

# Life in the Ancient World



*Crafts, Society and Daily Practice*

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## Introduction

We look back on the Biblical world as a time of fateful battles, inspiring prophets, great empires and profound learning. Unfortunately, this picture is often skewed to highlight regal, rather than common, history. More of our modern philosophy and theology grew out of the ancient agora than the palace. Many profound thinkers and religious visionaries in the ancient world never interacted with kings or fought in great battles. How does archaeology tell their story?

By examining ancient societal structure, crafts and daily practices, we can reconstruct the lives of common people to better understand the world of the Bible and breathe new reality into the ancient world we are trying to understand. This eBook features articles from *Biblical Archaeology Review* describing industry in Second Temple period Jerusalem and household structure in ancient Israel along with a collection of brief and lively accounts from *Archaeology Odyssey* describing standard practices across the ancient Mediterranean, from table manners to construction cranes, and from fashion and makeup to the Roman postal service.

If Jerusalem is famous for one thing, it is for being a religious center. But our interest in the Holy City lies also in its everyday life, of which so little is known. Recent investigations revealed that in ancient times, especially in the late Second Temple period (50 B.C.–70 A.D.), various arts and crafts, such as stonework, painted pottery and glass industry, flourished in Jerusalem. In 1983, the Israeli authorities opened to the public a building that had been closed for 1,913 years to the day. The building, in ancient Jerusalem's Upper City, was a workshop that was stormed by Roman soldiers in 70 A.D., the year the Romans destroyed Jerusalem and burned the Jewish Temple. In “Jerusalem Flourishing—A Craft Center for Stone, Pottery, and Glass,” eminent Israeli archaeologist Nahman Avigad describes what his excavations in the Upper City teach us about Jerusalem as an ancient craft center.

Ancient Israelite society was structured in a way that few of us in modern times experience. Its focus was on family and kin groups organized around agrarian activities. Family and kin groups, in turn, generated the symbols by which the higher levels of the social structure—the political and the divine—were understood and represented. Ancient Israelite society consisted of a series of “nested households”—one social grouping within another within another. In “Of Fathers, Kings and the Deity,” Philip J. King and Lawrence E. Stager guide us through this arrangement, which included family groups within a tribal kingdom—all under the rule of Yahweh.

## Life in the Ancient World: Crafts, Society and Daily Practice

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Examining societal structure provides an important overview, but how did individuals work, dress, eat and party? A collection of colorful articles from *Archaeology Odyssey* guides readers through common practices in the ancient world. Learn how ancient people used papyrus and date palms, put on makeup, delivered mail and celebrated over dinner parties and with temple dancers.

Enjoy this colorful, exciting and informative journey and discover what life was really like in ancient times.

Noah Wiener  
Biblical Archaeology Society  
2013

## Jerusalem Flourishing—A Craft Center for Stone, Pottery, and Glass

By Nahman Avigad

Sidebar: Refuse from a First-Century Glass Factory

Sidebar: Making Kohl Sticks



Courtesy Nahman Avigad

**Triangles and diamonds of different-colored stone and marble, polished with care and inlaid with precision around a square of veined white marble, once formed the top of a small decorative table. This tabletop fragment, found in a large, elegant Herodian home in Jerusalem's Upper City, attests not only to the wealth of the Upper City residents but also to the high level of skill the Jewish stonemasons of Jerusalem had attained by the first century B.C.**

If Jerusalem is famous for one thing, it is for being a religious center. But our interest in the Holy Cities lies also in its everyday life, of which so little is known. Recent investigations revealed that in ancient times, especially in the late Second Temple period (50 B.C.–70 A.D.), various arts and crafts, such as stonework, painted pottery and glass industry, flourished in Jerusalem.

To understand these crafts is to add a new dimension to our understanding of life in the Holy City. From these crafts we learn about the world of the craftspeople who produced the artifacts, about the art and culture their products reflected, and about the people who used them. A knowledge of these crafts breathes new reality into the ancient world we are trying to understand.

For 14 years, between 1969 and 1983, I directed archaeological excavations in the Jewish Quarter of the Old City, within the area of Jerusalem where its Upper City was located. The

Jewish Quarter of the Old City had been largely destroyed by the Jordanians in 1948. When the Jewish Quarter was reconstructed after the 1967 Six Day War, we took the opportunity to investigate the site, which had never been excavated before. Our archaeological excavations provided some of the most important evidence yet uncovered concerning Jerusalem as an ancient craft center. Foremost among these crafts was one that utilized the common raw material naturally available locally—stone.

Even before our excavations, Jerusalem stonework was well-known. The well-developed art of stoneworking is evidenced by the Second Temple Period tombs scattered around the city. The architectural carvings and ornamentation in these rock-hewn tombs, as well as on carved stone sarcophagi and ossuaries,<sup>a</sup> which are found in such large quantities in Jerusalem, are witness to the local skill in this craft, which eventually evolved into a typical Jewish style. Although no sepulchral discoveries were made in our excavations, I have reproduced here one of the finest of the sarcophagi discovered on the campus of the Hebrew University on Mount Scopus, which superbly demonstrated the high standards attained by these Jerusalem artisans.



*Eretz Israel, Vol. X, 1970*

**Richly decorated stone sarcophagus. Found on the Mt. Scopus campus of the Hebrew University of Jerusalem, this elegant sarcophagus dates to the time of Herod. Both the box and lid are decorated with finely chiseled leaves, flowers and grapevines, attesting to the skill attained by Jerusalem stoneworkers in the first century B.C.**

Other excavations in Jerusalem over the last decade have also uncovered artistic stonecarving. For example, the ornamented stones with geometric and floral patterns discovered near the Southern Wall of the Temple Mount fully display the ornamental richness and variety that typified the Royal Portico of the Temple Enclosure at the end of the Second Temple Period. One stone ornamented in a similar style was found in our excavations, and it, too, was apparently from a monumental building somewhere in the so called Upper City, which was where our excavations were located.

Our excavations in the Upper City have shown that Jerusalem artisans also produced such practical wares as stone tables and household vessels. In other words, Jerusalem had a flourishing and varied stone industry, employing many artisans and craftsmen.

Until we discovered stone tables in our excavations, as far as the archaeologist was concerned, the furniture of the Second Temple Period in Israel had been unknown. Even now this is the only type of furniture actually found. The ordinary tables in the Jerusalemitic home were, of course, made of wood; but they long ago disintegrated under moist climatic conditions. We now know that Jerusalemites also had stone tables, decorative in nature and quite expensive, that had specific functions within the house.

Our first stone table was found in the so-called Burnt House, which was burned in the Roman destruction of Jerusalem in 70 A.D. (See "Jerusalem in Flames—The Burnt House Captures a Moment in Time," BAR 09:06.) Later we found more of these tables in many houses in the Upper City. Fragments of such tables had been discovered in other excavations in Jerusalem--some of them long ago—but these fragments had not been recognized as parts of tables. Fragments of the small columns that form the legs of these tables had also been found, but long puzzled excavators.

We found two types of stone tables, one rectangular and high, the other round and low. The rectangular tables have a single central leg and a rectangular top. A projection on the underside of the table slab fits into a corresponding depression in the top of the leg, joining the two together. The leg is fashioned in the form of a column, with all the usual elements including base, shaft, and capital. These tables were the same height as modern tables, 28 inches to 32 inches, and the tops measure about 18 inches wide by 34 inches long.



Courtesy Nahman Avigad

Serving pieces grouped as they might have been used in the home of a wealthy Jerusalemitic in the first century A.D. The tabletop is a replica, and portions of the column leg and large stone vessels under the table have been restored. The bronze vessels on the table were found intact.

This arrangement of table and vessels is based on a scene carved into a tabletop fragment that was found in an Upper City building called the Burnt House (see drawing). The fragment was stolen from the excavations and then recovered by the Israel Department of Antiquities after it was found at an antiquities dealer's shop.



*Courtesy Nahman Avigad*

**Drawing of scene carved into tabletop fragment. For full caption, see photograph of serving pieces (previous page).**

One unusually elegant table had a thin top and a foot in the form of a tall, well-designed column; it is made of a hard, polished stone that was shattered into dozens of fragments and splinters by the fire in the house where it came to light. Our search for its pieces continued over two seasons, during which time we carefully sifted all the earth removed from rooms of the house.

Another table is more typically proportioned, with a thick top and stubby central leg. The fore-edge of the top bears a stylized leaf pattern also found on Jewish ossuaries from Jerusalem; its leg has a capital in Doric style. The top and leg of the table were found in different buildings and did not originally compose a single table. They do, however, go together quite admirably.

The edges of these tables are generally ornamented on three sides with geometric and floral patterns; the fourth side is most often plain. This suggests that the tables originally stood against a wall.

On the edge of one table fragment there is an unusual motif—two crossed cornucopias with a pomegranate between them. Until recently, this motif was known only from Hasmonean (first century B.C.) coins; this is the first instance of this Hasmonean emblem being found on an object other than a coin. An unusual motif on another tabletop, a fish, is particularly noteworthy because it is the only animal figure found in ornamental use. This period in Jerusalem is known for its strict adherence to the proscription against human or animal representation.



Courtesy Nahman Avigad

**Fragment of a stone table decorated with the same “still life”—a pomegranate flanked by horns of plenty—as a Hasmonean coin (see photograph). Although this motif was previously known from Hasmonean coins, the Jerusalem table fragment is its first appearance on an object other than a coin.**



Courtesy Hebrew University of Jerusalem

**Hasmonean coin decorated with the same “still life”—a pomegranate flanked by horns of plenty—as a Jerusalem table fragment (see photograph). Although this motif was previously known from Hasmonean coins like this one, the Jerusalem table fragment is its first appearance on an object other than a coin.**



Courtesy Nahman Avigad

**The only animal figure discovered in the excavations, this open-mouthed fish decorates a fragment of a stone table from Jerusalem’s Upper City. In first-century B.C. Jerusalem, Jews for the most part observed a strict interpretation of the second commandment, reading it to forbid the making of all graven images.**

**Flowers and geometric patterns like those on either side of the fish were common decorative motifs, but the fish is an anomaly.**

The smaller round tables are about 20 inches in diameter. Their tops are usually of soft limestone, though some fragments are of either a hard, reddish Jerusalem stone, a blackish

bituminous stone, or imported black granite. On the bottom of these smaller tabletops are three depressions, where wooden legs had been affixed. Nothing survives of the legs, but on the basis of Hellenistic and Roman paintings and reliefs, we can suggest that they were in the form of animal legs, sometimes with bronze fittings at the bottom. A round table of this sort appears in a wall painting in a Hellenistic tomb at Marisa, some 22 miles southwest of Jerusalem, as well as on several of Herod's coins.



Courtesy Nahman Avigad

**Low, three-legged table with stone top.** Reconstructed wooden legs have been set into the three depressions under this tabletop excavated in the Jewish Quarter. The restoration is based on similar tables depicted in contemporaneous paintings and coins. Sometimes these animal-shaped table legs had bronze "paw" fittings (inset). From the height of this and other tables found in the Jerusalem Upper City excavations, we can deduce that these were dining tables around which guests would sit, relaxing on couches while eating.

The group of tables from the Jewish Quarter thus reveals a hitherto unknown aspect of home furnishing in ancient Jerusalem. Hellenistic and Roman paintings and reliefs depicting rectangular tables with a single leg reveal that they were used as serving tables to hold drinking vessels. The round tables with three legs are depicted in use for meals, surrounded by guests reclining on couches.



Courtesy Nahman Avigad

**Roman relief showing serving and dining tables.** In this relief, from Italy, two servants are kept busy waiting on groups of diners seated on couches around low three-legged tables. Pitchers and drinking vessels for the diners are kept on a higher one-legged table between the two groups. This one-legged table stands away from the wall.

Scenes like this, showing one- and three-legged tables, how they were used and the arrangement of beverage vessels around them, have enabled Israeli archaeologists to reconstruct similar tables and vessels from fragments salvaged from the fiery debris of Jerusalem's destruction.

Stone tables like these were in widespread use throughout the Roman Empire, although they originated in the Hellenistic East. The Roman historian Livy, who lived in Herod's day, mentions "tables with one leg" among the booty brought from Asia Minor in the second century B.C., when they were apparently still considered a novelty in Rome. The Roman scholar Varro (first century B.C.) describes "a stone table for vessels, square and elongated, on a single small column ... many placed it in the house alongside the central pool. On and near it, when I was a lad, they would put bronze vessels." A graphic representation of such a group is also found on a Roman pottery oil lamp. Even today, the visitor to Pompeii will find such decorative tables in the dining rooms and patios of the luxurious villas there. In Jerusalem, too, these attractive stone tables added beauty and culture to the home. The basic technique of the Jerusalem stonemasons who made these tables, as well as the style of their ornamental motifs, was deeply rooted in the local tradition of stoneworking and, although their work was patterned after foreign models, it had a decidedly local flavor.



Courtesy Nahman Avigad

**Roman relief showing serving and dining tables.** The table in this relief stands against the wall, a position that explains why tabletops found in the Jerusalem excavations were decorated only on three sides. On either side of the stylized lion leg of the table in the scene at right are large pitchers, probably refill sizes for the smaller pitchers on top of the table. As one servant reaches for a pitcher, another pours a beverage into a drinking vessel he has just taken from the table.

Scenes like this, showing one- and three-legged tables, how they were used and the arrangement of beverage vessels around them, have enabled Israeli archaeologists to reconstruct similar tables and vessels from fragments salvaged from the fiery debris of Jerusalem's destruction.

An ornamented fragment of a stone tabletop was recently purchased from an antiquities dealer in Jerusalem by Dr. L. Y. Rahmani on behalf of the Israel Department of Antiquities and Museums. The dealer claimed that it had been found at Turmus-Aya near Samaria. Dr. Rahmani

showed this fragment to me before his Department bought it and asked if I thought that it might have been stolen from our excavations, for we had just found the first such tables in the “Burnt House.” The stone offered for sale bore the typical traces of soot, as did ours. I was in an embarrassing position, because we had carried out the excavation of the burnt rooms under strict supervision, employing only staff members and volunteers, and the site was guarded after working hours and at night by a special guard. Since a heavy fragment of a stone table was no mean item to put in your pocket and smuggle away, I told Rahmani that I didn’t think it was ours. I began having second thoughts, however. One of the day workmen, in cahoots with the night watchman (who also worked for us during the day) might have been able to remove such a bulky item. It might have been placed to one side during the day and then removed at night, to be sold to a waiting antiquities dealer. Other factors also seemed unexplainable. For instance, at the very time we were uncovering the first such rare objects in the Jewish Quarter, a similar fragment of a Jerusalem table came to light at a site far away in Samaria, where no excavations were currently known to be in progress, and this fragment, too, bore traces of fire. I reluctantly came to the conclusion that the fragment Rahmani bought from the antiquities dealer had indeed been taken from the Burnt House in our Jewish Quarter excavation.

According to Rahmani’s published description, various motifs are incised on the edge of the tabletop: on the long side is a ship, while on the shorter side there is a table with a single leg, bearing various vessels and flanked by two large jars with high bases. This latter depiction appears to be a precise graphic counterpart to Varro’s description noted above and is also in surprising agreement with the depiction on the Roman oil lamp also mentioned above. In ornamenting this tabletop, the Jerusalem artisan had simply chosen the motif of the table itself, with all the vessels usually associated with it; in other words, a page straight out of the book of the everyday life of his period. On the basis of these depictions, both literary and pictorial, we have been able to restore such a grouping, using finds from our excavations.

In addition to stone tables, we found an abundance of stone vessels. Indeed, the discovery of stone vessels became routine. Whenever we approached a stratum of the Second Temple Period in which a building was burnt by the Romans during the destruction of the city in 70 A.D., stone vessels invariably made their appearance as well. Thus, even in the absence of other specific chronological clues, we were often able to date a structure as Herodian solely on the basis of the presence of even a single stone vessel—or even mere fragments of a stone vessel. Generally, these vessels were accompanied by traces of fire, obviously from the destruction of 70 A.D.

Our discovery of stone vessels came as no surprise, for their existence in Jerusalem had long been known from previous excavations. What did surprise us was the great number and variety of

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complete vessels. Our discovery of them in almost every house soon led us to realize that stone vessels, previously regarded as isolated luxury items, were in fact widely used. Some of the stone vessels served the same functions as their pottery counterparts; others were of special shapes for special uses. In general, the stone vessels are a rich and variegated addition to the types of utensils known to have been in use in the Jerusalem household in antiquity.

Stoneware production in Jerusalem during this period reached a pinnacle of both technical skill and design. Stone vessels were of course produced in other lands. For example, some stone vessels found in Delos in Asia Minor are quite similar to ours. The Jerusalem artisans undoubtedly learned much from others, but the peculiar and specific need for stoneware in Jerusalem (for reasons explained below) led Jerusalem artisans to outstanding achievements. The products of Jerusalem were undoubtedly famous and were apparently unrivaled within Palestine. The one large stone jar found at Ain Feshkha and the several smaller stone vessels found at Masada and other sites were surely made in Jerusalem.

The stone vessels are generally made of a soft, readily carved limestone, found in abundance in the vicinity of Jerusalem. Among the smaller vessels found in our excavations, a few are made of other types of stone, such as alabaster or marble.

On the basis of form and finish, it is possible to distinguish between stone vessels made on a lathe and those carved by hand. In either case, the craftsmen would use chisels to give the vessels their general form and then usually would drill to extract the material from the interior before finishing.



*Courtesy Nahman Avigad*

**Machine-made stone bowls and cups, a small sample of the attractive and varied shapes and sizes Jerusalem stonemasons were producing by the first century A.D.**

The abundance of stone vessels found in the Jewish Quarter houses surprised archaeologists, but they quickly saw the explanation. Stone, unlike porous pottery, cannot be ritually unclean and therefore unusable according to Jewish dietary laws. If a stone vessel was designated for use with meat dishes, for example, and then accidentally came in contact with milk, it could be purified and then reused. But a pottery vessel subject to the same accident had to be destroyed—it could not be made clean and then reused. Thus, stone plates and bowls were in demand. And stonemasons perfected their art producing an abundant supply of these dishes for the rich residents of the Upper City.

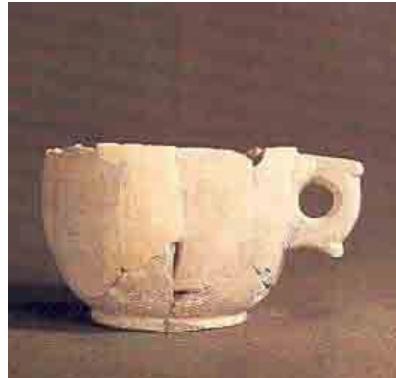
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The lathe-turned vessels have open and cylindrical shapes, as is dictated by that technique of manufacture. Among such vessels are the very impressive large jars in goblet form, standing on a high foot. The rim has a molded profile, as does the high base, and the surface is well smoothed and often ornamented with horizontal bands or vertical ribbing. Where ledge handles are present, the strips between the two handles are rougher, giving them an ornamental effect. It is possible that these jars are to be identified with the stone "jar" (*kalla*) mentioned in the *Mishnah*<sup>b</sup> (*Parah* 3, 3), a large stone or pottery vessel that was used for holding the ashes of the Sin Offering. Long ago, the late J. Brand described the *kalla* of the Mishnah as a goblet-shaped vessel with a broad rim, straight sides, curved bottom, and a high base—a description that fits our vessels perfectly.

The blocks of stone from which these jars were fashioned weighed several times as much as the finished products, which were 26 inches to 32 inches tall. This makes it all the more surprising that the ancient lathes could support such a mass, and we can only wonder how they were powered.

Most of the lathe-turned vessels, however, are much smaller than the jars: plates, bowls, and handleless cups, which are also rather attractive, some of the forms clearly imitating imported pottery vessels. These smaller vessels were readily made on a bow-powered lathe, somewhat resembling a primitive drill.

Hand-carving of stone vessels was employed for special forms where a lathe could not be used—as in the case of vessels with a vertical handle (which would interfere with the turning of the lathe) or of vessels that were not round. Of the types with handles inconvenient for turning, we may note two examples. A cup of fine form, resembling a modern coffee cup, has a delicate handle apparently imitating some pottery form of foreign origin. Ordinary cups of the period are in the form of a deep bowl; indeed bowls were generally used for drinking in antiquity. Another sort of stoneware cup was cylindrical with a pierced, vertical handle; its surface was not smoothed but rather pared vertically with a knife or an adze. These cups often have a short spout at the rim, not opposite the handle but at a right angle to it.



*Courtesy Nahman Avigad*

**Stone cup.** Before the Jewish Quarter excavations, stone vessels like these were thought to be luxury items. But the author found them in almost every Jewish Quarter house—so many, of different shapes and sizes, that he concludes that these stone vessels were as common as coffee cups today.

**Most stone drinking cups of this period were deep handleless bowls made on a lathe. But this cup with its carefully styled handle is handmade, probably the Jerusalem potter's imitation of a style popular somewhere "abroad."**

These two types of cups were the most common stone vessel found, and we encounter them often outside Jerusalem as well. The fact that they were made in various sizes, from large (6 inches high) to small (2 inches high) has led archaeologists to consider them to be “measuring cups” for liquids and for dry measures; one opinion is that their standard corresponds with that mentioned in the Mishnah, but this requires further investigation.

Handwork is, of course, also necessary on vessels that are not round, as is especially obvious on deep, square bowls—a shape not found in pottery but one apparently considered very convenient for kitchen use. Another noteworthy vessel has multiple compartments, with two, three, or four divisions; one such vessel is reminiscent of a salt and pepper shaker, while another resembles an army “mess tin” or a serving dish for a selection of relishes.



**Relish dish?** Several handmade stone vessels with multiple compartments like this were found. Perhaps it was used as a serving dish for olives and relishes, or perhaps it was an individual dinner tray

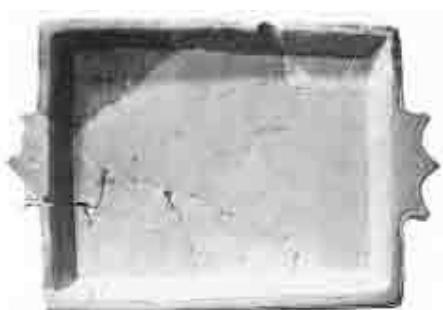
*Courtesy Nahman Avigad*

Round or elongated serving trays of stone with ornamental handles have also been found. Such trays are depicted in Roman mosaics loaded with food. In one depiction, a tray of our type bears a large fish.



*Courtesy Nahman Avigad*

**Stone tray. Scenes on some Roman mosaics show serving trays like this marble fragment filled with food for banquets. The delicate rim and ornamental handle display the skill of the master Jerusalem stonemasons.**



*Courtesy Nahman Avigad*

**Stone tray. Scenes on some Roman mosaics show serving trays like this deep stone one filled with food for banquets. The delicate rims and ornamental handles display the skill of the master Jerusalem stonemasons.**

Another handcarved vessel worthy of note is a stone oil lamp, the only example known to us. Additional stone objects were found whose original function cannot even be guessed.

All in all, we were astonished by the rich and attractive variety of stone vessels. Neither the local abundance of raw material nor the attractiveness of their shapes would alone explain this phenomenon. Moreover, their manufacture is much more costly than that of pottery, and stone vessels are more restricted and less convenient to use because of their weight and the softness of their material. Why, then, did they appear so suddenly and in such quantities in the Jerusalem household?

The answer lies in the realm of *halakhah*, the Jewish laws of ritual purity. The *Mishnah* tells us that stone vessels are among those objects that are not susceptible to uncleanness (*Kelim* 10, 1; *Parah* 3, 2), but no further details are given. Stone was simply not susceptible to ritual contamination. When a pottery vessel, on the other hand, became ritually unclean through contact with an unclean substance or object, it had to be destroyed. In contrast, a stone vessel would preserve its purity and thus its usability, even if it had come into contact with uncleanness.

One of the clearest literary witnesses to the Jewish ritual of purity relating to stone vessels is preserved in the New Testament, in the episode of the wedding at Cana in Galilee. There Jesus performed the miracle of changing water into wine. The text reads: "Now six stone jars were standing there, for the Jewish rites of purification, each holding two or three gallons" (John 2:6). These were most probably jars of the very type we have been discussing.

With the destruction of Jerusalem in 70 A.D., the flourishing production of stone vessels and stone tables came to an end, and the tradition of their manufacture was never revived.



Courtesy Nahman Avigad

**Elegant red terra sigillata pottery vessels, also seen on the cover, have been restored. Some of the finest pottery produced in late Hellenistic times, these vessels were probably imported from an eastern Mediterranean country.**

The most common article in any household in antiquity was, of course, its pottery. The corpus of Palestine pottery during the Herodian period is not especially rich, but in the light of the recent excavations in Jerusalem, it turns out to have been more variegated than previously thought. The most common vessels were those most used in the house: cooking pots and storage jars. Most of these vessels were not found in the kitchens and storerooms which, at least in our excavations, were mostly looted and destroyed; rather, they came to light in the cisterns and pools of the houses, which had been turned into refuse dumps.

The cooking pots are almost invariably blackened with soot—evidence of their daily use. We would expect, in keeping with the large number of cooking pots in which food was prepared, that there would be a correspondingly large number of bowls or plates for serving. But the pottery of this period includes few locally made bowls or plates, types that are generally found in large quantities in other periods. In this particular period, only small, thin bowls are found here, suitable only for small portions. This raises an interesting gastronomical question, for which we have no ready answer. We do know from other sources that the wealthy people of the period generally enjoyed, if anything, excessive culinary delights.

Most of the storage jars used for water, wine and oil have elongated bodies. We also found some with a more globular, sack-shaped form.

Another basic vessel-type, in this as in all periods, is the jug in its various forms, including juglets and small bottles for small quantities of oil or perfume. Equally common were the thin-walled asymmetrical flasks.

In addition to these common vessels, we also found several types of unusual pottery. Foremost are the painted bowls sometimes known as “Pseudo-Nabatean” ware. Curiously, this type of bowl was entirely unknown during the first hundred years of excavations in Jerusalem, and only since 1968, with the commencement of excavations near the Temple Mount, have these painted bowls made their appearance. They have since become a regular feature in our excavations in the Upper City as well, among the finds of the first century A.D. These bowls are very fragile, and they are seldom found intact; but even so we have been able to mend and restore an impressive group.



Courtesy Nahman Avigad

Bowls found near the Temple Mount, painted in red, brown and black floral designs. Although locally made, these bowls have been called “Pseudo-Nabatean” because like Nabatean pottery, they are thin-walled and painted with flower motifs. But their composition and style are in fact unique, and thus far these fragile vessels have been discovered only in Jerusalem. The author now prefers to call them “Jerusalem Painted Pottery.”

These thin-walled bowls, which measure about 5 inches to 6 inches in diameter, are of very fine quality and are painted on the inside in stylized floral patterns in red and, sometimes, in brown or black. Two styles of painting are evident. One employs symmetrical compositions taking

up the entire area of the bowl; the motifs are usually arranged radially, but sometimes they are in concentric circles, as on one example found in the house we called the Mansion. In the second, more carefree style, the painter often used a few quick strokes of the brush, much in the manner of abstract artists today.

When these painted bowls were first found, they were called “Pseudo-Nabatean,” for they superficially resemble the Nabatean bowls, famous for their thinness and painted motifs. But the bowls from Jerusalem are different in the form of their motifs, in their composition and even in the quality of the ware itself. They seem to be a sort of Jewish alternative to the fine Nabatean bowls, which simply did not reach the Jerusalem market in significant quantities. Since these locally produced bowls have been found thus far only in Jerusalem, it would be appropriate to recognize them as a class by themselves and to call them “Painted Jerusalem Bowls.”

No one would have previously thought that Jerusalem was famous for its glass, but now we know it held an important place in the technological history of ancient glass. This came to light through one of our most unusual discoveries—the refuse from a glass factory. This waste material included a rich variety of glass fragments—some of them distorted by heat—unfinished products, hunks of raw glass, and lumps of slag. Where the glass factory itself was located, we do not know, except that it must have been somewhere in the vicinity.

The reader may ask what value scrap glass could have for us. Scientific research is not a treasure hunt for finished products in perfect condition, and the archaeologist treasures material that can provide an insight into methods of manufacture and their development as well as he cherishes finished products. It would of course be nice to find a complete workshop, with all its various installations, tools and products in various stages of manufacture, but no such glass factory has ever been found, and the next best thing are the waste materials that derive from one. Even such refuse is infrequently found and its rare discovery in our excavations can thus be considered a blessing in disguise.

Among the vessel fragments, we could distinguish two major types of glass products, each based on a different method of manufacture. For one type, the artisan formed vessels in molds; for the other type, the artisan shaped the hot glass into the desired form by blowing through a tube.

Chronologically, the molding process is the earlier of the two. We found hundreds of fragments of thick glass bowls, hemispherical or conical in shape, all of the molded type. The glass itself is greenish, but the surface is now generally covered with a layer of thick, black patina. These

bowls, attractive in their simplicity, were very common in the Late Hellenistic period (second to first century B.C.), and similar examples have been found in many places in Palestine. Alongside these fragments were a small number of fragments from another type of bowl, also molded, but of thinner material, either rounded or carinated (sharp-angled), with rims that are modeled and bodies that are ribbed—a very common mode of decoration in the Hellenistic period.

The fragments of the second type of glass product are of closed vessels, such as small bottles of the “perfume bottle” type. This is the simplest shape to obtain using the glass blowing technique. It was probably the first shape ever produced by this process.

Our mixed find of molded and blown glass is especially interesting, for we see here a single factory using two different techniques side-by-side. Despite the numerous excavations in Israel and abroad of sites rich in glass finds, never before has such clear-cut evidence for the initial stage of glass blowing come to light. This process revolutionized the production of glass vessels and facilitated their “mass production,” relatively speaking. The invention of glass blowing can be compared to that of the potter’s wheel in ceramic production. In our glass finds we can see at least a partial explanation for the actual beginning of glass blowing.

Scholars have long believed that, from the initial invention of glass blowing, vessels have been blown from a gob of hot, plastic glass stuck on the end of a metal tube or pipe, as is still the practice today. But our finds from Jerusalem now indicate that the earliest glass blowing was done with glass tubes. These glass tubes are perhaps the very first stages of experimentation at glass blowing, followed later by the use of the blow-pipe. Our pile of glass refuse included many thin glass tubes, some of them with the beginning of a swelling at one end, though the continuation was broken off. There were also bulbs of glass the size of birds’ eggs, which had clearly been blown from glass tubes. In other words, both the pipes and the bulbs of glass composed a single element, the initial phase of blowing a glass vessel. For one reason or another, the blowing ceased on these pieces, and the vessels were never completed. It is not quite clear yet how blowing with a glass pipe was accomplished in the heat of an open hearth. The matter requires further specialized study.

Dr. Gladys Weinberg and Professor Dan Barag, well-known experts on ancient glass, examined the glass refuse soon after its discovery, and they tell me that no evidence of this sort has been found at any other site in the world, and that this find of the earliest phase of glass blowing is of revolutionary significance for technological research. In their opinion, Jerusalem is the first site at which the meeting of the two techniques, glass molding and glass blowing, has been encountered. This discovery, then, represents a transitional phase in which the production

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of glass continued in the older molding technique alongside the newly introduced technique of glass blowing. This occurred around the middle of the first century B.C.

Another glass product reflecting the process of manufacture was thin, twisted rods, most of them found broken but originally about six inches long with one end rounded and the other pointed. Generally known as "kohl sticks," and probably used for cosmetics, they are rarely found in excavations but can be seen in some museums. Here we suddenly uncovered an abundance of them. We also found the smooth rods that were the raw material employed in their manufacture. We can follow the process of their manufacture into twisted sticks from smooth rods, through the phase of twisting, to their actual finishing. The marks of the pincers used to hold the hot, plastic rods are still clearly visible. Other glass objects discovered among the refuse included spinning whorls, conical gaming pieces, discs, and inlay plaques.

It is odd that we should find such significant remains in Jerusalem, for scholars have generally assumed that the centers of glass production were located close to sites rich in silica sand, the principal raw material of glass. However, the production of glass vessels, like that of pottery or metal wares, was not restricted to a single area. Chunks of raw glass could readily be transported from place to place, and glass artisans in various locales, however remote, could use them in whatever manner they desired.

Much research still needs to be done on this material. From it, glass experts will no doubt be able to clear up many of the longstanding questions relating to the earliest history of blown glass. One of these questions concerns the part played by the Jews in the production of glass in antiquity, for it is commonly thought that their role was a major one. Though this has not been proved conclusively, our finds from Jerusalem may well be a valuable contribution to that discussion.

Unless otherwise noted, all photos and drawings in this and the following article are courtesy of Nahman Avigad.

## Refuse from a First-Century Glass Factory

Sidebar to: Jerusalem Flourishing—A Craft Center for Stone, Pottery, and Glass



*Courtesy Nahman Avigad*

**Broken bowl fragments discovered in the refuse from a first-century Jerusalem glass factory.**

Glass molding and glass blowing existed side by side in a Jerusalem glass factory during the Herodian period. Here we see the refuse from this factory—evidence of an industry in transition. The Upper City excavations present archaeologists and ancient glass experts with a unique opportunity to study a pivotal phase in the history of glass manufacture.



*Courtesy Nahman Avigad*

**Chunks of unprocessed glass discovered in the refuse from a first-century Jerusalem glass factory.**



*Courtesy Nahman Avigad*

**A heap of stems and pipes discovered in the refuse from a first-century Jerusalem glass factory.**

Found among the refuse were broken bowls; chunks of unprocessed glass; a heap of stems and pipes; a striped blowing pipe and fragments of a flask blown from it (reassembled in an artist's reconstruction); mouth and neck fragments of flasks; and pipes broken just as egg-shaped globs of glass were being blown.



*Courtesy Nahman Avigad*

**A striped blowing pipe and fragments of a flask blown from it, discovered in the refuse from a first-century Jerusalem glass factory.**



*Courtesy Nahman Avigad*

**Mouth and neck fragments of flasks discovered in the refuse from a first-century Jerusalem glass factory.**

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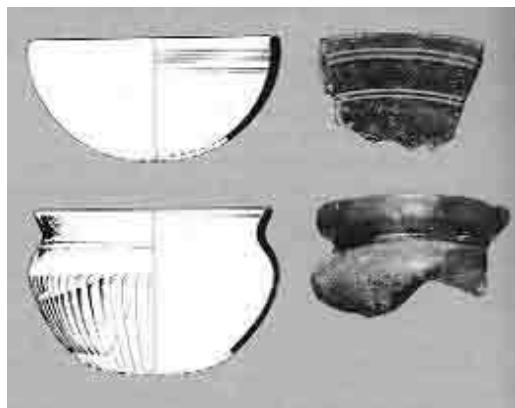
Before these pipes were discovered, scholars thought that glass vessels were blown from glass globs at the ends of metal pipes, but these finds show that in the earliest stage of glass blowing, the globs of hot soft glass were stuck onto pipes that were themselves made of glass.



*Courtesy Nahman Avigad*

**Glass-blowing pipes broken just as egg-shaped globs of glass were being blown, discovered in the refuse from a first-century Jerusalem glass factory.**

Below are fragments of glass bowls that were molded, not blown. Simple concentric circles are incised along the inside of their rims. Alongside the fragments an artist has shown what complete bowls would look like, as projected from the shape and design of each fragment. The top bowl is rounded and the bottom bowl has a ribbed body and is carinated—sharply angled just under the shoulder.

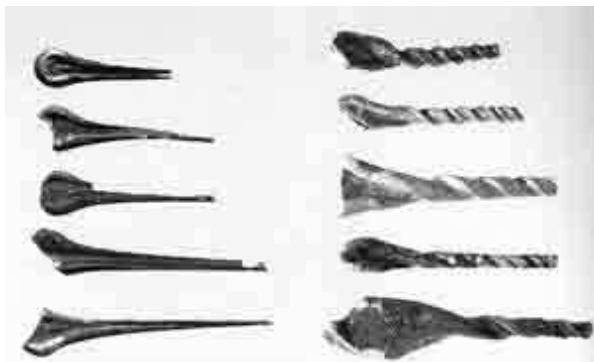


*Courtesy Nahman Avigad*

**Fragments of molded glass bowls discovered in the refuse from a first-century Jerusalem glass factory, shown with artist's reconstructions of the complete bowls. The top bowl is rounded and the bottom bowl has a ribbed body and is carinated—sharply angled just under the shoulder.**

## Making Kohl Sticks

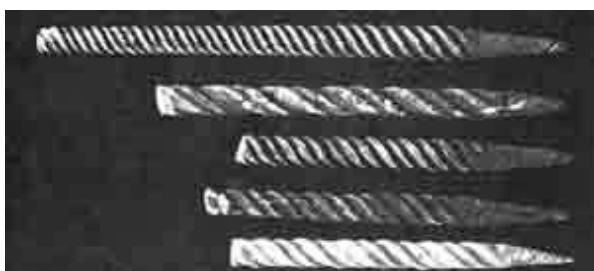
Sidebar to: Jerusalem Flourishing—A Craft Center for Stone, Pottery, and Glass



*Courtesy Nahman Avigad*

**Fragments of glass used for making kohl sticks. At left are glass sticks strengthened by heat; at right are sticks that, while still hot, were partially twisted with pincers.**

Phases of “kohl stick” manufacture. These fragments have been grouped to illustrate the steps of manufacturing the thin twisted glass rods that are called kohl sticks because they were used to apply the black eye paint kohl. Above left are glass sticks strengthened by heat; above right are sticks that, while still hot, were partially twisted with pincers. Below we see fragments of the finished product.



*Courtesy Nahman Avigad*

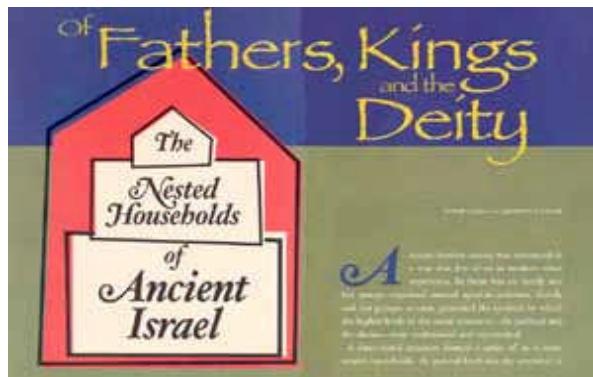
**Fragments of finished kohl sticks.**

Kohl sticks are rarely found in excavations but can be seen in some museums. In the Jerusalem glass factory, archaeologists discovered an abundance of them as well as the smooth rods that are the raw material for their manufacture.

## Of Fathers, Kings and the Deity

*The nested households of ancient Israel*

By Philip J. King and Lawrence E. Stager



Ancient Israelite society was structured in a way that few of us in modern times experience. Its focus was on family and kin groups organized around agrarian activities. Family and kin groups, in turn, generated the symbols by which the higher levels of the social structure—the political and the divine—were understood and represented.

A three-tiered structure formed a series of, as it were, nested households. At ground level was the ancestral or patriarchal household known in the Bible as *bēt 'āyb* literally “house of the father” (Genesis 24:7; Joshua 2:12, 18; 6:25). As a social unit, the joint or extended family, not the biological family, was most important. Sometimes as many as three generations lived in a large family compound, comprising a minimal *bēt 'āyb*. This, the basic unit of Israelite society, was the focus of religious, social and economic spheres of Israelite life and was at the center of Israel’s history, faith and traditions.



C.S. Alexander; © L.E. Stager

The foundation of daily life in ancient Israel was the extended family household, or *bêt 'āyb*, which lived and worked in a compound like the one shown in this reconstruction. Not only was the *bêt 'āyb* the basic unit of social organization, but it also served as a model for the organization of all of Israelite society. Just as a father exerted authority over his household, so the king ruled his “children,” the people—and God was father over the “children of Israel.” In the accompanying excerpt from their new book, *Life in Biblical Israel*, authors Philip J. King and Lawrence E. Stager argue that Israelite society was thus structured like households nested one inside the other.

In this household, there was no mistaking that ultimate authority was with the father, the paterfamilias. His word had the authority of command, subject only to the constraints of customary rules that governed Israelite society and provided a traditional framework in which his word was to be understood.

Besides the parents and unmarried children, the *bêt 'āyb* might include several generations of family members, depending on who is claimed as the paterfamilias, along with his wife or wives, sons and their wives, grandsons and their wives, the unmarried sons and daughters, slaves, servants, *geprîm*, aunts, uncles, widows, orphans and Levites who might be members of the household. The *geprîm* were non-kin who were nevertheless included in the “protective” network. A *gepr* often became a “client” or “servant” of the patron who protected him. For example, the household of Micah in the hill country of Ephraim was occupied by Micah, probably his wife or wives, his widowed mother, his sons, probably their wives, a hired priest (the Levite), and servants (Judges 17–18). To obtain a wife for Isaac, Abraham directed his servant, “You shall go to my father’s house (*bêt 'āyb*) [in Mesopotamia], to my clan (*misûpauhâlâ*), and get a wife for my son” (Genesis 24:38).

The further back one traced the ancestry, the larger the lineage or household. Very large families formed the *mis̄pāḥhlâ* or “clan.” Later in Iron Age II (1000–586 B.C.E.), the state constituted the largest family of all in ancient Israel.

At the level of the state or, better, tribal kingdom, in both ancient Israel and neighboring polities, the king functioned as paterfamilias. His subjects were dependent on personal relationships and loyalty to him; in return for this allegiance, they expected protection and succor. As sovereign and proprietor of the land, the king presided over his “house” (*bayit*), which included the families and households of the whole kingdom. Thus, in the Tel Dan stele of the ninth century B.C.E. the southern kingdom of Judah is referred to as the “house of David” (*byt dwd*).<sup>a</sup> The same designation has recently been deciphered in the contemporaneous Mesha stele found in Moab.<sup>b</sup> Similarly, the northern kingdom of Israel is known as the “house of Omri” (*beut H̄umri*) in Assyrian annals.<sup>1</sup>

The king, however, does not sit at the top of the social order; rather it is Yahweh (in the case of Israel) who is the supreme paterfamilias. He is the ultimate patrimonial authority over the “children” of Israel, who are bound to him through covenant as his kindred (*'am*) or kindred-in-law.<sup>2</sup> Human kingship and divine kingship are simply more inclusive forms of patrimonial domination.

Thus we find households nested within households on up the scale of the social hierarchy, each tier becoming more inclusive as one moves from domestic to royal to divine levels. At the same time, this entire structure reinforces and legitimates the authority of the paterfamilias at each of the three levels. In this way, the family and household provide the central symbol about which the ancient Israelites created the world in which members of that society expressed their relationships to each other, to their leaders (whether “judge” in early Israel or, later, “king”) and to the deity. Through the three-tiered patrimonial model of Israelite society, we can understand how kingship in Israel, as elsewhere, could be a compatible institution with other forms of patriarchal dominance.

It is sometimes suggested that the Israelite monarchy was some kind of “alien” urban institution grafted onto a reluctant egalitarian, kin-based tribal society, which through internal conflict and contradiction became a class-riven society dominated by an oppressive urban elite.<sup>3</sup> This fantasy—kingship cancelling kinship and giving rise to class consciousness—is little more than Karl Marx’s dialectic in modern guise, in which society evolves from “primitive communalism” to “slave society” with their masters holding the means of production. It is a groundless analysis.

Seen through the lens of the patrimonial model we are using, Israelite kingship is simply a higher level of kinship.

Similarly, the rural-urban conflict posited by this Marxist perspective is more a mirage than a reality in ancient Israel. There were inequalities to be sure, both in premonarchic and monarchic Israel, but social stratification along class lines and class consciousness did not exist. The vertical relationships of superior to inferior were of a different sort and far more variegated than class concepts allow.

Take the term ‘ebed, literally “servant,” for example. It can refer to anyone from a slave to a high government official, as on certain seals which refer to ‘ebed hammelek, “servant of the king.”<sup>14</sup> The particular social context of the term in ancient society must be known in each instance in order to understand its meaning. In a society in which countless variations within the patrimonial order were possible, it is not so difficult to imagine a farmer such as Saul or a shepherd such as David becoming king. Moreover, because kingship was not an alien institution, it could be idealized long after the demise of the monarchy (in 586 B.C.E.) into the messiah-king *redidivus*.

As already noted, family and kinship relationships were organized largely around agrarian activities. That, too, separates us from the ancients as we become further removed from our agrarian roots. Today less than two percent of the population in the United States are farmers. In ancient Israel, it was just the opposite. Nearly everyone, even those living in royal cities such as Jerusalem and Samaria, was involved in some form of agriculture and had encounters with animals wherever they went. Two of the main city gates leading into Iron Age Jerusalem took their names from the creatures being bought and sold there—the Sheep Gate (Nehemiah 3:1, 32, 12:39) and the Fish Gate (2 Chronicles 33:14; Nehemiah 3:3; 12:39; Zephaniah 1:10).

Agricultural life was conducted by a “calendar” very different from ours. Our appointment and planning books mark the day, month, year and even the hour when something is to be done. In premodern agricultural societies, activities were organized around a different “clock” and “calendar.” In agrarian societies one rises with the sun and retires when it sets. The seasons of activities revolve about farming and herding.

The Gezer calendar highlights the seasonal patterns of the agricultural year. This small limestone plaque with a mere seven-line inscription was found at Gezer in 1908 by the Irish archaeologist R.A.S. Macalister. It dates to the second half of the tenth century B.C.E. (Solomon’s reign) and is one of the oldest known Hebrew inscriptions. It describes agricultural

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operations during the course of 12 months, with time subdivided by the seasonal farming activities. It refers to the months of the year not by their names but by the harvest associated with them:

His two months are (olive) harvest,  
His two months are planting (grain),  
His two months are late planting;  
His month is hoeing up of flax,  
His month is harvest of barley,  
His month is harvest and feasting;  
His two months are vine-tending,  
His month is summer fruit.<sup>5</sup>

The produce mentioned in the Gezer calendar is consistent with the Biblical description of the Promised Land as “a land of wheat and barley, of vines and fig trees and pomegranates, a land of olive trees and honey, a land where you [Israelites] may eat bread without scarcity” (Deuteronomy 8:8–9). The land itself, however, belonged to God, although it was entrusted to the kings and their subjects (Genesis 12:7; 17:8; Joshua 1:2–3). The earthly king, the paterfamilias of his subjects, was only the representative of the heavenly king.

Excerpted and adapted from Philip J. King and Lawrence E. Stager, *Life in Biblical Israel* [Louisville: Westminster John Knox, 2001].

## Ancient Life: Table Manners?

*An ancient mosaic gives us a bird's-eye view.*



Scala/Art Resource, NY

When ancient Greeks asked, “Which way to the men’s room?” they weren’t trying to find a lavatory; they were looking for the dining room. The Greek aristocrat’s dining room, or *andron* (literally “men’s room”), took its name from the custom of separating men and women at meal time. Only men, and the occasional courtesan, took part in ancient dinner parties.

This mosaic fragment—found in 1833 in front of the Aurelian wall, south of Rome’s Aventine Hill—is a second-century A.D. reproduction of a popular design by the second-century B.C. Greek mosaicist Sosos. Signed by one Herakleitos, the mosaic depicts an *andron* floor littered with food after a dinner party. In the traditional Greek feast, guests reclined on couches placed atop a raised dais; they would toss chicken and fish bones, lobster and urchin shells, and unconsumed vegetables onto the floor.

These stag banquets were usually followed by lavish drinking parties known as *symposia*. Ancient writings are scattered with lewd references to the courtesans and flute girls present at *symposia*—and to an excessive fondness for drink. (According to an anecdote by the historian Timaeus [c. 356–260 B.C.] of Tauromenium, in Sicily, one group of young men got so drunk they imagined they were on a storm-tossed ship; to keep their host’s house “afloat,” they tossed his furniture outside.)

More often, *symposia* were well-regulated, highly ritualized events that provided an opportunity for intellectual discussion. Strict rules dictated how much wine should be served, how much water should be mixed with the wine (Athenians considered drinking undiluted wine barbarous) and how quickly the wine should be consumed.

Sosos's original Unswept-Floor mosaic probably decorated the palace of Eumenes II (197–159 B.C.) at Pergamum, in Asia Minor. The first-century A.D. Roman historian Pliny tells us that Sosos's designs were all the rage among the Roman elite: Copies of this mosaic have been found in Pompeii and on the Aegean island of Delos. A copy of a different mosaic by Sosos—showing doves drinking at a birdbath—was commissioned by the Roman emperor Hadrian (117–138 A.D.) for his elaborate villa at Tivoli.

## Ancient Life: Temple Dancers

*No PC in B.C.*



*Jurgen Leipe*

As Harkhuf, a high official of Pharaoh Pepi II (2246–2152 B.C.), was returning to Egypt from the region of modern Ethiopia, he sent word ahead to the king. Eight-year-old Pepi showed no interest in the treasures of ebony, ivory or incense Harkhuf had for him. But the boy was extremely excited to hear about the “actual dancing dwarf” that Harkhuf was bringing back to perform in a temple. Pepi’s letter, inscribed in Harkhuf’s tomb, cautions his official to be careful not to allow the Pygmy to fall in the Nile and drown.

The ancient Egyptians adored the Pygmies for their dancing, as depicted in this 3-inch-high ivory toy (now in the Cairo Museum), found 30 miles south of Cairo in the tomb of a young girl, named Hapi. Carved in the 20th century B.C., the three performers stand on pedestals that can be rotated by tugging on string wound through holes in the rectangular base—simulating a whirling dance.

Egyptian inscriptions refer to Pygmies as “Dwarfs of the Gods’ Dances” who dwell in the “Land of the Spirits.” To the ancient Egyptians, the Pygmies were semi-divine—but they were also only semi-human. Because of their diminutive size, they were brutally captured, wrenched from their homes and put to use as dancing slaves. This ambivalent attitude toward the Pygmies is apparent in young Pepi’s warnings to Harkhuf: “Get worthy men to lie around him [the captured Pygmy] in his tent! Inspect him ten times a night!” The poor Pygmy, to Pepi, and probably to Egyptians in general, is no more than a strange, cute, wild animal that might try to escape.

## Ancient Life: Letter Perfect

*The Roman postal service*



*Erich Lessing*

Neither snow, nor rain, nor heat, nor gloom of night kept Roman postal carriers from completing their rounds.

The going was made easy by the meticulously engineered roads that crisscrossed the vast Roman empire. Over this network, horse-drawn mail carts (such as the one depicted in this second-century A.D. relief from Austria) could travel 50 miles a day. Messages of the utmost urgency were carried by relay teams that covered 170 miles a day.

The emperor Augustus (27 B.C.–14 A.D.) established Rome's first official postal service to communicate quickly and reliably with his far-flung governors and military officers. The so-called *cursus publicus* was strictly reserved for government officials; private letters were usually carried by servants or merchants. Augustus and his successors built about 47,000 miles of post roads, along with numerous relay stations to quarter animals and ease the transfer of cargo. These stations generally employed a stationmaster, an accountant, a veterinarian, grooms and mail carriers.

The *cursus publicus* was divided into two branches. The *cursus velox* (fast course), devoted to expediting communication throughout the empire, carried loads of no more than 1,500 pounds, usually drawn by horses. The *cursus clabularis* (open wagon course) used oxen to transport weightier loads.

Although the *cursus publicus* was reserved for official business, influential Romans could, and did, use the service for personal ends. One such person was the lawyer and statesman Pliny the Younger (62–114 A.D.), who then sent an apologetic letter to the emperor Trajan:

“Up to now my Lord, I have only issued permits for people and letters to use the imperial post on your business. I have broken my own rules because of an emergency. My wife heard that her grandfather had died and was so upset that she wanted to rush off and visit her aunt and I found it very hard to refuse to give her a permit to travel by the imperial post, as it is the quickest way ... I relied on your kindness and acted as though I had already received the favor even though I had not yet asked you for it. I did not wait until I had asked you, because if I had waited it would have been too late.”

## Ancient Life: Desert Fruit

### *A History of Dates*



©The British Museum

The man in this 2-foot-tall, first-millennium B.C. Syrian relief is about to fertilize a female date palm by smearing pollen from a male date palm over its flowers. Our farmer hopes to create lots of little date palms, from which he will cull the female trees and cultivate them for their sweet fruit.

Because date palm trees are dioecious (that is, either male or female), it is more efficient to pollinate female trees artificially than to rely on capricious natural agents like the wind or insects. The trees reach full productivity when they are 30 years old and only begin to decline after a century.

A single date palm produces up to 20 bunches of fruit—which is resistant to spoilage because of its high sugar content. The heart of the palm provides a celery-like vegetable, and the tree's sweet sap is used to make fermented wine. Southern Mesopotamian date palm fronds were lashed together to form the walls of ancient huts.

The earliest-known date seeds were found in Indus Valley settlements dating to the sixth millennium B.C., suggesting that dates originated in the East and were carried to the Near East and Egypt. Date seeds were found in the third-millennium B.C. royal cemetery at Ur.

During the second half of the second millennium B.C., workers from Deir-el-Medina (who constructed the royal tombs in Egypt's Valley of the Kings) received dried dates as part of their wages. Dates were also cultivated in the mid-tenth century B.C. Sabaean kingdom, on the coast of modern Yemen, and sold to travelers following the incense route stretching from southern Arabia to Petra and Gaza.

## Ancient Life: The Eyes Have It

### *Ancient Egyptian cosmetics*



O. Louis Mazzatorta/National Geographic Society

It's a familiar image from wall paintings and painted statues: Ancient Egyptians with almond-shaped eyes, thickly outlined in dark makeup.

Men and women, kings and queens, and even children wore cosmetics in pharaonic Egypt. They applied eye makeup with the aid of delicate spoons carved in charming shapes—such as the swimming girl with outstretched hands.

Green and black were the most popular colors to enhance the eye. A green pigment (*udju*) made from malachite, a copper ore mined in the Sinai, was used to touch up the eyebrows and the corners of the eyes. Black makeup (*mesdemet*), called kohl in modern Egypt, was applied to the rims and lashes of the eye. Kohl was made from a dark gray lead ore known as galena, which is found around Aswan and on the coast of the Red Sea.

Both malachite and galena were ground on a palette and then mixed with water, or with an ointment derived from animal fat, to make a paste that would adhere to the eye. (Even the humblest of New Kingdom [1550–1070 B.C.] graves frequently contained such palettes.) Then, as now, achieving a flattering line required a steady hand: In applying kohl, the polished tip of a wooden, bronze, obsidian or glass stick was moistened, dipped into the pigment and twisted until the tip was uniformly coated; then the stick was placed at the inner corner of the eye and slowly drawn outward over the closed eyelids—leaving a heavy line on both the upper and lower lids.

Eye makeup was not only used to create the feline beauty that seems so quintessentially Egyptian. Heavy black kohl eyeliner helped protect the eyes from the intense glare of Egypt's sun. (Even today baseball, football and soccer players smear black paint on their upper cheeks to reduce sun glare.) When used as a salve, kohl also has disinfectant and fly-deterrant properties, which may be why it is listed numerous times as a treatment for eye diseases in the 16th-century B.C. Ebers Medical Papyrus.

The act of applying makeup was thought to invoke the protection of the goddess Hathor, who was often associated with sexuality and motherhood. Thus outlining the eye was not only an investment in one's personal charms, but it was also a fashioning of one's personal protective amulet, one that couldn't be easily lost or misplaced.

## Ancient Life: Practical Papyrus

*The Plant with a Thousand Uses*



Giraudon/Art Resource, NY

Ancient Egyptian farmers harvest papyrus on this relief from the mid-third-millennium B.C. tomb of Nefer el Ka-Hay, in Saqqara, Egypt, about 10 miles south of Cairo.

Papyrus was particularly abundant in the marshes of the Nile Delta. In fact, the name for Lower Egypt (that is, northern Egypt) consisted of papyrus plants growing out of the hieroglyph for “land.”

The Egyptians wove the versatile papyrus reed into mats, rope, fabric and utensils. They even lashed together stalks of papyrus to create rafts, allowing them to cross the crocodile-infested waters of the Delta.

But papyrus's noblest use was as a writing material. (Our word “paper” derives from the Greek *papyros*.) Papyrus sheets were produced by removing the plant's green outer layers, cutting the pith into thin strips, soaking the strips in water to remove the sugars, and pounding the strips to break down the fibers. The flattened strips were then placed on top of one another at right angles, forming a square sheet, and this sheet was pounded again to create a felt-like texture. Finally, the sheets were weighted down with a heavy stone slab while they dried out.

Shorter items like letters and receipts were written on individual papyrus squares, rarely much larger than 15 inches on a side. Longer texts were recorded on scrolls (or rolls) formed by attaching papyrus sheets together, end to end; a common length of a papyrus scroll was 20

squares. These long scrolls would be inscribed with ink and rolled up like a carpet, with the writing on the inside.

The oldest papyrus sheets were discovered in a tomb in Saqqara dating to around 3000 B.C. Papyrus continued in use until cloth paper was introduced from the Far East in the eighth and ninth centuries A.D.

## Ancient Life: Need a Lift?

### *Roman Construction Cranes*



*Werner Forman / Art Resource, NY*

Five workers power a crane to hoist building materials to the roof of one of Rome's monuments, in this relief from the first or second century A.D. The carving was found in the tomb of the Haterii family in Rome; Quintus Haterius Tychicus, a freedman, was probably a building contractor who helped erect some of the multi-storied, marble-clad buildings that lined the Via Sacra, the main street of the Roman Forum.

Passionate about machinery, the Romans used construction cranes like this one to build multi-level structures. The reason they could put up such large buildings was that they had invented an extremely strong and durable form of concrete (*opus caementicium*) in the early fourth century B.C. Roman concrete was made by mixing stone aggregate—pebbles or gravel—with a mortar of quicklime, water and sand. (Quicklime was produced by heating limestone until all the water in the stone evaporated.) The mixture was poured into special molds and allowed to harden.

The secret behind the strength of Roman concrete was its use of fine-grained volcanic sand from Pozzuoli, known as “pozzolana.” Pozzolana concrete was so durable that it was used to build the foundations of Roman bridges. Even river-borne sand and debris failed to erode the bridges’ concrete piers; some of these structures remain in use today.

## Ancient Life: Roman Haute Cuisine

*Fried flamingo, anyone?*



*The Baltimore Museum of Art*

Were the ancient Romans simply the Italian connoisseurs of their day? Were they fond of corn-meal polenta, roasted potatoes, eggplant, and penne in tomato sauce, followed perhaps by a cup of thick, sweet espresso?

Nope. Not unless Roman ships did indeed cross the Atlantic, for these foods (except for the pasta, which arrived on the scene much later) all came from the New World.

What the Romans did eat is suggested by this third-century A.D. mosaic from Greco-Roman Antioch, on Turkey's Mediterranean coast near the border with Syria. The mosaic, which once covered the floor of a dining room in Antioch's House of the Boat of Psyche, depicts (from left to right) personifications of the Harvest (*Opora*) and Fields (*Agros*) enjoying the fruits of their labors while being served by Wine (*Oinos*).

The Romans cultivated various grains—barley, spelt (a variety of wheat), rye and millet—to make porridges and breads. They harvested grapes, apples, pears, pomegranates and plums. And they loved figs, which they mixed with sesame and fennel, rolled into balls, wrapped in fig leaves and then dried in the sun. Geese were even force-fed dried figs—so that their livers could be used to produce a Roman version of *foie gras*.

The Romans also ate their vegetables: especially carrots, asparagus, chickpeas, beets, cabbage, and rutabagas. The emperor Nero (37–68 A.D.) consumed leeks to keep his voice in shape, and his mother, Agrippina, is thought to have killed her husband, the emperor Claudius, by poisoning a tasty dish of mushrooms.

Not unlike modern Italians, the Romans liked cheese. Martial (40–104 A.D.) wrote that cheese mixed with water and cracked wheat made for a delicious cake.

One ancient Roman, Marcus Gavius Apicius, produced an entire cookbook devoted to sauces—including the famed garum, a salty fish sauce that the Romans shipped throughout the Mediterranean. In another cookbook, Apicius provides recipes for ordinary dishes of fish, pork, goat, chicken, geese, duck, deer and pigeon. But Apicius was also concerned about the more adventurous palette, telling his readers how to prepare flamingo, nightingale tongue, stuffed sow's womb, camel heel and oak grubs.

Of course, no ancient Roman meal would have been complete without wine. As Horace says, “Bacchus opens the gate of the heart” (*Satires* 1.4).

## Authors

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## Notes

### Jerusalem Flourishing—A Craft Center for Stone, Pottery, and Glass

- a. An ossuary is a rectangular box with a lid, usually hewn out of limestone, which was used as a depository for secondary burial of a deceased person's bones.
- b. The *Mishnah* is the body of Jewish oral law, specifically, the collection of oral laws compiled by Rabbi Judah the Prince in the second century.

### Of Fathers, Kings and the Deity

- a. See "["David' Found at Dan."](#) BAR 20:02; Philip R. Davies, "["House of David' Built on Sand: The Sins of the Biblical Maximizers."](#) BAR 20:04.
- b. See André Lemaire, "["House of David' Restored in Moabite Inscription."](#) BAR 20:03.
1. A. Leo Oppenheim (translator), "Babylonian and Assyrian Historical Texts," in James B. Pritchard, ed., *Ancient Near Eastern Texts Relating to the Old Testament*, 3rd edition with Supplement (Princeton: Princeton University Press, 1969), pp. 284–285.
2. Frank M. Cross, *From Epic to Canon: History and Literature in Ancient Israel* (Baltimore: Johns Hopkins Univ. Press, 1998), pp. 3–21.
3. John Bright, *A History of Israel*, 4th edition (Louisville: Westminster John Knox, 2000), p. 187 ff.; G. Ernest Wright, "The Provinces of Solomon," in N. Avigad et al, eds., *Eretz-Israel 8* [E.L. Sukenik Memorial Volume] (Jerusalem: Israel Exploration Society, 1967), pp. 58–68; Norman K. Gottwald, *The Tribes of Yahweh: A Sociology of the Religion of Liberated Israel, 1250–1050 B.C.E.* (Maryknoll, NY: Orbis, 1979), Part IX; see also his *The Politics of Ancient Israel*, Library of Ancient Israel (Louisville: Westminster John Knox, 2001). For the theory of patrimonial authority, see Max Weber, "Economy and Society," in G. Roth and C. Wittick, eds., *Economy and Society* vol. 2 (Berkeley: University of California, 1978), ch. 12. For its application to Ancient Israel, see L.E. Stager, "Archaeology of the Family," BASOR 260 (1985), pp. 25–28. For its application to the whole of the ancient Near East, see J. David Schloen, *The House of the Father as Fact and Symbol: Patrimonialism in Ugarit and the Ancient Near East*, Studies in the Archaeology and History of the Levant, vol. 2 (Cambridge: Harvard Semitic Museum, 2001); Baruch Halpern, *The Constitution of the Monarchy in Israel*, Harvard Semitic Monographs No. 25 (Chico, CA: Scholars Press, 1981); Hayim Tadmor, "'The People' and the Kingship in Ancient Israel: The Role of Political Institutions in the Biblical Period," *Journal of World History* 11 (1968), pp. 46–68.
4. For example, seals nos. 6–11 in Nahman Avigad and Benjamin Sass, *Corpus of West Semitic Stamp Seals* (Jerusalem: Israel Exploration Society, 1997).