Annual of the American Schools of Oriental Research* 11, ed. H. J. Cadbury. New Haven, CT: Yale University.
- Fisher, J. R.
1997 Field G: The North Slope "Wall Lines." Pp. 222-227 in *Madaba Plains Project 3: The 1989 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T. Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- Franken, H. J.
1961 The Excavations at Deir 'Alla in Jordan: 2nd Season. *Vetus Testamentum* 11: 361-372.
1969 *Excavations at Tell Deir 'Alla 1: A Stratigraphical and Analytical Study of the Early Iron Age Pottery. Documenta et Monumenta Orientis Antiqui* 16. Leiden: Brill.
1982 A Technological Study of Iron Age I Pottery from Tell Deir 'Alla. Pp. 141-144 in *Studies in the History and Archaeology Jordan 1*. Amman: Department of Antiquities.
1992 *Excavations at Tell Deir 'Alla: The Late Bronze Age Sanctuary*. Louvain: Peeters.
- Franken, H. J., and Kalsbeek, J.
1975 *Potters of a Medieval Village in the Jordan Valley. Excavations at Tell deir 'Alla: a medieval tell, Tell Abu Gourdan, Jordan*. North-Holland Ceramic Studies in Archaeology 3. New York: American Elsevier.
- Franken, H. J., and London, G.
1995 Why Painted Pottery Disappeared at the End of the Second Millennium B.C.E. *Biblical Archaeologist* 58: 214-222.
- Fuller, M. J.
1987 *Abila of the Decapolis: A Roman-Byzantine City in Transjordan*. Ph.D. dissertation.

- Gaube, C. G.
1985 Tell esh-Shuna North, 1984: A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 29: 43-87.
1986 Tell esh-Shuna North, 1985: A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 30: 69-113.
- Gawlikowski, M.
1986 A Residential Area by the South Decumanus. Pp. 107-136 in *Jerash Archaeological Project: 1981-1983*, ed. F. Zayadine. Amman: Department of Antiquities.
- Gawlikowski, M., and Musa, A.
1986 The Church of Bishop Marianos. Pp. 137-162 in *Jerash Archaeological Project: 1981-1983*, ed. F. Zayadine. Amman: Department of Antiquities.
- Gerber, Y., and Brogli, R. F.
1995 Late Roman Pottery from az-Zantur, Petra. Pp. 649-655 in *Studies in the History and Archaeology of Jordan 5*, ed. A. Hadidi. Amman: Department of Antiquities.
- Greene, J. A., and 'Amr, K.
1992 Deep Sounding on the Lower Terrace of the Amman Citadel: Final Report. *Annual of the Department of Antiquities of Jordan* 36: 113-144.
- Haas, H. de; LaGro, H. E.; and Steiner, M. L.
1989 First Season of Excavations at Tell Abu Sarbut, 1988: A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 33: 323-326.
1992 Second and Third Seasons of Excavations at Tell Abu Sarbut, Jordan Valley (Preliminary Report). *Annual of the Department of Antiquities of Jordan* 36: 333-343.
- Hadidi, A.
1987 An Ammonite Tomb at Amman. *Levant* 19: 101-120.
- Haldimann, M.-A.
1992 Les implantations Omeyyades dans la Balqa: L'apport d'Umm-el-Walid. *Annual of the Department of Antiquities of Jordan* 36: 307-323.
- Hammond, P. C.
1973 Pottery from Petra. *Palestine Exploration Quarterly* 105: 27-49.
- Hankey, V.
1974 A Late Bronze Age Temple at Amman: I. The Aegean Pottery. *Levant* 6: 131-159.
- Harding, G. L.
1944 Two Iron Age Tombs from 'Amman. *Quarterly of the Department of Antiquities in Palestine* 11: 67-80.
1948 An Iron-Age Tomb at Sahab. *Quarterly of the Department of Antiquities in Palestine* 13: 42-102.
1950 An Iron-Age Tomb at Meqabelein. *Quarterly of the Department of Antiquities of Palestine* 14: 44-48.
1951a Excavations on the Citadel, Amman. *Annual of the Department of Antiquities of Jordan* 1: 7-16.
1951b A Roman Tomb in Amman. *Annual of the Department of Antiquities of Jordan* 1: 30-33.
1951c Two Iron-Age Tombs in Amman. *Annual of the Department of Antiquities of Jordan* 1: 37-40.
- Harding, G. L., and Isserline, B. S. J.
1953 *Four Tomb Groups from Jordan*. Palestine Exploration Fund Annual No. 6. London: Palestine Exploration Fund.
- Harrison, T. P.
1997 Field D: The Lower Southern Terrace. Pp. 99-175 in *Madaba Plains Project 3: The 1989 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. T. Geraty, L. G. Herr, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/ Andrews University.
- Hart, S.
1995 The Pottery. Pp. 53-66 in *Excavation at Tawilan in Southern Jordan*, eds. C-M. Bennett and P. Bienkowski. Oxford, England: Oxford University.
- Helms, S. W.
1974 Jawa Excavations 1974: A Preliminary Report. *Levant* 8: 1-29.
1975 Jawa 1973: A Preliminary Report. *Levant* 7: 20-38.
1981 *Jawa: Lost City of the Black Desert*. Ithaca, NY: Cornell University.
1983 The EB IV (EB-MB) Cemetery at Tiwal esh-Sharqi in the Jordan Valley, 1983. *Annual of the Department of Antiquities of Jordan* 27: 55-85.

- 1989 An EB IV Pottery Repertoire at Amman, Jordan. *Bulletin of the American Schools of Oriental Research* 273: 17-36.
- 1991 The Pottery. Pp. 55-139 in *Excavations at Jawa 1972-1986: Stratigraphy, Pottery, and Other Finds*, ed. A. V. G. Betts. Edinburgh: Edinburgh University.
- Helms, S. W., and McCroery, D.
1988 Rescue Excavations at Umm el-Bighal: The Pottery. *Annual of the Department of Antiquities of Jordan* 32: 319-347.
- Hennessy, J. B.
1969 Preliminary Report on a First Season of Excavations at Teleilat Ghassul. *Levant* 1:1-24.
1985 *Palestine in the Bronze and Iron Ages*, ed. J. N. Tubb. London: Institute of Archaeology.
1989 Pella (Tabaqat Fahl). Pp. 406-441 in *Archaeology of Jordan II, vol. 2, Field Reports Sites L-Z*, eds. D. Homes-Fredericq and J. B. Hennessy. *Akkadica Supplementum* 7. Leuven: Peeters.
- Hennessy, J. B., et al.
1981 Preliminary Report on a Second Season of Excavation at Pella, Jordan. *Annual of the Department of Antiquities of Jordan* 25: 267-309.
- Hennessy, J. B., et al.
1983 Preliminary Report on the Fourth Season of Excavations at Pella, 1982. *Annual of the Department of Antiquities of Jordan* 27: 325-361.
- Herr, L. G.
1989 The Pottery Finds. Pp. 299-354 in *Madaba Plains Project 1: The 1984 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. T. Geraty, L. G. Herr, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
1995 The Late Iron II-Persian Ceramic Horizon at Tall al-'Umayri. Pp. 617-619 in *Studies in the History and Archaeology of Jordan 5*, ed. A. Hadidi. Amman: Department of Antiquities.
1997 The Pottery. Pp. 228-249 in *Madaba Plains Project 3: The 1984 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. T. Geraty, L. G. Herr, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- Herr, L. G., and Trenchard, W. C.
1995 "A Bibliography of Published Palestinian Pottery From the Neolithic to the Modern Age." Unpublished manuscript. College Heights, AB: Canadian Union College.
1996 *The Published Pottery of Palestine*. Atlanta: Scholars.
- Herr, L. G.; Geraty, L. T.; LaBianca, Ø. S.; and Younker, R. W.
1991 Madaba Plains Project: The 1989 Excavations at Tell el-'Umeiri and Vicinity. *Annual of the Department of Antiquities of Jordan* 35: 155-179.
- Hirschfeld, Y., and Solar, G.
1981 The Roman Thermae at Hammat Gader: Preliminary Report of Three Seasons of Excavations. *Israel Exploration Journal* 31: 197-219.
- Holm-Nielsen, S., et al.
1986 The Excavation of Byzantine Baths in Umm Qeis. *Annual of the Department of Antiquities of Jordan* 30: 219-232.
- Homes-Fredericq, D., and Franken, H. J.
1986 *Pottery and Potters—Past and Present*. Tübingen: Attempto Verlag.
- Horsfield, G., and Horsfield, A.
1940 Sela-Petra, the Rock of Edom and Nabatene, IV: The Finds. *Quarterly of the Department of Antiquities in Palestine* 9:105-204.
- Ibrahim, M. M.
1978 The Collared-Rim Jar of the Early Iron Age. Pp. 116-126 in *Archaeology in the Levant*, eds. R. Moorey and P. Parr. Warminster, England: Aris & Phillips.
1987 Sahab and its Foreign Relations. Pp. 73-81 in *Studies in the History and Archaeology of Jordan 3*, ed. A. Hadidi. Amman: Department of Antiquities.
- Ibrahim, M. M.; Sauer, J. A.; and Yassine, Kh.
1976 The East Jordan Valley Survey, 1975. *Bulletin of the American*

- Schools of Oriental Research* 222: 41-66.
- Joukowsky, M.
1980 *A Complete Manual of Field Archaeology*. Englewood Cliffs, NJ: Prentice-Hall.
- Kafafi, Z. A.
1986 Second Season of Excavations at Jebel Abu Thawwab (Er-Rumman), 1985, Preliminary Report. *Annual of the Department of Antiquities of Jordan* 30: 57-67.
1987 The Pottery Neolithic in Jordan in Connection with other Near Eastern Regions. Pp. 33-39 in *Studies in the History and Archaeology of Jordan* 3, ed. A. Hadidi. Amman: Department of Antiquities.
1988 Jebel Abu Thawwab: A Pottery Neolithic Village in North Jordan. Pp. 451-471 in *The Prehistory of Jordan: The State of Research in 1986*, ed. A.N. Garrard and H.G. Gebel. B.A.R. International Series 396 (ii). Oxford, England: British Archaeological Reports.
1989 Abu Thawwab. Pp. 120-124 in *Archaeology of Jordan II, vol. 2, Field Reports Sites A-K*, eds. D. Homes-Fredericq and J. B. Hennessy. *Akkadica Supplementum* 7. Leuven: Peeters.
1990 Early Pottery Contexts from 'Ain Ghazal, Jordan. *Bulletin of the American Schools of Oriental Research* 280: 15-30.
1995 Decorative Elements on the Excavated Neolithic Pottery at 'Ayn Ghazal. Pp. 545-553 in *Studies in the History and Archaeology of Jordan* 5, ed. A. Hadidi. Amman: Department of Antiquities.
- Kafafi, Z. A.; Rollefson, G. O.; and Simmons, A. H.
1990 The 1989 Season at 'Ain Ghazal: Preliminary Report. *Annual of the Department of Antiquities of Jordan* 34: 11-25.
- Khadija, M. M. A.
1974 Beit Zer'a Tombs (1974). *Annual of the Department of Antiquities of Jordan* 19: 157-163.
- Khairy, N. I.
1982 Fine Nabataean Ware with Impressed and Rouletted Decorations. Pp. 275-283 in *Studies on the History and Archaeology of Jordan* 1. Amman: Department of Antiquities.
- 1983 Technical Aspects of Fine Nabataean Pottery. *Bulletin of the American Schools of Oriental Research* 250: 17-40.
1987 The Painted Nabataean Pottery from the 1981 Petra Excavations. *Levant* 19: 167-181.
- Killich, A.
1983 Udruh-The Frontier of an Empire: 1980 and 1981 Seasons; A Preliminary Report. *Levant* 15: 110-131.
- Knapp, A. B.
1989 Complexity and Collapse in the North Jordan Valley: Archaeometry and Society in the Middle-Late Bronze Age. *Israel Exploration Journal* 39: 129-148.
- Koepfel, R., et al.
1940 *Teleilat Ghassul II*. Rome: Pontifical Biblical Institute.
- Kraeling, C. H.
1938 *Gerasa, City of the Decapolis*. New Haven, CT: American Schools of Oriental Research.
- Kurdi, H.
1972 A New Nabataean Tomb at Sadaqa. *Annual of the Department of Antiquities of Jordan* 17: 85-88.
- Lapp, N.
1995 Pottery Marks from the Expedition to the Dead Sea Plain. Pp. 555-571 in *Studies in the History and Archaeology of Jordan* 5, ed. A. Hadidi. Amman: Department of Antiquities.
- Lapp, P. W.
1961 *Palestine Ceramic Chronology: 200 B.C. - A.D. 70*. Publications of the Jerusalem School. *Archaeology* v. 3. New Haven, CT: American Schools of Oriental Research.
- Lawlor, J. I.
1980 The 1978 Excavation of the Hesban North Church. *Annual of the Department of Antiquities of Jordan* 24: 95-105, 275-280.
1991 Field A: The Ammonite Citadel. Pp. 15-52 in *Madaba Plains Project 2: The 1987 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T.

- Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- 1997 Field A: The Ammonite Citadel. Pp. 21-52 in *Madaba Plains Project 3: The 1989 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T. Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- Leonard, Jr., A.
- 1979 Kataret es-Samra: A Late Bronze Age Cemetery in Transjordan? *Bulletin of the American Schools of Oriental Research* 234: 53-66.
- 1987 The Significance of the Mycenaean Pottery Found East of the Jordan River. Pp. 262-266 in *Studies in the History and Archaeology of Jordan 3*, ed. A. Hadidi. Amman: Department of Antiquities.
- 1992 *The Jordan Valley Survey, 1953: Some Unpublished Soundings Conducted by James Mellaart*. Annual of the American Schools of Oriental Research 50. Winona Lake, IN: Eisenbrauns.
- Lindner, M., et al.
- 1988 Es-Sadeh: An Important Edomite-Nabataean Site in Southern Jordan: Preliminary Report. *Annual of the Department of Antiquities of Jordan* 32: 75-99.
- Low, R. D.
- 1991 Field F: The Eastern Shelf. Pp. 170-231 in *Madaba Plains Project 2: The 1987 Season at Tell el-'Umeiri and Vicinity and Subsequent Studies*, eds. L. G. Herr, L. T. Geraty, Ø. S. LaBianca, and R. W. Younker. Berrien Springs, MI: Institute of Archaeology/Andrews University.
- Lugenbeal, E. N., and Sauer, J. A.
- 1972 Seventh-Sixth Century B.C. Pottery from Area B at Hesban. *Andrews University Seminary Studies* 10.1: 21-69 and pls. A-C, I-XI.
- Mabry, J.
- 1989 Investigations at Tell el-Handaqq, Jordan. *Annual of the Department of Antiquities of Jordan* 33: 59-95.
- Mallon, A.; Koepfel, R.; and Neuville, R.
- 1934 *Telleilat Ghassul I*. Rome: Pontifical Biblical Institute.
- Mare, W. H.
- 1984 The 1982 Season at Abila of the Decapolis. *Annual of the Department of Antiquities of Jordan* 28: 39-54.
- 1985 The 1984 Season at Abila of the Decapolis. *Annual of the Department of Antiquities of Jordan* 29: 221-237.
- 1987 The 1986 Season at Abila of the Decapolis. *Annual of the Department of Antiquities of Jordan* 31: 205-219.
- 1991 The 1988 Season of Excavation of Abila of the Decapolis. *Annual of the Department of Antiquities of Jordan* 35: 203-221.
- Marc, W. H., et al.
- 1982 The Decapolis Survey Project: Abila, 1980. *Annual of the Department of Antiquities of Jordan* 26: 37-65.
- Mazar, A.
- 1990 *Archaeology of the Land of the Bible*. New York: Doubleday.
- McGovern, P.
- 1989 The Baq'ah Valley Project 1987, Khirbet Umm ad-Danarir and al-Qesir. *Annual of the Department of Antiquities of Jordan* 33: 123-136.
- McNicoll, A. W., and Hennessy, J. B.
- 1980 Preliminary Report on the 1979 Season of the Sydney-Wooster Joint Expedition to Pella: The Winter Session (Sydney). *Annual of the Department of Antiquities of Jordan* 24: 14-33.
- McNicoll, A. W., and Smith, R. H.
- 1980 The 1979 Season at Pella of the Decapolis. *Bulletin of the American Schools of Oriental Research* 240: 63-84.
- McNicoll, A. W.; Smith, R. H.; and Hennessy, J. B.
- 1982a A Third Season of Excavations at Pella, 1980/81. *Annual of the Department of Antiquities of Jordan* 26: 343-363.
- 1982b *Pella in Jordan: An Interim Report on the Joint University of Sydney and the College of Wooster*

- Excavations at Pella 1979-1981*. Vols. 1-2. Canberra: Australian National Gallery.
- McNicoll, A. W., *et al.*
1984 Preliminary Report on the University of Sydney's Fifth Season of Excavation at Pella in Jordan. *Annual of the Department of Antiquities of Jordan* 28: 55-86.
- McNicoll, A. W., *et al.*
1986 Preliminary Report on the University of Sydney's Seventh Season of Excavations at Pella (Tabaqat Fahl) in 1985. *Annual of the Department of Antiquities of Jordan* 30: 155-198.
- Mellaart, J.
1956 The Neolithic Site at Ghрубba. *Annual of the Department of Antiquities of Jordan* 3: 24-40.
- Miller, J. M., ed.
1991 *Archaeological Survey of the Kerak Plateau*. Atlanta: Scholars.
- Mitchel, L. A.
1992 *Hellenistic and Roman Strata: A Study of the Stratigraphy of Tell Hesban from the 2d Century B.C. to the 4th Century A.D.* Hesban 7. Berrien Springs, MI: Andrews University/Institute of Archaeology.
- Montlivault, E.
1986 Gargoulettes byzantines de Jerash. *Berytus* 34: 139-144.
- Muhsen, M.S., *et al.*
1988 'Ain Rahub, a New Final Natufian and Yarmoukian Site Near Irbid. Pp. 472-502 in *The Prehistory of Jordan: The State of Research in 1986*, ed. A.N. Garrard and H.G. Gebel. B.A.R. International Series 396 (ii). Oxford, England: British Archaeological Reports
- Munsell, A. H.
1975 *Soil Color Charts*. Baltimore: Macbeth.
1981 *A Color Notation*. Baltimore: Macbeth.
1990 *Munsell Soil Color Charts*. Revised Edition. Newburgh, NY: Kollmorgen Instruments Corp.
- Najjar, M.
1989 Abbasid Pottery from el-Muwaqqar. *Annual of the Department of Antiquities of Jordan* 33: 303-322.
- 1991 A New Middle Bronze Age Tomb at the Citadel of Amman. *Annual of the Department of Antiquities of Jordan* 35: 105-134.
- Newton, G. W. A., and Prag, K.
1995 Neutron Activation Analysis of Clay and Late Third Millennium Pottery from Iktanu, Jericho and Jerusalem: First Results. Pp. 573-585 in *Studies in the History and Archaeology of Jordan 5*, ed. A. Hadidi. Amman: Department of Antiquities.
- North, R. G.
1961 *Ghassul 1960*. Rome: Pontifical Biblical Institute.
- Northedge, A.
1992 *Studies on Roman and Islamic Amman, I*. London: Oxford.
- Oakeshott, M. F.
1983 The Edomite Pottery. Pp. 53-63 in *Midian, Moab and Edom: The History of Archaeology of Late Bronze and Iron Age Jordan and North-West Arabia*, ed. J. F. A. Sawyer and D. J. A. Clines. Journal for the Study of the Old Testament, Supplement Series 24. Sheffield, England: University of Sheffield.
- Olávarri, E.
1969 Fouilles a 'Aro'er sur l'Arnon. *Revue Biblique* 76: 230-259.
- Palumbo, G.
1992 The 1990 Wadi el-Yabis Survey Project and Soundings at Khirbet Um el-Hedamus. *Annual of the Department of Antiquities of Jordan* 36: 25-37.
- Palumbo, G., *et al.*
1993 Salvage Excavations at Tell Faysal, Jerash. *Annual of the Department of Antiquities of Jordan* 37: 89-117.
- Parr, P. J.
1960 Excavations at Khirbet Iskander. *Annual of the Department of Antiquities of Jordan* 4-5: 128-133.
- Piccirillo, M.
1975 Una Tomb del Ferro I A Madaba. *Liber Annuus* 25: 199-224.
- Potta, T. F., *et al.*
1985 Preliminary Report on a Sixth Season of Excavation by the University of Sydney at Pella in Jordan (1983/84). *Annual of the Department of Antiquities of Jordan* 29: 181-210.

- Potts, T. F., *et al.*
 1988 Preliminary Report on the Eighth and Ninth Seasons of Excavation by the University of Sydney at Pella (Tabaqat Fahl), 1986 and 1987. *Annual of the Department of Antiquities of Jordan* 32: 115-149.
- Prag, K.
 1974 The Intermediate Early Bronze-Middle Bronze Age: An Interpretation of the Evidence from Transjordan, Syria and Lebanon. *Levant* 6: 69-116.
 1988 Kilns of the Intermediate Early Bronze-Middle Bronze Age at Tell Iktanu: Preliminary Report 1987 Season. *Annual of the Department of Antiquities of Jordan* 32: 59-72.
 1989 Iktanu. Pp. 275-280 in *Archaeology of Jordan II*, vol. 2, *Field Reports Sites A-K*, eds. D. Homes-Fredericq and J. B. Hennessy. *Akkadica Supplementum* 7. Leuven: Peeters.
 1990 Preliminary Report on the Excavations at Tell Iktanu, Jordan, 1989. *Annual of the Department of Antiquities of Jordan* 34: 119-130.
- Pritchard, J. B.
 1980 *The Cemetery at Tell es-Sa'idiyeh, Jordan*. Philadelphia: University Museum/University of Pennsylvania.
 1985 *Tell es-Sa'idiyeh: Excavations on the Tell, 1964-1966*. *University Museum Monograph* 60. Philadelphia: University Museum/University of Pennsylvania.
- Rast, W. E., and Schaub, R. T.
 1980 Preliminary Report of the 1979 Expedition to the Dead Sea Plain, Jordan. *Bulletin of the American Schools of Oriental Research* 240: 21-61.
 1981 *The Southeastern Dead Sea Expedition: An Interim Report of the 1977 Season*. *Annual of the American Schools of Oriental Research* 46. Cambridge, MA: American Schools of Oriental Research.
- Rice, P. M.
 1987 *Pottery Analysis: A Sourcebook*. Chicago: University of Chicago.
- Richard, S.
 1982 Report on the 1981 Season of Survey and Soundings at Khirbet Iskander. *Annual of the Department of Antiquities of Jordan* 26: 289-299.
- Rollefson, G. O., and Simmons, A. H.
 1985 Excavations at 'Ain Ghazal 1984: Preliminary Report. *Annual of the Department of Antiquities of Jordan* 29: 11-30.
 1988 The Neolithic Settlement at 'Ain Ghazal. Pp. 393-421 in *The Prehistory of Jordan: The State of Research in 1986*, ed. A. N. Garrard and H. G. Gebel. B.A.R. International Series 396 (ii). Oxford, England: British Archaeological Reports.
- Rothenberg, B., and Glass, J.
 1983 The Midianite Pottery. Pp. 65-124 in *Midian, Moab and Edom: The History and Archaeology of Late Bronze and Iron Age Jordan and North-West Arabia*. eds. J. F. A. Sawyer and D. J. A. Cline. *Journal for the Study of the Old Testament Supplement Series* 24. Sheffield, England: University of Sheffield.
- Russell, M. B.
 1989 Hesban During the Arab Period: A.D. 635 to the Present. Pp. 27-35 in *Historical Foundations: Studies of Literary References to Hesban and Vicinity*, eds. L. T. Geraty and L. G. Running. Hesban 3. Andrews University/Institute of Archaeology.
- Saller, S. J.
 1966 Iron Age Tombs at Nebo, Jordan. *Liber Annus* 16: 165-298.
- Sari, S.
 1991 Preliminary Report on the Results of the Excavations at Khirbet Dohaleh-al-N'aymeh: First Season, Summer 1990. *Annual of the Department of Antiquities of Jordan* 35: 5-16. (Arabic).
- Sauer, J. A.
 1973 *Heshbon Pottery 1971: A Preliminary Report on the Pottery From the 1971 Excavations at Tell Heshbon*. Berrien Springs, MI: Andrews University.
 1976 Pottery Techniques at Tell Deir 'Alla. *Bulletin of the American Schools of Oriental Research* 224: 91-94.
 1982 The Pottery of Jordan in the Early Islamic Periods. Pp. 329-337 in *Studies in the History and*

- Archaeology of Jordan 1*, ed. A. Hadidi. Amman: Department of Antiquities.
- 1986 Umayyad Pottery from Sites in Jordan. Pp. 301-330 in *The Archaeology of Jordan and Other Studies*, eds. L. T. Geraty and L. G. Herr. Berrien Springs, MI: Andrews University.
- 1994 The Pottery at Hesban and Its Relationships to the History of Jordan: An Interim Hesban Pottery Report, 1993. Pp. 225-281 in *Hesban After 25 Years*, eds. D. Merling and L. T. Geraty. Berrien Springs, MI: Institute of Archaeology/Horn Archaeological Museum.
- Schaub, R. T.
 1973a An Early Bronze IV Tomb from Bab edh-Dhra'. *Bulletin of the American Schools of Oriental Research* 210: 2-19.
 1973b *The Early Bronze IA-IB Pottery of the Bab edh-Dhra' Cemetery, Jordan*. Ann Arbor, MI: University Microfilms International.
 1981 Ceramic Sequences in the Tomb Groups at Bab edh-Dhra'. Pp. 69-118 in *The Southeastern Dead Sea Plain Expedition: An Interim Report of the 1977 Season*, eds. W. E. Rast and R. T. Schaub. *Annual of the American Schools of Oriental Research* 46. Cambridge, MA: American Schools of Oriental Research.
- Schaub, R. T., and Rast, W. E.
 1989 *Bab edh-Dhra': Excavations in the Cemetery Directed by Paul W. Lapp (1965-67). Reports of the Expedition to the Dead Sea Plain, Jordan, 1*. Winona Lake, IN: Eisenbrauns.
- Schneider, H.
 1950 *The Memorial of Moses on Mt. Nebo, Part 3. The Pottery. Studium Biblicum Franciscanum* 1. Jerusalem: Franciscan.
- Seigne, J.
 1986 Recherches sur le Sanctuaire de Zeus à Jerash. Pp. 29-106 in *Jerash Archaeological Project: 1981-1983*, ed. F. Zayadine. Amman: Department of Antiquities.
- Smadeh, M.; Rasson, A.-M.; and Seigne, J.
 1992 Fouille de sauvetage dans la necropole nord-ouest de Jerash. *Annual of the Department of Antiquities of Jordan* 36: 261-279.
- Smith, R. H.
 1973 *Pella of the Decapolis. Vol. 1. The 1967 Season of the College of Wooster Expedition to Pella*. Cincinnati: College of Wooster.
 1981 Preliminary Report on a Second Season of Excavations at Pella Jordan. *Annual of the Department of Antiquities of Jordan* 25: 311-326.
 1982 Preliminary Report on the 1981 Season of the Sydney/Wooster Joint Expedition to Pella (Spring Session). *Annual of the Department of Antiquities of Jordan* 26: 323-334.
- Smith, R. H., and Day, L. P.
 1989 *Pella of the Decapolis. Vol. 2. Final Report on the College of Wooster Excavations in Area IX, The Civic Complex, 1979-1985*. Wooster, OH: College of Wooster.
- Smith, R. H.; McNicoll, A. W.; and Hennessy, J. B.
 1981 The 1980 Season at Pella of the Decapolis. *Bulletin of the American Schools of Oriental Research* 243: 1-30.
 1983 The 1981 Season at Pella of the Decapolis. *Bulletin of the American Schools of Oriental Research* 249: 45-78.
- Storfjell, J. B.
 1994 "Archaeological Terms." Unpublished manuscript. Andrews University, Institute of Archaeology.
- Stucky, R. A., et al.
 1990 Schweizer Ausgrabungen in ez-Zantur, Petra: Vorbericht der Kampagne 1988. *Annual of the Department of Antiquities of Jordan* 34: 249-283.
- 1991 Swiss-Liechtenstein Excavations at ez-Zantur in Petra, 1989, The Second Campaign. *Annual of the Department of Antiquities of Jordan* 35: 251-273.
- Thompson, H. O.
 1973 'Rujm al-Malfuf South. *Annual of the Department of Antiquities of Jordan* 18: 47-50.
 1986 An Iron Age Tomb at Madaba. Pp. 331-364 in *The Archaeology of*

- Jordan and Other Studies*, eds. L. T. Geraty and L. G. Herr. Berrien Springs, MI: Andrews University.
- Tubb, J. N.
 1988 Tell es-Sa'idiyeh: Preliminary Report on the First Three Seasons of Renewed Excavations. *Levant* 20: 23-88.
 1989 Sa'idiyeh (Tell el). Pp. 521-542 in *Archaeology of Jordan II, vol. 2, Field Reports Sites L-Z*, eds. D. Hornés-Fredericq and J. B. Hennessy. *Akkadica Supplementum* 7. Leuven: Peeters.
- Tubb, J. N., and Wright, M. W.
 1985 Excavations in the Early Bronze Age Cemetery of Tiwal esh-Sharqi: A Preliminary Report. *Annual of the Department of Antiquities of Jordan* 29: 115-130.
- Tushingham, A. D.
 1972 *The Excavations at Dibon (Dhiban) in Moab; the third campaign 1952-1953*. Annual of the American Schools of Oriental Research 40. Cambridge, MA: American Schools of Oriental Research.
- Tzaferis, V.
 1983 The Excavations of Kursi-Gergesa. 'Atiqot 16. Jerusalem: Department of Antiquities.
- Waheeb, M., and Palumbo, G.
 1993 Salvage Excavations at a Bronze Age Cemetery Near Tell el-Umeiri. *Annual of the Department of Antiquities of Jordan* 37: 147-163.
- Walmsley, A. G.
 1995 Tradition, Innovation and Imitation in the Material Culture of Islamic Jordan: The First Four Centuries. Pp. 657-668 in *Studies in the History and Archaeology of Jordan 5*, ed. A. Hadidi. Amman: Department of Antiquities.
- Walmsley, A. G., et al.
 1993 The Eleventh and Twelfth Seasons of Excavations at Pella (Tabaqat Fahl) 1989-1990. *Annual of the Department of Antiquities of Jordan* 37: 165-240.
- Weber, T., and Hoffman, A.
 1990 Gadara of the Decapolis: Preliminary Report of the 1989 Season at Umm Qeis. *Annual of the Department of Antiquities of Jordan* 34: 321-342.
- Weippert, M.
 1979 Nabataeisch-romische Keramik aus Hirbet Dor in suedlichen Jordanien. *Zeitschrift Des Deutschen Palaestina-Vereins* 95: 87-110.
- Whitcomb, D.
 1988 A Fatimid Residence at Aqaba, Jordan. *Annual of the Department of Antiquities of Jordan* 32: 207-224.
 1989 Mahesh Ware: Evidence of Early Abbasid Occupation from Southern Jordan. *Annual of the Department of Antiquities of Jordan* 33: 269-286.
 1992 Reassessing the Archaeology of Jordan of the Abbasid Period. Pp. 385-390 in *Studies in the History and Archaeology of Jordan 4*. Amman: Department of Antiquities.
- Wightman, G. J.
 1988 An EB IV Cemetery in the North Jordan Valley. *Levant* 20: 139-159.
- Winnett, F. V., and Reed, W. L.
 1964 *The Excavations at Dibon (Dhiban) in Moab*. Annual of the American Schools of Oriental Research 36-37. New Haven, CT: American Schools of Oriental Research.
- Wood, B. G.
 1990 *The Sociology of Pottery in Ancient Palestine: The Ceramic Industry and the Diffusion of Ceramic Style in the Bronze and Iron Ages*. Journal for the Study of the Old Testament Supplement Series 103. JSOT/ASOR Monographs 4. Sheffield, England: Journal for the Study of Old Testament.
- Worschech, U.
 1990 *Die Beziehungen Moabs zu Israel und Ägypten in der Eisenzeit*. Ägypten und Altes Testament 18. Wiesbaden: Harrassowitz.
- Yassine, K.
 1984 *Tell el Mazar 1: Cemetery A*. Amman: University of Jordan.
- Zayadine, F.
 1974 Excavations at Petra (1973-1974). *Annual of the Department of Antiquities of Jordan* 19: 135-150.
 1978a An EB-MB Bilobate Tomb at Amman. Pp. 59-66 in *Archaeology in the Levant: Essays for Kathleen Kenyon*, eds. R. Moorey and P. Parr.

- Warminster, England: Aris & Phillips.
- 1978b Excavations on the Upper Citadel of Amman Area A (1975 and 1977). *Annual of the Department of Antiquities of Jordan* 22: 20-54.
- 1979 Excavations at Petra (1976 and 1978). *Annual of the Department of Antiquities of Jordan* 23: 185-197.
- 1981 Recent Excavations and Restorations of the Department of Antiquities (1979-80). *Annual of the Department of Antiquities of Jordan* 25: 341-355.
- 1982 Recent Excavations at Petra. *Annual of the Department of Antiquities of Jordan* 26: 365-393.

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Ancient Pottery of Transjordan— An Introduction Utilizing Published Whole Forms: *Late Neolithic through Late Islamic*

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APOT standardizes pottery terminology and provides basic material for studying the typology and relative chronology of ancient Transjordanian pottery. The teaching corpus of 469 examples was selected from over 4000 published whole or reconstructed whole vessels representing 23 archaeological periods from 55 sites.

Chapter 1: Researching Pottery Morphology delineates the reasons archaeologists collect and study pottery. Chapter 2: Analyzing Ancient Pottery (11 figures, 3 tables) describes and illustrates vessel parts/surface treatments introducing basic vessel form analysis. Chapter 3: Standardizing Pottery Terminology (18 figures, 4 tables) standardizes vessel names, objectifies size terminology, and categorizes pottery forms. Chapter 4: Summarizing Ancient Chronology (1 table) provides a brief historical background for each archaeological period. Chapter 5: Characterizing Archaeological Periods (2 maps; 469 pottery examples) describes for each period how the pottery was made (technique), its aesthetic qualities (surface treatment), and gives representative vessels (pottery examples) scaled to 20%, each with a full description and individual bibliography. Also included are a glossary (329 entries), a bibliography (228 entries), and an index.

APOT addresses crucial factors in the study of pottery forms—leading from simple-to-complex and from general-to-specific. Each chapter builds upon its predecessor, both in terms of cumulative knowledge and increasing complexity.