



AN ISRAELITE STORAGE JAR

from the time of Judges

By Boyd SeEVERS, Matthew Bauman and Chad ZiEMER

About 1200 BC, the ancient Israelites were settling into their new home in Canaan during the period described in the book of Judges. Archaeological research shows that a common part of their material culture at this time was a particular type of large clay storage jar that could hold twenty to twenty-five gallons of food or drink. One of these ancient jars came to light in the 2016 excavation conducted by the Associates for Biblical Research at Khirbet el-Maqatir in central Israel.

Israelite Settlements

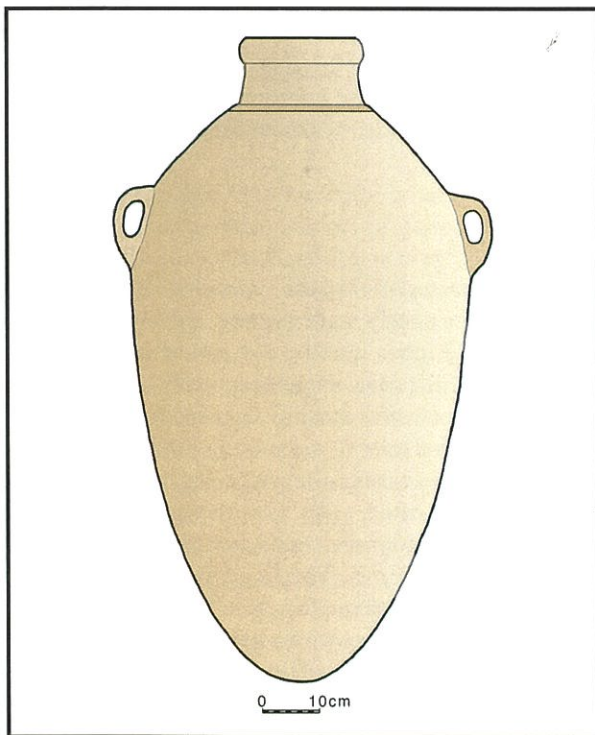
This ancient clay storage jar was uncovered in June 2016 at one of several hundred small agricultural settlements that the Israelites established as they settled down from their prior nomadic existence and began to build homes and live as farmers as well as herders. Archaeologists call this period Iron Age I (1200–1000 BC). Research shows that many of these

In this article we give our readers a glimpse into Israelite domestic life and how they crafted and used jars like this one uncovered at Khirbet el-Maqatir. This find was carefully restored and is now part of a unique exhibit at the University of Northwestern, St. Paul!

settlements share a number of common characteristics including elliptical sites that created enclosures for animals, four-room pillared houses, the absence of pig bones, and simple pottery that included the particular type of large storage jar described here.

Elliptical Settlements

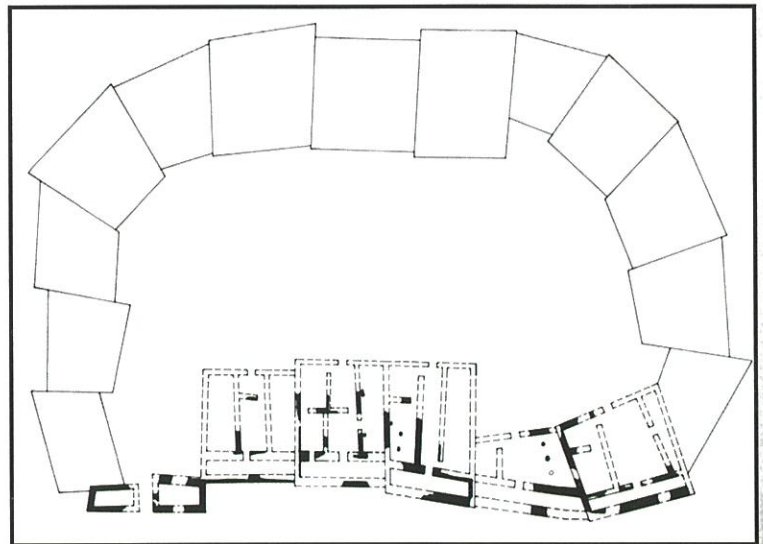
Israelite sites during this period were often elliptical or oval shaped. This layout, outlined by simple, connected homes, formed an enclosure to keep animals in the center of the site. Such sites are also called “courtyard sites” because of their large central courtyards that apparently supported the inhabitants’ primary occupation—herding animals. This design may have developed from their earlier nomadic lifestyle where tents may have been arranged in a similar layout. However, not all Israelite settlements during this time were elliptical, especially when the Israelites decided to build their homes on the ruins of earlier settlements to take advantage of readily available building materials and parts of structures still intact.



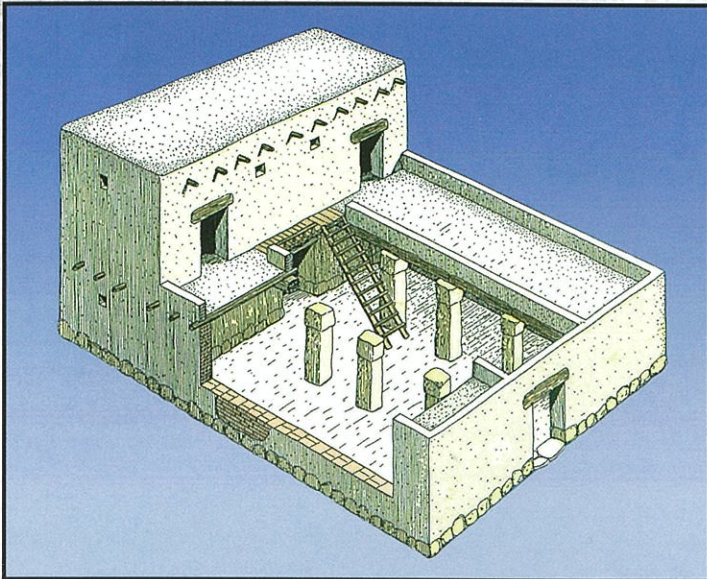
Leen Ritmeyer

Left: Collar rimmed jar: This is one of the most common types of Israelite storage jars discovered by archaeologists. “Pithos”, and the plural “pithoi”, is an ancient Greek term for large earthenware container.

Below: Elliptical settlements connected the homes and created a central enclosed courtyard for keeping animals.



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A four-room pillared house.

Leen Ritmeyer



Michael Luddeni

Modern example of collared rim pithoi at Shiloh of the same type that Dr. Seevers and his students reconstructed.



The remains of an ancient Israelite home: Dr. Seevers and UNWSP students David Gerry and Wade Weeldreyer.

Four-Room Houses

The Israelites built many of their homes during this time in a pattern now called the four-room house. This plan consisted of a rectilinear layout with three parallel rooms and a fourth, perpendicular “broad room” that ran across the width of the house. The various rooms would have served many functions including food processing and storage, producing small crafts, and stabling animals.

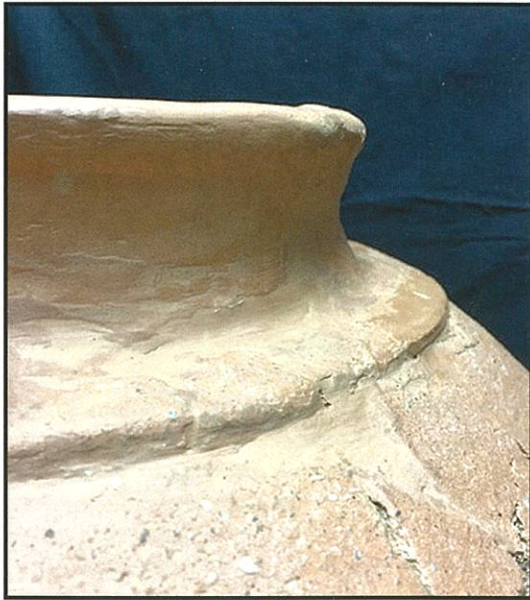
Lack of Pig Bones

Another significant characteristic of early Israelite sites is the absence of pig bones. During a modern archaeological dig,

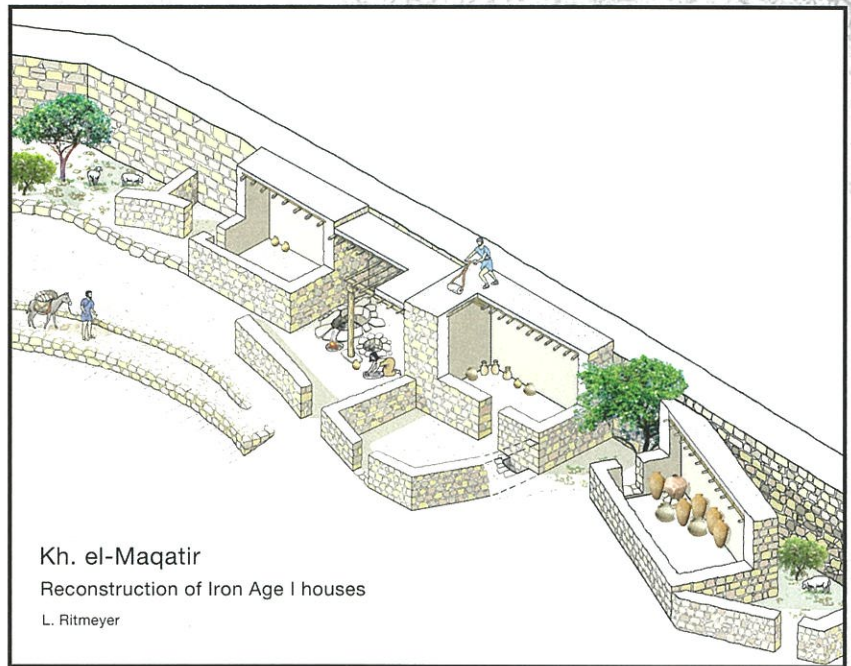
excavators commonly save all the bones and have them analyzed by an expert who can identify the type of animal as well as how it was killed, which can show if it was slaughtered for food or in religious sacrifice. Such analysis produces information about the economy, diet, and religious practice of the inhabitants. Bones from ancient Canaanite sites often include ca. 3% pig bones, whereas Philistine sites may have 7–20% pig bones, indicating how much pork was a part of their diet. By contrast, Israelite sites in Iron Age I typically yield no or very few pig bones, suggesting that these Israelites were following the biblical prohibition against eating pork (Lv 11:7; Dt 14:8), at least at this time. Excavation of later Israelite sites in Israel’s Northern Kingdom show a meaningful increase in the number of pig bones, perhaps reflecting the presence of non-Israelites or else a tendency by northern Israelites to disobey the biblical command against eating pork.

Simple Pottery

The final characteristic of the emerging Israelite culture is their simple, rather poorly made pottery. In contrast to the much more varied and higher quality pottery of the contemporary Canaanites and Philistines, Israelite pottery exhibits relatively few forms and poor workmanship. Typical forms include large and small storage jars as well as cooking pots, all of which were used for storing, processing and preparing food. The clay used to make the pots is often gritty and the pots are poorly fired, resulting in heavier and more fragile pottery than that produced by more advanced cultures. The large storage jar found in the ABR dig reflects these characteristics. Its clay is gritty and its poor quality probably caused it to break when its owners tried to move it, so they abandoned it. After excavation, the poor quality of the broken pot made it difficult and expensive for a professional conservator to restore, and the pot broke again into dozens of pieces during shipment to the US.



Boyd Seevers, Ruth Jostad



Kh. el-Maqatir
Reconstruction of Iron Age I houses
L. Ritmeyer

Leen Ritmeyer

Left: Collar rim close up of the jar Dr. Seevers and his students reconstructed.

Right: Illustration of the small homes at Khirbet el-Maqatir where the pithos jar was found.

In addition to the poor craftsmanship, the storage jar from the ABR dig is also characteristic of Israelite culture at the time because of its particular type. Archaeologists call these large storage jars “pithoi” (singular “pithos”). Israelites liked to decorate their pithoi with a small ridge or collar on the pot’s neck or shoulder. American archaeologist William Albright coined the term “collar-rim store jar” in the 1920s to describe this style. Numerous collar-rim pithoi are commonly found in settlements from this time in Israel’s central hill country as well as in the northern highlands east of the Jordan River, both key areas settled by the Israelites after their conquest.

Collar-Rim Pithoi

Archaeologists have actually found several different types of Israelite pithoi. The two most common are the aforementioned collar-rim pithos, found throughout much of the central hill country, and the longer-necked Galilean pithos, used in the northern region of Galilee. The collar-rim pithos, the most common, first appeared in a few Canaanite locations during the earlier Late Bronze Age, then became quite popular at Israelite sites during Iron Age I. While collar-rim pithoi were manufactured primarily in Israelite regions, some made their way to neighboring districts—Ammon, Philistia, and the Canaanite areas.

How did Israelites make these pithoi? Pithoi always have two handles and the neck is typically short, often bearing the distinct collar that gives the most common style its name. Analysis of the clay used shows that many were made from local clay, while others were produced in distant workshops. Sometimes the locally made pithoi were obviously produced by less skilled potters, whereas distant, specialized potters made better pots. Regardless of locale, pithoi typically have bodies formed by hand from coils of clay, and the bodies were then attached to the neck and rim, often made on a potter’s wheel. By contrast, the

pithos from Khirbet el-Maqatir was made completely by hand, perhaps reflecting poorer, local manufacture.

How were pithoi used? They generally served as storage containers for food or water. Many early Israelite settlements had no readily available sources of water, such as a spring, well, or even cisterns for storing water. This suggests their inhabitants fetched water in smaller jars from some nearby spring, commonly one-half to two miles away, then stored that water in pithoi. In addition, when pithoi are found in excavated buildings destroyed by fire in antiquity, the pithoi often contain charred grain. Along with water and grain, pithoi could also have held other foodstuffs such as wine or oil. Occasionally they were also used in burials to hold corpses.

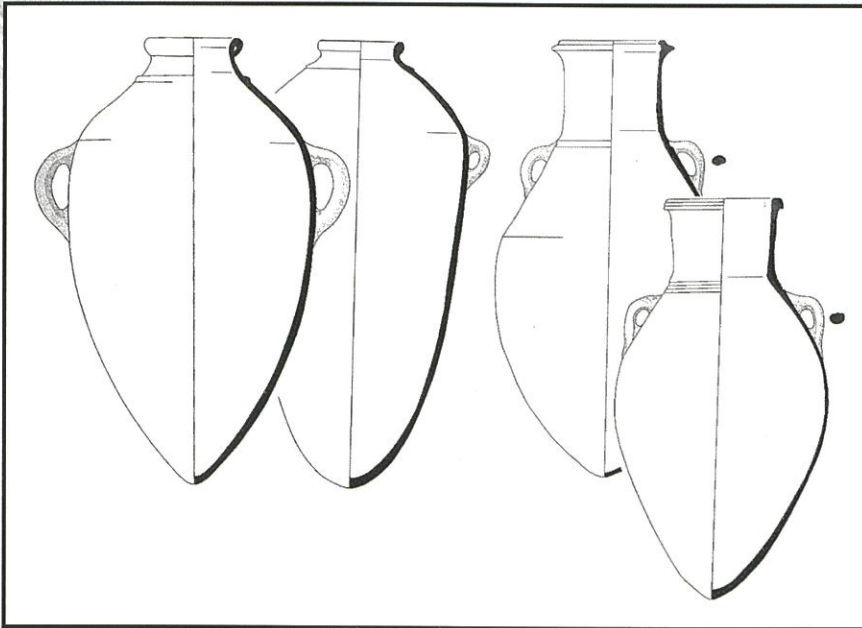
Why did pithoi have rounded bottoms? Most ancient pottery forms have rounded bottoms because it makes the pot stronger and less likely to break. How did people use pots with rounded bottoms? Round-bottom cooking pots could be set into coals or on stones arranged to accommodate their shape, but storage jars are usually placed on floors. Some storage containers are found set into depressions dug into dirt floors or even into bedrock, but usually the pots were simply set on a flat floor and leaned against a wall. The pithos discovered at the ABR dig was set 18” into the floor of its home.

The large, heavy, fragile pieces proved very difficult to restore. The American excavators could not do it, nor could a Palestinian restorer in the Arab city of Nablus. Finally, an Israeli conservator, arguably the best in the country, said she could restore the pot, but it would be very difficult and expensive. She reassembled and rebuilt the pithos over a period of several months.

The Pithos' Discovery, Restoration, and Shipment

The pithos discovered by ABR and the site where it was found exemplify most of the characteristics just described. It came from a level of habitation dated to about 1200 BC—the time of Judges. One side of this settlement included a row of three homes, and the pithos was in the end home. As they were excavating, diggers found a handle and a piece of a rim from a pithos, so they knew they had evidence of yet another of the many dozens of pithoi found at the site.

Fortunately, further digging began to reveal the body of the pithos, and eventually, the rest of the broken but complete bottom two-thirds of the vessel. Much of the upper part was found nearby as well. This mostly-complete storage jar turned out to be the best Iron Age I artifact found in ten years of digging Iron Age I remains at the site.



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Diagrams of collar rimmed and Gallilean pithoi.



The KeM pithos jar emerges from the ground.

Michael Luddeni



Michael Luddeni



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The pithos jar pieces were washed, registered and ready to be restored. The find turned out to be the best Iron Age I artifact discovered in ten years of digging Iron Age I remains at the site.



Above: Approximately 100 pieces of the jar were excavated from a level of habitation dated to about 1200BC.

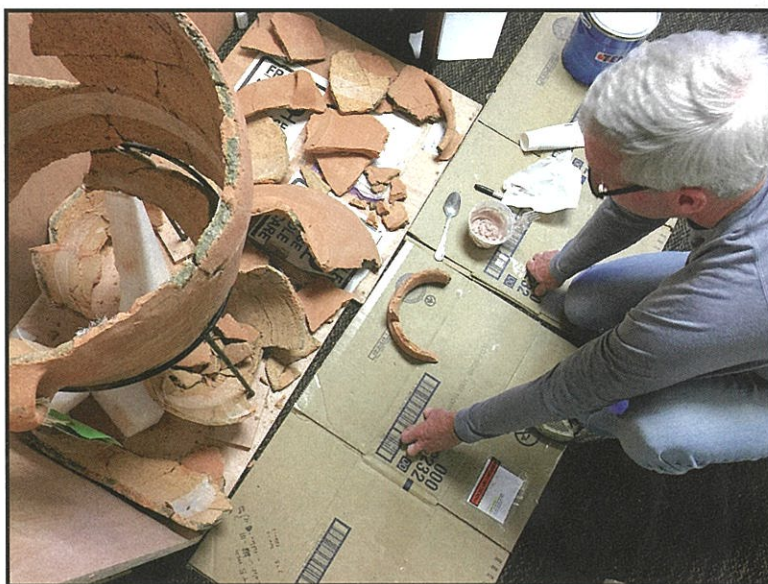
Above middle: The pot, pictured here in Israel, was beautifully reassembled and rebuilt over several months by an expert Israeli conservator.

Above right: The crate finally arrives at UNWSP!

Right: Alas, the heavy and fragile jar was badly damaged during the journey.

Below right: Dr. Seevers and his students begin the task of organizing the pieces for the reassembly process, which would take place in successive stages.

Below: Dr. Seevers and his students researched and located the types of resin, coloring, glue and plaster needed for the job of restoring the jar.



Photos of restoration progress by Boyd Seevers and Ruth Jostad

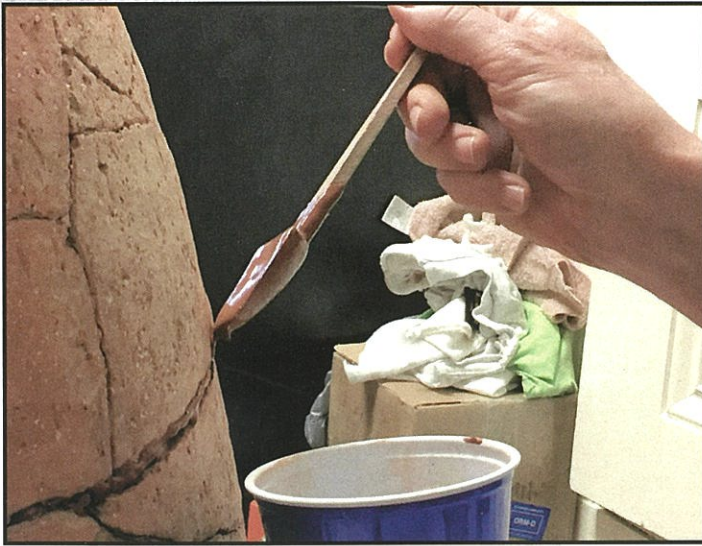
After the approximately one hundred pieces of the pithos had been removed from the ground, they had to be washed, registered, and then hopefully put back together. The large, heavy, fragile pieces proved very difficult to restore. The American excavators could not do it, nor could a Palestinian restorer in the Arab city of Nablus. Finally, an Israeli conservator, arguably the best in the country, said she could restore the pot, but it would be very difficult and expensive. The University of Northwestern—St. Paul, Minnesota, committed the needed monies, and the Israeli conservator reassembled and rebuilt the pithos over a period of several months.

Shipping the restored pithos to the USA proved a great challenge. After finally securing an export permit for the valuable artifact, a shipper packaged the pithos and the transport company trucked it from Jerusalem to the airport in Tel Aviv, and then air-freighted it to Memphis, Tennessee and finally to Minneapolis, where it was trucked to its destination at Northwestern. Sadly, the heavy, fragile jar emerged from the crate badly broken. Happily, this presented an opportunity for archaeology students studying under professor Boyd SeEVERS, an ABR staff member, to assist in a second restoration of the ancient pithos.



Archaeology students assisted in the reconstruction. Clockwise from below: Arianna Winslow, Chad Ziemer, Hannah David and Matthew Bauman.





The Pithos' Second Restoration

To glue together the pieces of the pithos, we first found a source for polyester resin and liquid coloring normally used for stone repair. The work of gluing then proceeded in stages over several weeks. We would figure out which pieces needed to go together to assemble successive stages of the jar, then prepare and glue those, and let them dry overnight.

The resin was buff colored, so we added a few drops of brown and red-brown coloring to each batch to get it close to the color of the pot. Then we added and mixed in 3% hardener, after which we had just five minutes to work. Generally we could glue four or five joints at a time, so we made sure we had all the needed pieces ready for assembly. We spread the resin on the joints with a popsicle stick and then held them still until the resin hardened. Since we didn't have enough hands to hold all the joints, we also used a pan of sand to hold some pairs of glued pieces.

Gradually the jar took shape, although getting the right angles and fit was not always easy or even possible. We had to re-break some joints and modify certain pieces to get the best fit. Eventually the structure was complete, though a few holes and substantial cracks inevitably remained.

Plastering

The final step in restoration was plastering. We had to locate and purchase a particular, hard type of plaster as well as several shades of powdered coloring. The plaster, coloring, and water all needed to be weighed, mixed, and then applied within a limited amount of time.

For each batch, we weighed out precise amounts of white plaster powder and four colorings (three red, one yellow). We mixed these dry in a cup, and weighed into a separate cup a precise amount of water. We then mixed the powder and water together, waited for it to begin to thicken, and then had about fifteen minutes to work before it hardened.

One person applied the plaster with a small spatula to fill in the holes and larger cracks. The other followed with a wet sponge to wipe away the excess plaster, making sure that none remained on the original pottery. The sponge needed frequent rinsing in water. The work continued until each batch of plaster was used up or became too hard to use. Different teams repeated



Most ancient pottery forms have rounded bottoms which makes the pot stronger, less likely to break.

Round bottom cooking pots could be set into hot coals or stones which were arranged around them.

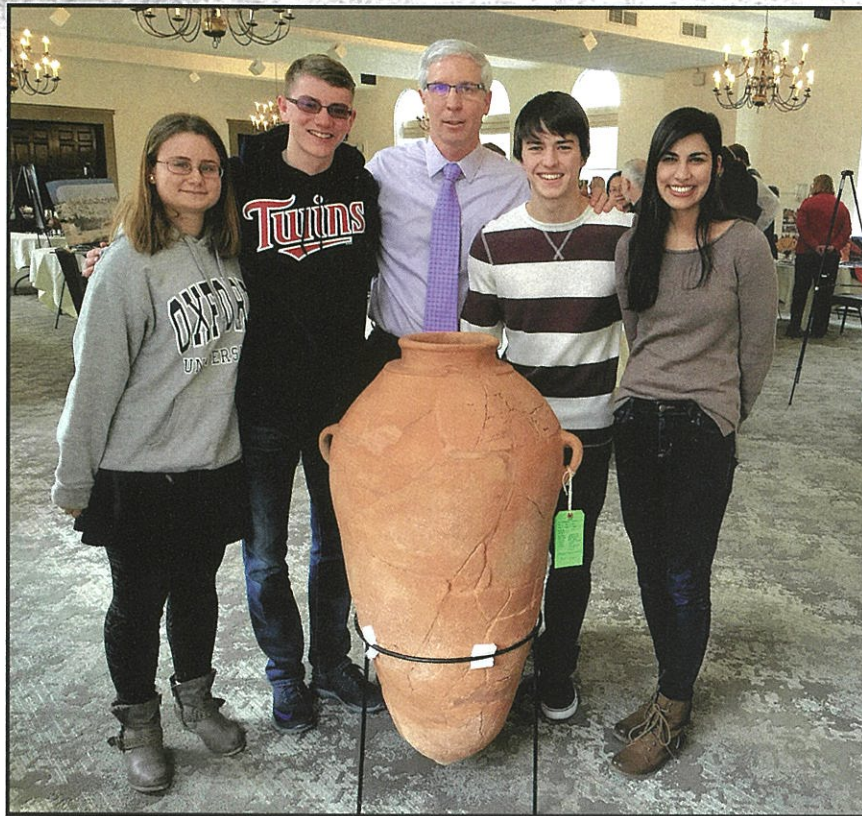
Storage jars were usually leaned against the wall or laid on the floor. Some were set into holes. The KeM pithoi was set 18" into the floor of it's home.

Most Israelite settlements did not have a cistern or well for storing water which suggests inhabitants fetched water in smaller containers from nearby streams and stored them in the larger pithoi.

Pithoi found in ruins that were destroyed by fire in antiquity have sometimes contained charred grain. Jars could also be used to store oil and wine.

Earthenware jars were sometimes used to hold corpses. To read Dr. Bryant Wood's article on the burial jar discovered in 2009 at Khirbet el-Maqtir, go to: www.biblearchaeology.org and search "infant burial jar."

the process over several days until the pithos looked whole and relatively intact. And finally it was done! The pithos was complete once again.

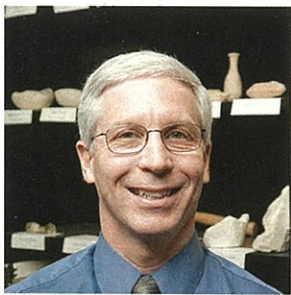


The Restoration Team: Arianna Winslow, Matthew Bauman, Dr. Boyd Seevers, Chad Ziemer, Hannah David.

What Happens Now?

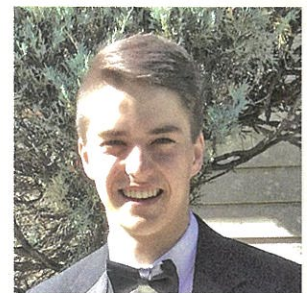
Now that this pithos is whole once again, what will happen to it? First of all, by Israeli law, it belongs to the State of Israel. The current permit to borrow it is valid for one year, and that will almost certainly be renewed. The original plan was to take the pithos to different places in the US to help promote ABR's digs, but the pot's fragile condition makes this highly risky. Eventually it will need to be returned to Israel.

ABR's pithos is a wonderful artifact from the biblical world, made by Israelites 3,200 years ago as they were settling into life in their new homeland. It is a blessing to ABR and to the people involved in its discovery and double restoration. A piece of biblical history is now at home in the USA, though time will tell how long that remains the case. The Pithos is currently on display as part of the exhibit "Joshua, Judges, and Jesus: The Artifacts of Khirbet el-Maqatir" at the University of Northwestern—St. Paul.



Dr. Boyd Seevers, PhD is Professor of Old Testament at the University of Northwestern – St. Paul, MN. He has authored three books, including *Warfare in the Old Testament* (Kregel, 2013). Seevers has excavated at Beth Saida, Tiberias, Har Tuv, and serves with ABR at Shiloh and as square supervisor and publisher of the Iron Age I remains at Khirbet el-Maqatir.

Chad Ziemer is a sophomore at University of St. Thomas in St. Paul, MN majoring in Criminal Justice and BA Music. He studied OT and NT Archaeology with Dr. Seevers at the University of Northwestern, St. Paul, MN. He is currently on scholarship through Air Force ROTC at St. Thomas and will be commissioned as a Second Lieutenant in the United States Air Force upon graduation.



Matthew Bauman is a senior at the University of Northwestern—St. Paul, MN double majoring in History and Social Studies Education. He studied OT and NT archaeology with Dr. Seevers as a freshman. He is President of the UNW Student Government and student manager of the UNW baseball team. After graduation he plans to become a history teacher.