

LET THE

ARMSTRONG INSTITUTE OF BIBLICAL ARCHAEOLOGY

*The magazine of the*

# STONES SPEAK



MAY-JUNE 2022

# SHILOH

Israel's First Capital

**An Objective Look at Radiocarbon Dating**

**Interview: Dr. Scott Stripling**

# LET THE STONES SPEAK

MAY-JUNE 2022 | VOL. 1, NO. 3 | CIRCULATION: 2,109

## FROM THE EDITOR

**Remembering Ancient Shiloh** 1

**An Objective Look at Radiocarbon Dating** 5

**The Story of Ancient Shiloh** 12

## INFOGRAPHIC

**Behold: Ancient Shiloh** 14

**Interview: Dr. Scott Stripling** 20

**New Discovery: Jerusalem Elites Were Imbibing  
on Vanilla-Laced Wine Before City's Fall** 26

**Meet Avital—The Mazar You  
Might Not Have Heard About** 28

# Remem

**BELOW** ABR team excavates the northern area of Tel Shiloh.  
Courtesy of ABR. Photo Michael Luddeni

**COVER** Top view of the northern city wall at Tel Shiloh  
during 2019 excavation season led by Dr. Scott Stripling.  
Courtesy of ABR, Photo Greg Gulbrandsen.



# bringing Ancient



FROM THE EDITOR | GERALD FLURRY

# Shiloh

Archaeologists are uncovering biblical Shiloh and bringing to life some of the Bible's greatest history.

**O**VER THE YEARS, ARCHAEOLOGISTS, INCLUDING Prof. Israel Finkelstein, Dr. Scott Stripling and others, have conducted a number of important excavations at ancient Shiloh. These excavations have uncovered numerous ruins and artifacts that support much of the history of Shiloh recorded in the Bible.

Discoveries such as a ceramic pomegranate (a fruit associated with the tabernacle, as well as priestly garments), thousands of animal bones related to the sacrificial service at the tabernacle, and a trio of rare altar horns are most likely dated to the time period when the tabernacle was in Shiloh.

Dr. Stripling has also partially uncovered a large building or platform. This edifice has remarkably similar dimensions to the tabernacle, it is dated to the same period as the tabernacle, and it is oriented east to west, just as the tabernacle was. In June, Mr. Stripling will begin the next phase of his Shiloh excavation and further excavate this large platform. Be sure to keep abreast of Dr. Stripling's work: He might be on the cusp of uncovering something truly sensational!



As these scientists resurrect the archaeological history of ancient Shiloh, it is a good time to also remember the biblical history of this important city. The history of Shiloh contains a lot of calamity and despair. But it also contains a lot of hope—much more than most people know. In fact, some of the greatest messages God has ever inspired were delivered to people in Shiloh!

## Israel's Spiritual Headquarters

Shiloh is situated 43 kilometers north of Jerusalem. It is spoken about several times in the books of Joshua and Judges. After the Israelites conquered the Promised Land and divided the territory according to the tribes, Shiloh became Israel's capital and the location of the tabernacle and the ark of the covenant.

The ark symbolized God's presence in Israel. Inside it were three objects: the two tables of stone with the Ten Commandments; Aaron's rod, symbolizing the government to apply, implement and enforce the Ten Commandments; and the golden pot of manna, representing spiritual food from God. All three items were crucial to Israel's religion.

Because it hosted the ark of the covenant, Shiloh was also the religious and spiritual headquarters of the nation. *Unger's Bible Dictionary* calls it "the site of Israel's early sanctuary in the time of the judges," and says, "It was the focal point of Israel's tribal organization before the establishment of the kingdom."

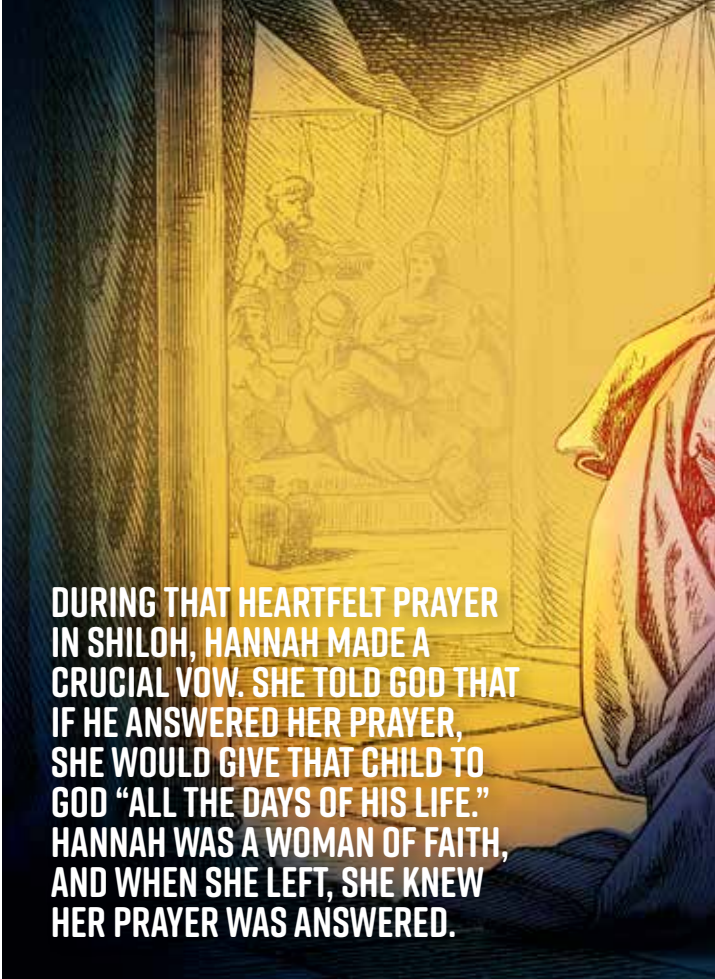
The "time of the judges" occurred after Joshua and the elders who served under him died. The book of Judges starts out with Israel being strong and courageous. But conditions deteriorated quickly: The nation got away from God's law and descended into terrible idolatry and other sins. What followed was the bloodiest period in Israel's history.

## Compromising With the Law

Judges 1:19 gives the first sign of trouble. It says that Judah "could not drive out the inhabitants of the valley, because they had chariots of iron." This shows a certain faithlessness. If they had relied on God, no weapons of the enemy would have stopped them.

In verse 21, we read, "And the children of Benjamin did not drive out the Jebusites that inhabited Jerusalem; but the Jebusites dwelt with the children of Benjamin in Jerusalem, unto this day." That was a serious mistake. When David came along some years later, the Jebusites were still there creating problems. But David handled the situation very differently (2 Samuel 5).

Israel's behavior during the period of the judges shows that it is very difficult for human beings to simply do as God commands. Humans lack faith and tend to reason for themselves how things should be handled.



**DURING THAT HEARTFELT PRAYER IN SHILOH, HANNAH MADE A CRUCIAL VOW. SHE TOLD GOD THAT IF HE ANSWERED HER PRAYER, SHE WOULD GIVE THAT CHILD TO GOD "ALL THE DAYS OF HIS LIFE." HANNAH WAS A WOMAN OF FAITH, AND WHEN SHE LEFT, SHE KNEW HER PRAYER WAS ANSWERED.**

During that awful period, there were a few good judges, like Jephthah and Samson. Yet even they had major sins.

God used the judge Gideon in a powerful way (Judges 6-8). That is a particularly interesting story because Gideon was such a coward. Through Gideon, we see that God works with the lowly of the world and turns them into courageous warriors.

Another notable judgeship was that of Deborah (Judges 4). She was a prophetess, and the Israelites could see that God was using her and revealing truths to her (verses 4-5). God wanted to use Barak to deliver Israel. Deborah gave him God's instructions on how to do so. But Barak was so weak that he wouldn't do it unless Deborah went with him and held him by the hand! (verse 8). Deborah chided him for his lack of manliness (verse 9). Israel had 10,000 soldiers, yet here was a woman running everything, and she was apparently the only one capable of doing it!

After God gave Israel the victory in this battle, Deborah and Barak sang a victory song. It is beautiful poetry describing God's power!

The overarching point of the book of Judges is repeated for emphasis: "In those days there was no king in Israel; every man did that which was right in his own eyes" (Judges 17:6; 21:25; see also Judges 18:1). This history vividly shows the terrible results of such lawlessness.



When God's government isn't in place and when His law is being ignored—when everyone is doing whatever is right in their own eyes—you have miserable anarchy.

The most wonderful thing about this biblical history is to see how God set Israel back on track. The priesthood was degenerate, but God determined to make some changes. The government was in disarray, but God was going to establish a king. It's remarkable how God began the process of turning things around anciently. It started with one family—and it all *centered around Shiloh*.

## The Solution

The transition from the period of the judges to the period of the united monarchy is recorded in 1 Samuel. In 1 Samuel 1, we are introduced to a man named Elkanah, who had two wives. Each year, Elkanah would “sacrifice unto the Lord of hosts *in Shiloh*” (verse 3). Verse 5 records that God had shut the womb of one of Elkanah's wives, Hannah. To a woman who passionately desires children, that is a real crisis. It certainly was to Hannah. But God did it for a purpose, and this trial motivated her far more than it would most women.

Hannah *cried* about this affliction. “And Elkanah her husband said unto her: ‘Hannah, why weepest thou? and why eatest thou not? and why is thy heart grieved? am not I better to thee than ten sons?’” (verse 8). Elkanah

realized that the foundation of a family is the husband and the wife. Still, Hannah was grieved because she didn't have children; although it appears she had a wonderful husband.

Hannah went to the tabernacle in Shiloh and prayed there, imploring God to give her a man child. During that heartfelt prayer in Shiloh, Hannah made a crucial vow. She told God that if He answered her prayer, she would give that child to God “all the days of his life” (verses 9-11). Hannah was a woman of faith, and when she left, she knew that her prayer was answered (verse 18).

When her son was born, Hannah called him Samuel, which means *heard of God*. God really did respond to Hannah. It's amazing what He did for this woman. Hannah had to be quite a mom because she delivered on that vow. She looked after Samuel diligently and was determined that when the time came to bring him back to the tabernacle in

Shiloh, she would leave him there—“that he may appear before the Lord, AND THERE ABIDE FOR EVER” (verse 22). That is exactly what Hannah did—Samuel was just a toddler when his mother kept her promise to God and left him with Eli the priest in Shiloh (verses 26-28). What a mother!

## Hannah's Prophecy

*Right there in Shiloh*, Hannah delivered a prayerful psalm, which is one of the most profound prophecies in the Bible. You can read it in 1 Samuel 2:1-10. “The Lord killeth, and maketh alive; He bringeth down to the grave, and bringeth up” (verse 6). Hannah knew that God has power over life.

She continued: “He raiseth up the poor out of the dust, He lifteth up the needy from the dung-hill, To make them sit with princes, And inherit the throne of glory; For the pillars of the earth are the Lord's, And He hath set the world upon them” (verse 8). Here, Hannah is prophesying about the Messiah, who will come and set up his government on Earth.

The end of verse 10 reads, “The Lord will judge the ends of the earth; And He will give strength unto HIS KING, And exalt the horn of His anointed.” What was Hannah talking about here? This was a direct, specific prophecy about King David!

David hadn't come on the scene yet. But God began revealing His plan for King David, and for the throne and house of David, right here in Shiloh many decades before David was even born. As it happened, Hannah's son, the toddler who became the great Prophet Samuel, ended up *anointing David as king!*

## A Faithful Priest

Hannah prophesied all this in Shiloh right at the end of the period of the judges. Hannah lived through a disastrous time. Yet in the middle of all this tragedy, *one woman* came on the scene and began to change the course of history in Israel. What a lady!

During this time, a man of God came and delivered God's judgment to Eli. In that message, God said this: "AND I WILL RAISE ME UP A FAITHFUL PRIEST, that shall do according to that which is in My heart and in My mind; and I will build him a sure house; and he shall walk before Mine anointed for ever" (1 Samuel 2:35).

This is a prophecy about Zadok, the warrior priest who remained loyal to King David. When David's son Adonijah rebelled, Abiathar, the chief priest, joined that revolution. Zadok, however, remained faithful. He stayed loyal to David's throne throughout David's life!

That occurred about 100 years after Eli died; yet this man of God prophesied about the priest who would replace Abiathar. God looked beyond Abiathar and his rebellion all the way to Zadok, and He said, *I will raise me up a faithful priest—one who will be loyal to David and that throne forever!*

This is incredible history, and so much of it happened in Shiloh, which is now being uncovered stone by stone!

## Destruction at Shiloh

Samuel was raised in Shiloh and educated in the tabernacle. While Samuel was in Shiloh, God appeared to him twice (1 Samuel 3:10, 21). This is one reason these archaeological excavations in Shiloh are so inspiring: Dr. Stripling is uncovering the place where young Samuel lived and worked!

In 1 Samuel 4, the Philistines went on the attack, and the Israelites—without consulting God—decided to grab the ark from Shiloh and bring it with them into battle, as if that physical object would save them. In the ensuing battle, the Philistines seized the ark. *Unger's Bible Dictionary* says, "Shiloh was destroyed ... presumably at the hands of the Philistines when the ark was carried away (1 Samuel 4)."

Evidence of this event has been found in Shiloh. Archaeologists have uncovered a burn layer—evidence that Shiloh was destroyed—that was dated to this time period.

Shiloh was desolate, and the ark was gone. This was deeply depressing to Samuel. "The overthrow of Shiloh marked a turning point in the history of that period," *Unger's* continues. It was a watershed event for Israel. And after the Philistines brought the ark back, it was never set up again in Shiloh. Shiloh continued to be inhabited, but was never again the seat of Israel's government.

## God Is King!

After the period of the judges, when everyone was doing things their own way, God used Samuel to start building a headquarters work that everybody in Israel would focus on. The Bible says Samuel built a college. At this school, he educated many of Israel's leaders and institutionalized the truth of God (1 Samuel 7:16; 10:5; 19:18-20).

Sadly, Samuel's *own* sons didn't turn out well (1 Samuel 8:1-3). The people of Israel held this against Samuel, and it soured their attitude against God's government. They told Samuel that they wanted to be ruled by a king rather than by God through His prophet.

The people felt justified in asking Samuel to step aside and wanting a king to lead them. But God, though He was upset at what Samuel's sons were doing, disagreed with the people. He told Samuel, "[T]hey have not rejected thee, but they have rejected Me, that I should not be king over them" (verse 7). That was the reality! The people didn't want the law and government of God!

This was Israel's **CARDINAL SIN!** *They rejected God as their King!*

Israel rejected God and followed Saul—a physically impressive individual to whom they could look instead of God—into the depths of ignominy.

After Saul, God made David Israel's king—and in that moment, the great prophecy made by Hannah in Shiloh was fulfilled. Together, God and David established Israel as a regional powerhouse. God gave "strength unto His KING, And exalt[ed] the HORN of His anointed" (1 Samuel 2:10).

Imagine how special it would have been for Samuel to anoint David king! In that moment, the prophecy spoken by his mother was fulfilled: God used Samuel to anoint David king and begin this **ETERNAL ROYAL DYNASTY**. And it all began in the city of Shiloh!

When you understand this history, you can really appreciate and understand why the archaeological excavations now underway in Shiloh are so important. At Shiloh, Prof. Finkelstein, Dr. Stripling and all the others who have dug this tel are not just unearthing old animal bones, decayed walls or paltry clay artifacts: They are unearthing some of the most powerful biblical history you could ever read! ■

# An objective look at RADIOCARBON DATING

Carbon dating can be an extremely helpful archaeological tool. But is it the reliable, objective silver-bullet solution it is often portrayed to be?

BY ARMSTRONG INSTITUTE STAFF



**I**N A 2021 INTERVIEW WITH THE ALBRIGHT INSTITUTE, Prof. Israel Finkelstein extolled the merits of radiocarbon dating in archaeology. “We need to turn to radiocarbon, to carbon-14 dating,” he said. Using carbon dating allows us to “disconnect the discussion from one’s understanding of the biblical verses because radiocarbon is not influenced by the Bible.”

Professor Finkelstein is well known as a leading advocate of the “low chronology” dating of the United Monarchy of Israel. According to this theory, the monumental Iron IIA structures traditionally dated to the reigns of David and Solomon in the early 10th century B.C.E. were actually constructed almost a century later—sometime during the ninth century B.C.E. Finkelstein has long claimed his low-chronology position can be proved by carbon dating.

But there’s a problem: Professor Finkelstein’s opponents on this issue—those who advocate high chronology (the traditional dating of the structures)—also use radiocarbon dating to support *their* argument. In fact, radiocarbon dating has been widely used, especially over the last decade, as evidence *supporting* the traditional dating of the United Monarchy chronology.

The late Dr. Eilat Mazar, for example, used carbon

dating in her excavations in the City of David to identify King David’s palace. (Dr. Mazar may have been the first to use the technology in a Jerusalem excavation.) Her colleague, Hebrew University professor Yosef Garfinkel, is also a proponent of radiocarbon dating and has utilized the technology to identify various impressive “Davidic”-era sites. According to Prof. William Dever, carbon dating—rather than proving Finkelstein’s theory—actually delivers a “deathblow” to the low-chronology theory.

What a conundrum! How can all sides of the spectrum of the debate use radiocarbon dating to prove entirely different positions on the dating of the United Monarchy?

One answer points to a crucial yet widely overlooked reality: Radiocarbon dating is *not* the incredibly accurate, entirely independent, purely scientific and objective means of dating it is often portrayed to be!

There’s no doubt that radiocarbon dating can be a fantastic tool in archaeology. It’s one we advocate as a means of corroborating dates and have employed in our own archaeological work with Dr. Mazar. And it’s a tool we will continue to use and advocate. But both the science and the practice of carbon dating are *far* from perfect. This means carbon dating is *not* the standalone,

silver-bullet solution it is often portrayed to be. The truth is, radiocarbon dating is inherently based on numerous assumptions and some imperfect science and math. Beyond that, like all data, it is vulnerable to being misinterpreted, misconstrued and mishandled.

Let's take an objective look at radiocarbon dating.

## A Chemistry Lesson

First, what *is* radiocarbon dating? Radiocarbon dating, also known as carbon dating, carbon-14 dating, C-14 or  $^{14}\text{C}$ , was invented by American physical chemist Willard Libby in the 1940s. This form of dating is just one of a broad range of scientific dating methods known collectively as *radiometric* (or *radioisotope*) dating. Carbon dating is typically used to determine the age of “younger” material—that is, organic material up to 50,000 years old. Among the various forms of radiometric dating (e.g. uranium dating, samarium-neodymium dating), *radiocarbon* dating is widely considered the most reliable.

Put simply, carbon dating determines the age of material by measuring the levels of carbon found in it. Carbon dating can be used to date only *organic* matter—such as bones, seeds, grains, natural fabrics or charcoal. Inert materials, such as stones or clay objects, cannot be carbon-dated.

Organic material contains different types of carbon: carbon-12 (C-12) and carbon-14 (C-14). In nature, the majority of carbon atoms have a nucleus containing six protons and six neutrons: the stable carbon-12. But in some carbon atoms, solar radiation causes the atom to acquire two extra neutrons. These radioactive isotopes are called carbon-14.

The number of C-14 atoms on Earth is tiny compared to the number of C-12 atoms. About one out of every trillion carbon atoms is a C-14 atom. All living organisms, including plants, animals and humans, contain these C-14 atoms, which are absorbed into the living organism with carbon dioxide from the atmosphere. As long as an organism is living, the C-14 ratio in that

living *organism* should equate to the C-14 ratio in the *atmosphere*. When the organism *dies*, however, carbon is no longer being absorbed. And while the stable C-12 in the organism remains the same, the C-14 isotopes begin to *decay*. The steady, constant decay of the radioactive C-14 presents scientists with the potential opportunity to measure time.

This radioactive-decay process is known as a “half-life.” The technical website *Labmate Online* offers a good definition of this term: “Half-life refers to the amount of time it takes for an object to lose exactly half of the amount of carbon (or other element) stored in it .... The half-life of carbon is  $5,730 \pm 40$  years, which means that it will take this amount of time for it to reduce from 100g of carbon to 50g—exactly half its original amount.

“By testing the amount of carbon stored in an object, and comparing it to the original amount of carbon *believed* to have been stored at the time of death, scientists can estimate its age.”

Sounds straightforward, doesn't it? But it isn't. In order for scientists to calculate how long an organism has been dead, they need two crucial bits of information. First, they need to know how much C-14 is in the dead organism. This can be readily measured by using what is known as a mass spectrometer. Second, the scientist must know how much C-14 was in the organism when it was alive. This is where it gets difficult—*really* difficult.

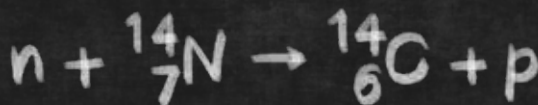
Scientists thousands of years ago, of course, weren't measuring and documenting the C-14 ratio of organisms when they died. The hard data isn't available. So how do scientists determine this crucial measurement?

## Making Assumptions

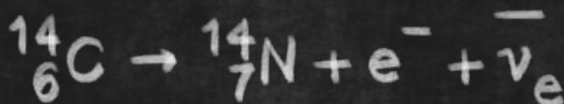
Lacking the true figures, scientists make a series of assumptions.

The science of radiocarbon dating is built on a theory called uniformitarianism, or doctrine of uniformity. This is the theory that throughout history, changes on Earth have happened in a generally slow, consistent, *uniform* manner. This theory postulates that the Earth's processes “acted in the same manner and with essentially the same intensity in the past as they do in the present” (*Encyclopedia Britannica*). This theory stands in contrast to the theory of catastrophism (the biblical model), which suggests that Earth's history has been shaped by cataclysmic changes—events that could, for example, radically alter atmospheric carbon ratios.

To answer the fundamental



The nuclear reaction that creates carbon-14



The equation for the decay of carbon-14



question of how much C-14 was in an ancient organism at the moment it died, scientists, relying on the theory of uniformitarianism, assume that the amount of C-14 in the atmosphere has remained generally *constant* throughout history.

This relies on the assumption that the constant level of atmospheric C-14 reached its “equilibrium” early on in Earth’s history. *Labmate* explains: “By measuring the rate of production and of decay ... scientists were able to estimate that carbon in the atmosphere would ... [reach] equilibrium in 30,000–50,000 years. Since the universe

History of Radiocarbon Dating II” (*Journal of Research of the National Institute of Standards and Technology*, April 1, 2004). This sample, which relates specifically to the year 1950, would serve as a “standard” modern ratio to compare historic C-12 to C-14 ratios against. “This value is defined as ‘modern carbon’ referenced to A.D. 1950. Radiocarbon measurements are compared to this modern carbon value ... using the exponential decay relation and the ‘Libby half-life,’ 5,568 a. The ages are expressed in years before present (B.P.), where ‘present’ is defined as A.D. 1950” (*ibid*).

**Here we begin to see that not only are several assumptions built into the science of radiocarbon dating—the very starting data point itself, the core 1950 sample, is believed to not be representative of “natural levels” of carbon—thus prompting data adjustment from the very outset.**

is estimated to be millions of years old, it was assumed that this equilibrium had already been reached.”

These assumptions, built into the science of radiocarbon dating from its inception, are fraught with problems. For example, scientists discovered in the 1960s that the C-14 growth rate was actually significantly higher (by almost one third) than the decay rate. “This indicated that equilibrium *had not* in fact been reached, throwing off scientists’ assumptions about carbon dating” (*ibid*).

That’s not all. Not only is there *not* an observable equilibrium of carbon-14 in the atmosphere, scientists have also discovered that the production and decay rates of carbon-14 have fluctuated over time. (This truth was actually identified by Willard Libby, but since his findings contradicted the perceived uniformitarian model, the discrepancies were dismissed as “experimental error.”)

How do you estimate historical C-14 levels if they are constantly fluctuating?

**B.P.—the New B.C.**

Logically, what is needed first is a clear starting point to compare past ratios against—a fixed, “modern” ratio of carbon-12 to carbon-14. This starting data point was determined in the late 1950s.

A “large quantity of contemporary oxalic acid dihydrate was prepared” and sampled as a reference value for atmospheric C-12 to C-14, chemistry expert Lloyd A. Currie explained in “The Remarkable Metrological

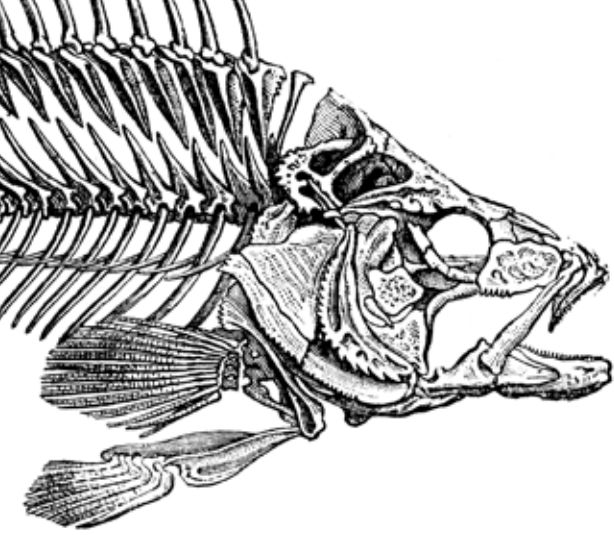
For example, a radiocarbon date of 3000 B.P. is technically 3,000 years prior to C.E. 1950, which is 1051 B.C.E. (taking into account there is no year zero).

By establishing the carbon ratios in 1950, scientists created a benchmark against which they could measure historical levels. It’s a good idea, but not perfect. And once again, certain assumptions were required to settle on this all-important benchmark number, calling into question its integrity. For example, in this 1950 sample, C-14 “concentration was about 5 percent above what was believed to be the natural level, so the standard for radiocarbon dating was defined as 0.95 times the <sup>14</sup>C concentration of this material,” Currie wrote (emphasis added throughout).

Scientists also discovered that even the original C-14 half-life calculation of 5,568 years is “off.” The now-determined value is 5,730 years (again, ± 40 years), or nearly two centuries more than the traditional figure. Even though it is known to be incorrect, scientists today still use the “Libby half-life” figure of 5,568 years. Why? So they can maintain consistency with early radiocarbon figures; the final figures are then calibrated to compensate for this miscalculation.

All this math and chemistry can be hard to follow. The point is this: The scientific premise of radiocarbon dating is not built entirely on hard facts or absolutes. It is built, at least partially, on educated guesses and assumptions.

There are other variables that also need to be considered and factored in.



**Carbon ingested and absorbed by marine organisms is typically much older than that consumed by terrestrial organisms. This is known to cause deviances in carbon dating of hundreds or potentially thousands of years.**

### Other Variables

Perhaps the most famous factor impacting radiocarbon dating is the *atmospheric nuclear weapons testing* that has taken place over the last 80 years. Radioactive isotopes from these tests have “infected,” at least on some level, every living organism on the planet, causing a *rise* in carbon-14 levels (and resulting in a generally *younger-than-expected* face-value dating).

This is one benefit of using the 1950 data set as the standard—because it antedates much of this nuclear

contamination (but not all). When it comes to man’s impact on C-14 levels, nuclear testing is only the tip of the iceberg. In the Industrial Era, for example, the burning of fossil fuels released enormous quantities of C-14-depleted carbon dioxide into the atmosphere.

And it’s not just modern technology that affects the atmospheric carbon balance. As noted, the ratio has never been constant, and neither has the decay rate. This is because all sorts of natural phenomena influence

## **A Study in Point**

Bible-believers are occasionally criticized for undermining trust in carbon dating. Critics claim that biblical archaeologists dislike radiocarbon dating because it undermines the traditional dating of biblical events (such as the low-chronology debate regarding the United Monarchy).

In fact, carbon dating performed over the last 10 years or so has actually served to corroborate the traditional dating of many events. To learn more about this, you can study the work of Hebrew University professor Yosef Garfinkel and esteemed archaeologist and historian William Dever, among others.

But it’s not rare for Bible *critics* to attempt to use carbon dating to cast doubts on dates consistent with the Bible and recalibrate the dates to be younger. In 2018, for example, Cornell

University released a provocative paper titled “Fluctuating Radiocarbon Offsets Observed in the Southern Levant and Implications for Archaeological Chronological Debates.”

Using data collected from tree rings in the Southern Levant from the past 400 years, the Cornell study argues that the standard calibration curve for carbon-14 is off by about 20 years, and that carbon samples taken in the Holy Land should be calibrated by a separate system. From their data set, they deduce that the dates associated with the carbon samples in this region are, on average, about 20 years younger than previously estimated.

Twenty years doesn’t seem to be a lot; it still puts various “Davidic” samples (such as at Khirbet Qeiyafa) inside the dates for the United Monarchy (though beyond

the chronological extent of David’s existence). Still, the contention that all carbon samples in the area have been (and will be) dated to be 20 years too old further muddies the waters when it comes to using carbon samples to accurately date discoveries.

Reading through the Cornell paper, the bias of the researchers is obvious. Their conclusions are based upon an extremely limited data set, yet they hastily extrapolate the findings to apply to biblical times—and not just any time, but squarely the time period relating to the United Monarchy.

For example, the study itself was conducted on tree rings that go back only 400 years. In that time period, they do see variations that indicate the traditional dates were off by an average of 19 years—but in many cases, they were off by *only*

carbon levels, thereby undermining the assumptions used in radiocarbon dating.

Cosmic rays, as well as solar flares and sunspots, directly affect the amount of C-14 in the atmosphere. So does our solar system's passage through the Milky Way's magnetic clouds. Fluctuations in the Earth's own magnetic field play a role in C-14 levels, including phenomena such as geomagnetic reversals and polarity excursions (either global or localized). Even simple changes in the *seasons* affect C-14 decay rates: Depending on what time of year an organism died, this may affect its dating by *decades*.

The list goes on. Volcanoes emit C-14-depleted CO<sub>2</sub> into the atmosphere, contributing to an older-than-reality dating of affected organic material, particularly in volcanic regions (like Santorini). Glaciation is another variable; carbon stored in glaciers is depleted in C-14, giving the organic material an older-than-actual age.

Carbon-14 rates can even vary depending on which part of the planet the sample is taken from. C-14 levels are typically more depleted in the southern hemisphere, resulting in artificially older ages. Related to this is the "island effect." Scientists postulate that the carbon-dating of material from islands, which are surrounded by

masses of water, result in older-than-actual dates. Again, all of these variables must be calibrated into radiocarbon calculations and models.

The issues related especially to water and water-related objects only compound. Chief among them is the "marine reservoir effect." Carbon ingested and absorbed by marine organisms is typically much older than that consumed by terrestrial organisms. This is known to cause deviances in carbon dating of hundreds or potentially *thousands* of years. Water temperature and depth also play a role in carbon absorption. Then there's the "hard water effect." The carbon content in rivers and groundwater is impacted by the type of rocks the water flows over. As an example, mussels that are still alive have been carbon-dated to *over 2,000 years old* due to their exposure to water depleted of carbon-14 via contact with limestone and humus soil.

This might seem peripheral to the field of terrestrial archaeology. Yet it does present a real-world issue, particularly as it relates to terrestrial organisms that consume marine animals—including humans. One famous example is that of a Viking burial in Derbyshire, England. Coins at the site, among other contextual material, clearly dated it to the ninth century C.E.

as much as five years. Furthermore, they deduce that possibly warmer weather tended to make the samples appear older than colder weather did. Based on that, they conclude that since it may have been warmer in the Southern Levant from 1200 to 600 B.C.E., we should assume that the dates for the biblical period are likely younger than previously thought.

Consider the following sentence (taken from the study), and notice the remarkable number of qualifying words employed by the authors: "Where such calibration time series are *not yet available* (namely, before A.D. 1610 for the Southern Levant case at present), our data set better *indicates* the circumstances under which a *likely potential* range of error *may apply* for earlier periods—*assuming* that similar conditions and

processes apply in earlier periods and *accepting some possible variations*—rather than offering any specific average correction factor" (emphasis added throughout).

To their credit, these researchers admit their methodology and analysis is far from perfect.

In this next sentence, the researchers note the ambiguity as to whether or not it was warmer during the biblical period, as they suggest: "Available paleoclimatic data for the Southern Levant for the earlier Iron Age are *inconclusive*, but, after *indications* of cooler and arid conditions in the period around the close of the Late Bronze Age through initial Iron Age, there are *some (though not always consistent) suggestions* of wetter and/or warming conditions in the Eastern Mediterranean region."

By their own admission, there is a lot of guesswork and estimation. In spite of this, these researchers frame the whole report, including the title and abstract, around how the data might "potentially undermine" the traditional position in the chronological debate regarding David and Solomon. The press then takes it one step further and writes headlines like: "Cornell University professor shows how archaeologists' data could be skewed by decades—potentially disproving the narrative of David and Solomon's United Monarchy" (*Times of Israel*, June 7, 2018).

The reality is, the science and argumentation used to prove the traditional dates incorrect is very often more flawed than the science and argumentation used to determine the traditional dates! ■

Yet carbon-dating of human bones suggested they were *centuries* older. The riddle was finally solved in 2018, when scientists realized that the discrepancy was caused by the seafood-rich, C-14 depleted, diet of the Vikings—making the bones appear older.

## Calibration to the Rescue

Due to all these variables, raw radiocarbon data must be calibrated by scientists through outside means—other methods of establishing carbon levels through history (such as dendrochronology). This data is then used to construct a calibration curve, the model through which radiochronologists produce their dates. But even this can introduce its own bias and error.

One method of creating a calibration curve is through the carbon analysis of artifacts of known ages. Based on written testimonies and chronologies, carbon samples from sites of known ages can be tested and compared, and the results can then be calibrated and used for dating artifacts of unknown ages.

Following his invention of the science, Willard Libby originally attempted to use this method to check against the accuracy of his raw radiocarbon data. In his 1960 Nobel Prize acceptance lecture, Libby highlighted the immediate issue his team came up against: the

ambiguity of historical ages. “You read statements in books that such and such a society or archaeological site is 20,000 years old,” he said. “We learned rather abruptly that these numbers, these ancient ages, are not known accurately; in fact, it is about the time of the First Dynasty in Egypt [circa 3000 B.C.E.] that the first historical date of any real certainty has been established.” (Still, there remains much debate even about the dating of this period.)

Certain historical events are typically cited as being of known age. For example, relating to ancient Israel, we have the 732 B.C.E. invasion of Tiglath-Pileser, the 701 B.C.E. invasion of Sennacherib, and the 586 B.C.E. destruction of Jerusalem. The easily datable, often burned organic remains from such destruction levels can be used as an adjustment and calibration to radiocarbon dating (as can organic remains from sealed, historically datable tombs).

Yet even here, we have problems. Even among generally agreed-upon benchmarks, there is naturally doubt and debate. For example, based on the biblical text and other evidence, there is a significant position that Sennacherib’s invasion of Judah took place around 710 B.C.E. There is also debate about the exact year that Jerusalem fell. While the dates may not

# Dendrochronology

By either cutting a tree in half or boring out a core sample, tree rings may be counted—with each ring representing a year (or rather, a full season-cycle of growth), to determine the age of a tree. This is known as dendrochronology. Trees of different ages can then be sampled for carbon as a check against, and a calibration of, radiocarbon dates.

The oldest known tree is a bristlecone pine in California’s White Mountains, named Methuselah (after the oldest man in the Bible). This tree has about 4,850 tree rings—thus, it is conceivably 4,850 years old. Dendrochronologists have attempted to extend the age of trees far beyond the germination of the Methuselah tree. For example, they have lined up the tree rings of living

bristlecone pines with tree rings of dead bristlecone pines to construct a sort of “tree ring chronology” going back around 12,500 years. Dendrochronologists visually compare the appearance of growth rings to one another, trying to match living and dead trees. Through this comparative analysis of tree rings, dendrochronologists have been able to create a theoretically reliable “ring history.”

Still, cross-matching tree rings is incredibly complicated. Every tree grows a little differently, so visually cross-matching tree rings is actually quite subjective. Furthermore, tree-ring patterns are not unique, and even trees growing right next to one another do not exhibit identical growth patterns.

And contrary to popular belief, tree rings do not simply work on a year-for-year principle. Stresses on the tree, such as droughts, can result in *several* rings forming in a single year—or alternately, “missing” rings entirely. Further, mistakes are easily made in counting: The presence of a tree ring may be barely visible and easily missed, depending on the side

$$\Delta L(t) = \frac{L}{k_v \rho^{\frac{1}{3}}} \frac{d \left( M^{\frac{1}{3}}(t) \right)}{dt}$$

The dendrochronological equation for determining growth in tree rings

differ dramatically, they illustrate the problems with benchmarks. As such, archaeologists view historically calibrated carbon dates with an air of suspicion.

There is another, more common way of calibrating radiocarbon dates—a method also used in an attempt to extend the dating back into the realm of *prehistory*. This is dendrochronology, the science of dating according to tree rings (sidebar, page 10).

To this point, we have noted the complications with the methodology of radiocarbon dating. What about the sample material being tested?

### Problems in Datable Material

Again, carbon dating can only be used to date organic, living (or *once*-living) things. A typical example would be the discovery of a bone in a certain context. Let's assume that our dating method is perfect. Even if the science and methodology are flawless, dating the bone with any degree of certainty is still a major challenge.

Radiocarbon-dating the bone only tells us when the creature died. It does not reveal its age at death, or when exactly it was buried or, perhaps, *reburied*.

This is a real-world archaeological problem. Scavenging animals have a habit of picking up, transporting, burying and reburying bones. (Of course, even

of the tree that the bored sample is retrieved from.

If dendrochronologists cannot determine how the trees match up, what is the solution? They radiocarbon-date the growth rings to determine their approximate age. But what are radiocarbon-dating results verified against? Growth rings! This is, of course, circular reasoning. ■

$$\Delta I(t) = - \frac{c_1 e^{-a_1 t} + c_2 e^{-a_2 t}}{3k_v \rho^{\frac{1}{3}} (c_0 + c_1 e^{-a_1 t} + c_2 e^{-a_2 t})^{\frac{2}{3}}}$$

The formula for the changes in annual ring width

$$\delta^{13}\text{C} = \left( \frac{\left( \frac{^{13}\text{C}}{^{12}\text{C}} \right)_{\text{sample}}}{\left( \frac{^{13}\text{C}}{^{12}\text{C}} \right)_{\text{PDB}}} - 1 \right) \times 1000 \text{‰}$$

The formula for calculating isotopic fractionation in different plants. Carbon-13 is preferentially used, and from this carbon-14-to-carbon-12 levels can be derived.

humans have a habit of exhumation and reburial.) Because of these factors with bones, scientists prefer, whenever possible, to use seeds or other small organic deposits for dating.

But carbon-dating plant matter comes with its own headaches. This is because flora, though they feed off carbon dioxide, actually discriminate against C-14, absorbing *less* than animals (and thus giving off an older-than-actual date). Not only that, different plants selectively absorb different amounts of C-14. Thus, the ratios of carbon isotopes will not necessarily reflect existing atmospheric ratios while that plant is alive. This is known as “isotopic fractionation.” And this not only needs to be properly accounted for in terrestrial plants, it must also be accounted for in consumable *marine* plants.

What about wood remains? The problem with wood is that it can be used and reused over centuries. This means that wood samples, including charcoal remains—once considered radiocarbon-dating gold—are also not necessarily ideal. Another issue with wood is that it can be difficult to know which part of the tree the sample came from. If it came from deep inside the trunk, for example, it would be old. If it came from the outside, depending on the type of wood, it could potentially be hundreds of years younger. Scientists refer to this as the “old wood effect.”

There is also the issue of human error during the collection, storage and testing of organic samples. It is incredibly easy to contaminate a sample, either during excavating, packaging or handling. Even the slightest contact with paper or cotton wool, for example, can contaminate a sample with modern carbon. Depending on the age of the artifact, even a single-digit percentage of contamination can measurably throw off the result by decades or centuries.

It should be noted, too, that a single sample can be tested in different laboratories and produce different results, based on different standards and calibration. As such, it is standard practice to send samples to several different labs as a check on the reliability of the results.

**RADIOCARBON DATING** PAGE 25 ►



# The Story of ANCIENT SHILOH

Together archaeology and biblical history tell the remarkable story of ancient Shiloh.

BY JUDE FLURRY

“GO YE NOW UNTO MY PLACE WHICH WAS IN Shiloh,” God thunders in the book of Jeremiah, “where I caused My name to dwell at the first” (Jeremiah 7:12). Barring Jerusalem, is any city more important to ancient Israel’s history than Shiloh? Shiloh was the capital of Israel and the resting place of the tabernacle for over three centuries. In Genesis 49:10, the word “Shiloh” is used as a name for the Messiah—a name that likely meant “tranquil” or “peaceful” in the original Hebrew. However, Shiloh’s history has been anything but peaceful.

For millennia, the Hebrew Bible was our only resource for learning about this fascinating city. But over the past century, many archaeological finds have confirmed and enhanced our understanding of biblical Shiloh. Together, archaeology and biblical history reveal the remarkable story of one of the Bible’s most important cities.

## Early Canaanite History

Archaeological evidence suggests that Shiloh was founded sometime in the Middle Bronze Age IIB period (circa 1750–1650 B.C.E.). According to Prof. Israel Finkelstein, an archaeologist who excavated Shiloh in the early 1980s, Shiloh was likely burned and destroyed during the 16th century B.C.E. Since this was long before the Exodus, the assailants were likely Canaanites. By the time the Israelites arrived in Canaan in the 15th century (according to early Exodus chronology), Shiloh was most likely sparsely populated.

Though the Bible does not record Israel’s settlement of Shiloh, archaeology relates its former Canaanite origins to the words of Moses in Deuteronomy 6: “And it shall be, when the Lord thy God shall bring thee into the land which He swore unto thy fathers, to Abraham, to Isaac, and to Jacob, to give thee—great and goodly cities, *which thou didst not build*, and houses full of all good things, *which thou didst not fill ...*” (verses 10-11).

## Israel’s First Capital

According to the book of Joshua, the Israelites within their first years of entering the Promised Land assembled in Shiloh on at least six separate occasions. No other city is listed as a national assembly point. Furthermore, Joshua 18:1 says the “tent of meeting”



(the tabernacle) was set up in Shiloh. This points to its use as Israel's first capital city.

Archaeological evidence from Tel Shiloh indicates that the city was a religious center during the time of Joshua (early part of the Late Bronze Age, 1550–1200 B.C.E.). Archaeologists have found sacrificial animal bone deposits and cultic vessels dating to this time. While a few archaeologists, such as Prof. Finkelstein, interpret these finds as Canaanite, most agree they are evidence of notable religious activity in Shiloh. This indicates the tabernacle once rested there, as the Bible claims.

Besides archaeology, other factors suggest Shiloh was an excellent location for a capital city. It was located near a fertile valley capable of growing enough food for the

city's inhabitants. The city and surrounding farmlands had access to dependable water sources. In addition, the mound (or *tel*) on which the city was built had steep slopes on three sides, making it easier to defend.

Perhaps most importantly, Shiloh had the right acoustic conditions. Mass communication in the Bronze Age was not easy. There were no microphones or speakers, no Twitter or Facebook. Without digital amplification, Israel's leaders had to rely on vocal projection and the natural acoustic properties of their surroundings. In the 1970s, sound engineer Mark Myles conducted acoustic tests at Shiloh. According to his results, the ambient noise level of Shiloh was far below the ideal noise requirement of the best concert hall. Myles said it was the quietest spot he had ever measured—quiet enough to hear a human voice clearly at a distance of over 500 meters. Something about the landscape and surroundings at Shiloh makes it possible for sound to travel extraordinarily far.

The Bible records instances of a single speaker (such as Joshua) addressing thousands of people in Shiloh (Joshua 18:8; 22:6). This kind of mass communication would only have been possible in a few acoustically appropriate locations. Shiloh was one of those locations. That mass communication was possible in Shiloh adds credibility to the biblical narrative.

## Shiloh in the Period of the Judges

The period of the judges lasted roughly 300 years, from the early-14th to the early-11th centuries B.C.E. (Judges 11:26; 1 Kings 6:1). It was the darkest, bloodiest time in Israel's history. Shiloh is only mentioned four times in the book of Judges, but these few references are enough to prove that a few people still looked to it as the capital of Israel. Judges 18:31 says that the “house of God,” or tabernacle, was still in Shiloh. Israel still used it as an assembly point (Judges 21:12), and an annual feast—perhaps the “Feast of Tabernacles” commanded in Leviticus 23—was kept there (Judges 21:21).

Archaeology corroborates and adds to these details. In his early 1980s excavations, Prof. Finkelstein discovered huge pottery shards and animal bones dating to the Late Bronze Age (1550–1200 B.C.E.) in the ruins of Shiloh's walls. He interpreted these findings as evidence of a tiny Late Bronze Age (judges period) religious center in Shiloh:

“[O]n the summit of the tel, there was probably an isolated cultic place to which offerings were brought by people from various places in the region. The fact that there were very few permanent Late Bronze sites anywhere in the vicinity of Shiloh may indicate that many of these people lived in pastoral groups, in temporary dwellings .... The steadily declining amount of pottery indicates a decrease in activity at the site ....”

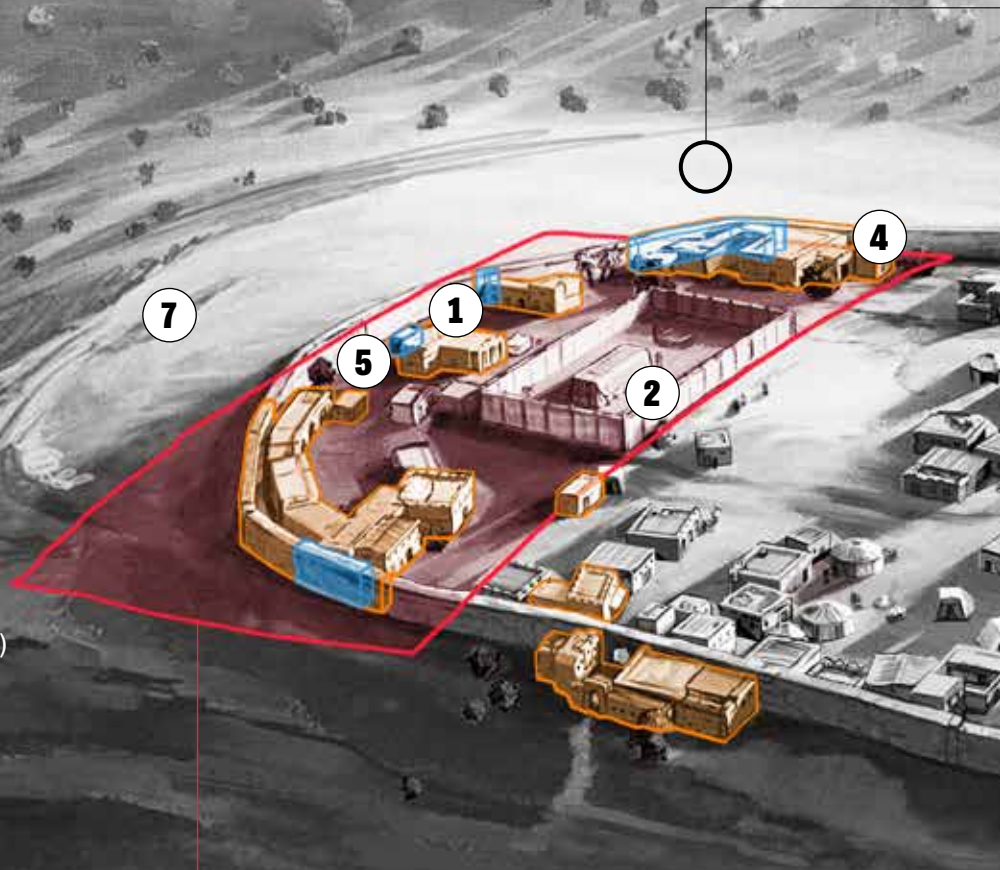
At first glance, this seems to undermine the biblical account. Wasn't Shiloh supposed to be the *capital* of Israel? Why was it so tiny? Why was it apparently dying out?

Actually, a drastic reduction in activity at Shiloh is exactly what a careful reading of the Bible implies. Notice an important detail recorded at the end of the book of Judges. Following a bloody civil war between Benjamin and the rest of Israel (Judges 19–20), only 600 Benjamites survived. To prevent the extermination of Benjamin, the Israelites needed to find wives for these men. They came up with a cunning plan. At an annual feast, the “daughters of Shiloh” would customarily dance in a meadow near their city. The Israelites suggested that the men of Benjamin lie in wait and simply kidnap the young women while they were dancing. By carrying out this plan, the tribe of Benjamin was saved from extinction.

One key detail from this biblical account provides insight into the state of Shiloh at the time. “Behold,” said the elders of Israel, “there is the feast of the Lord from year to year in Shiloh, *which is on the north of Beth-el, on the east side of the highway that goeth up from Beth-el to Shechem, and on the south of Lebonah ...*” (Judges 21:19). When biblical figures refer to a city, they almost never say anything about its geographical location. Even relatively

# BIBLICAL SHILOH

- 1 Altar horns and pomegranates
  - 2 Dr. Stripling's proposed location of tabernacle
  - 3 City walls (archaeologists believe the city was 5 acres)
  - 4 Favisa and bone deposits
  - 5 Storage rooms with collared-rim jars
  - 6 Finklestein's proposed tabernacle location
  - 7 Charles Wilson's proposed tabernacle location
-  Prof. Israel Finklestein's excavations
-  Danish excavations





Situated roughly 43 kilometers directly north of Jerusalem, Shiloh was Israel's political and religious capital for about 300 years during the period of the judges. Before it was occupied by the Israelites in the early 14th century B.C.E., Shiloh belonged to the Canaanites and was a center for Canaanite religious worship.

When the Israelites first inhabited Shiloh, they lived in structures constructed by the Canaanites, just as Moses forecast (Deuteronomy 6:10). By the early 11th century, the time period of Hannah, Eli and Samuel—Iron Age I, the period depicted in this illustration—Shiloh was more built-up and well established. Shiloh was Israel's religious center, and this is where the tabernacle was situated and the priesthood operated from. At this time, the tabernacle was probably a semipermanent structure, with a foundation built from stone and its upper features constructed from timber and animal skins.

## ACOUSTIC PERFECTION

In September 1976, Mark Myles of the Bolt Beranek and Newman acoustic firm from Massachusetts traveled to Israel to test the acoustic value of several biblical sites. According to Myles, the ambient noise level at Shiloh was well below what is considered to be the ideal requirement of the best concert hall. "It was quiet enough at Shiloh to hear a human voice quite distinctly at up to about 500 meters" (*Biblical Archaeology Review*, December 1976). Myles estimated that 10,000–20,000 people could be gathered at Shiloh and all hear the voice of the speaker.



## HIGHLIGHTING DR. STRIPLING'S EXCAVATIONS

Since 2017, Dr. Scott Stripling and his team from the Associates for Biblical Research have conducted renewed excavations at Tel Shiloh. This year marks the fourth season of excavation at Shiloh, where about 150 workers will take part over the five-week excavation. Some of the goals of the team's excavation are to investigate the location of the biblical tabernacle and any associated structures, uncover evidence of the biblical sacrificial system, and understand daily life in Israel at the time of the conquest and the period of the judges.

obscure places are often rattled off as if everyone knew where they were. In this case, however, the elders of Israel felt it necessary to give precise geographical details—about the *capital* of Israel. Why were they so specific?

What does that say about the size and importance of Shiloh at the time? If Shiloh were a huge, bustling, well-known capital city, describing its location in such detail would have been pointless. The elders of Israel probably had to give directions because the Benjamite men *didn't know where Shiloh was*. That implies the city must have been tiny and obscure at the time—just as the archaeological record indicates.

And why were most Israelites apparently ignorant of Shiloh, even though it was the seat of Israel's government and the religious center? Judges 21:25 answers: "In those days there was no king in Israel; every man did that which was right in his own eyes." During the period of the judges, Israel didn't have a strong centralized government, and it also didn't have a strong centralized religion.

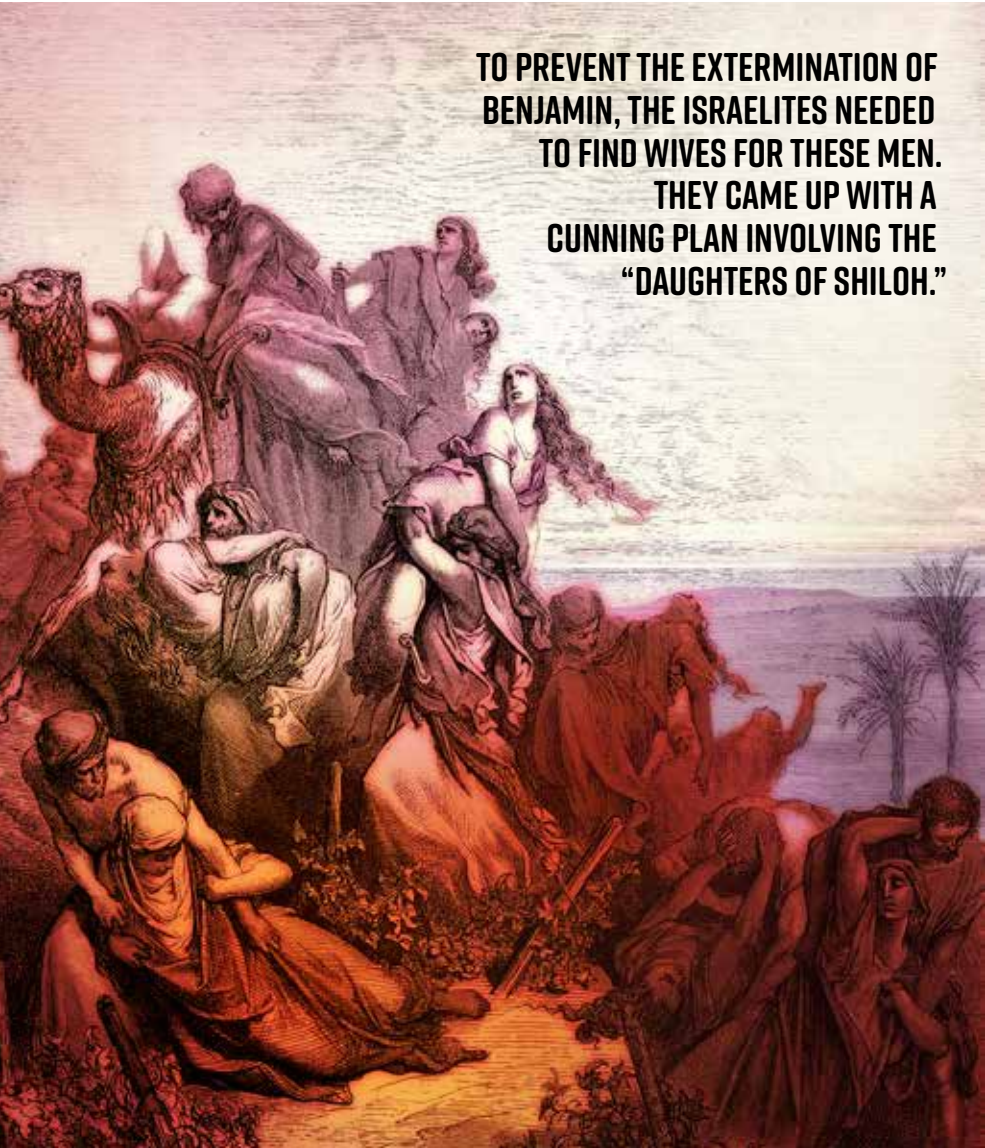
## Eli, Samuel and an Iron Age I Resurgence?

The book of 1 Samuel picks up the narrative from Judges. The early chapters of Samuel record the birth and early life of Samuel, Israel's last judge. According to the biblical chronology, these events occurred in the Iron Age I period (1200–1000 B.C.E.). The biblical account could imply a resurgence of activity in Shiloh at this time.

According to 1 Samuel 1:3, Samuel's parents journeyed to Shiloh annually to worship and offer sacrifices. At the time, the priests in Shiloh were Eli (the high priest) and his two sons, Hophni and Phinehas, both of whom were corrupt. 1 Samuel 2:13 says that "the custom of the priests with the people" was to steal their meat offerings. "So did they unto *all the Israelites that came thither in Shiloh*," verse 14 concludes. The language here seems to suggest there was a sizable number of visitors to Shiloh at this time. Otherwise, how could it have been a *custom* for Hophni and Phinehas to take advantage of worshipers?

Another indication is found in verse 22, which says Hophni and Phinehas "lay with the *women that did service* at the door of the tent of meeting." It is possible that these women were assembling to offer sacrifices. However, the Hebrew word for "did service" could also be translated "assisted" (New Living Bible), meaning that the women were possibly employed to help the priests with their duties at the door of the tabernacle. The fact that the priests needed the help of these women could indicate there must have been sizable numbers of worshipers in Shiloh.

Furthermore, the Bible implies the existence of a permanent structure either surrounding or adjacent to the tabernacle. 1 Samuel 1:9 says Eli "sat upon his seat by the *door-post* of the temple of the Lord." 1 Samuel 3:15 describes Samuel opening "the *doors* of the house of the Lord." Elsewhere, the Bible usually describes the entrance to a tent as a "tent door" (e.g. Genesis 18:1) or



**TO PREVENT THE EXTERMINATION OF BENJAMIN, THE ISRAELITES NEEDED TO FIND WIVES FOR THESE MEN. THEY CAME UP WITH A CUNNING PLAN INVOLVING THE "DAUGHTERS OF SHILOH."**

“door of the tent” (e.g. Exodus 29:4). The word “door” without a modifier is almost always used to refer to more permanent structures, such as Lot’s home in Sodom (Genesis 19:6) or Solomon’s temple (1 Kings 6:33). Additionally, the Hebrew word translated “temple” in the early chapters of 1 Samuel (see 1 Samuel 1:9; 3:3) is *hekal*. This word is never used to describe the tabernacle or any other tent. Outside of the “temple” in Shiloh, it describes only Solomon’s temple.

In essence, the Bible indicates there was a revival in Shiloh at the end of the period of the judges—both in population and, to some extent, in building.

Archaeology also reveals evidence of a resurgence. “We found remains from Iron Age I virtually everywhere we dug,” wrote Prof. Finkelstein. “From this period we discovered buildings, stone-lined silos and other remains ....” Further, he noted, “The pottery from these buildings is the richest *ever discovered* at any early Israelite site.” This shows that Shiloh must have had many inhabitants—or at least many visitors—at this time.

There is also archaeological evidence that the tabernacle was in Shiloh during the Iron Age I period. In more recent excavations, Dr. Scott Stripling unearthed two ceramic pomegranates on the north side of Tel Shiloh. The artifacts date to the Iron Age I period and measure about 8 centimeters in length. The pomegranate was a common motif in ancient Israel’s tabernacle worship. Notably, the high priest’s garments were decorated with pomegranates (Exodus 28:33; 39:25-26).

Dr. Stripling also may have found evidence that tithes were stored in Shiloh. His excavations uncovered numerous large storage rooms around the perimeter of the city. “No other site in Israel has that,” he said in an interview with the *Times of Israel*. He continued:

“If we’re assuming there was a sacrificial system there ... well, what do you bring if you’re going to bring your tithe? You can’t make a secure online donation at [Tabernacle.org](http://Tabernacle.org); you can’t write a check. What are you going to do? You’re going to bring commodities: barley, figs, pomegranates. And so what do we find? Storage rooms around the entire perimeter [of the tel].”

This fits well with other evidence from Prof. Finkelstein’s work in Shiloh. Finkelstein discovered several large, collared-rim storage jars in the city, which also could have been used to store tithes.

Three stone altar horns unearthed in Stripling’s excavations also indicate the presence of the tabernacle in Iron Age I Shiloh. Israelite altars had “horns” attached to each of their four corners (Exodus 27:2). The horns were used in various rituals and also provided refuge for fugitives who clung to them.

Perhaps the most compelling evidence that the

tabernacle was once in Shiloh is the large quantity of animal bones discovered there. Prof. Finkelstein’s excavations unearthed huge animal bone deposits dating to the Iron Age I period. The overwhelming majority of these bones were from animals that would have been used in the Israelite sacrificial system. Less than 1 percent were pig bones.

Additionally, Finkelstein found that about 60 percent of the bones were from the right side of the animal, while only 40 percent were from the left side. Dr. Stripling believes that this seemingly bizarre phenomenon can be explained by Leviticus 7, which says that the *priest’s* portion was to come from the right side of the animal. Since Shiloh was probably predominantly inhabited by priests and Levites, it makes sense that archaeologists would uncover a disproportionately large number of bones from the priests’ portions of sacrificed animals.

In short, the archaeology of Iron Age I Shiloh fits precisely with the Bible’s account. There is solid evidence supporting the resurgence of Shiloh implied in the early chapters of 1 Samuel. There is also solid evidence that Israel’s priestly worship was centered in Shiloh at the end of the period of the judges. If this is true, the tabernacle was undoubtedly in Shiloh too—but where?

## Finding the Tabernacle?

Archaeologists have debated the tabernacle’s ancient resting place for years. Scholars have seriously considered at least three locations. Some, such as Prof. Finkelstein, believe the tabernacle must have been located near the building complex in the city proper. They conclude it probably rested at the summit of the tel. Others, most notably Prof. Yosef Garfinkel, think it could have been located on the grassy plain south of the tel. Byzantine Christians built several structures on the area, which could indicate there was an oral tradition that the tabernacle once stood there.

Another compelling hypothesis was posited by Maj. Charles Wilson in 1866. While surveying Shiloh for the Palestine Exploration Fund, Wilson noticed a stretch of flat bedrock about 146 meters north of the tel. Upon further investigation, it appeared to have been intentionally flattened and squared. Furthermore, the dimensions of the flattened area closely paralleled the dimensions of the tabernacle described in Exodus 26 and 27. The platform was also aligned east to west, fitting with God’s command to make “the hinder part of the tabernacle *westward*” (Exodus 26:22). Additionally, the northern platform would have been geographically favorable for defense.

Because Tel Shiloh is steeply sloped on its northern, eastern and western sides, the city is most easily

approached from the south. For this reason, most archaeologists believe Shiloh's entrance was on the southern side of the city. This crucial fact is at the premise of another key argument in favor of Wilson's hypothesis.

According to the biblical account, Israel lost the ark of the covenant to the Philistines in the battle of Ebenezer (1 Samuel 4). After the defeat, a messenger ran back to Shiloh with the dreadful news: "And when he came, lo, Eli sat upon his seat by the wayside watching; for his heart trembled for the ark of God. And when the man came into the city, and told it, all the city cried out. And when Eli heard the noise of the crying, he said: 'What meaneth the noise of this tumult?' And the man made haste, and came and told Eli" (verses 13-14).

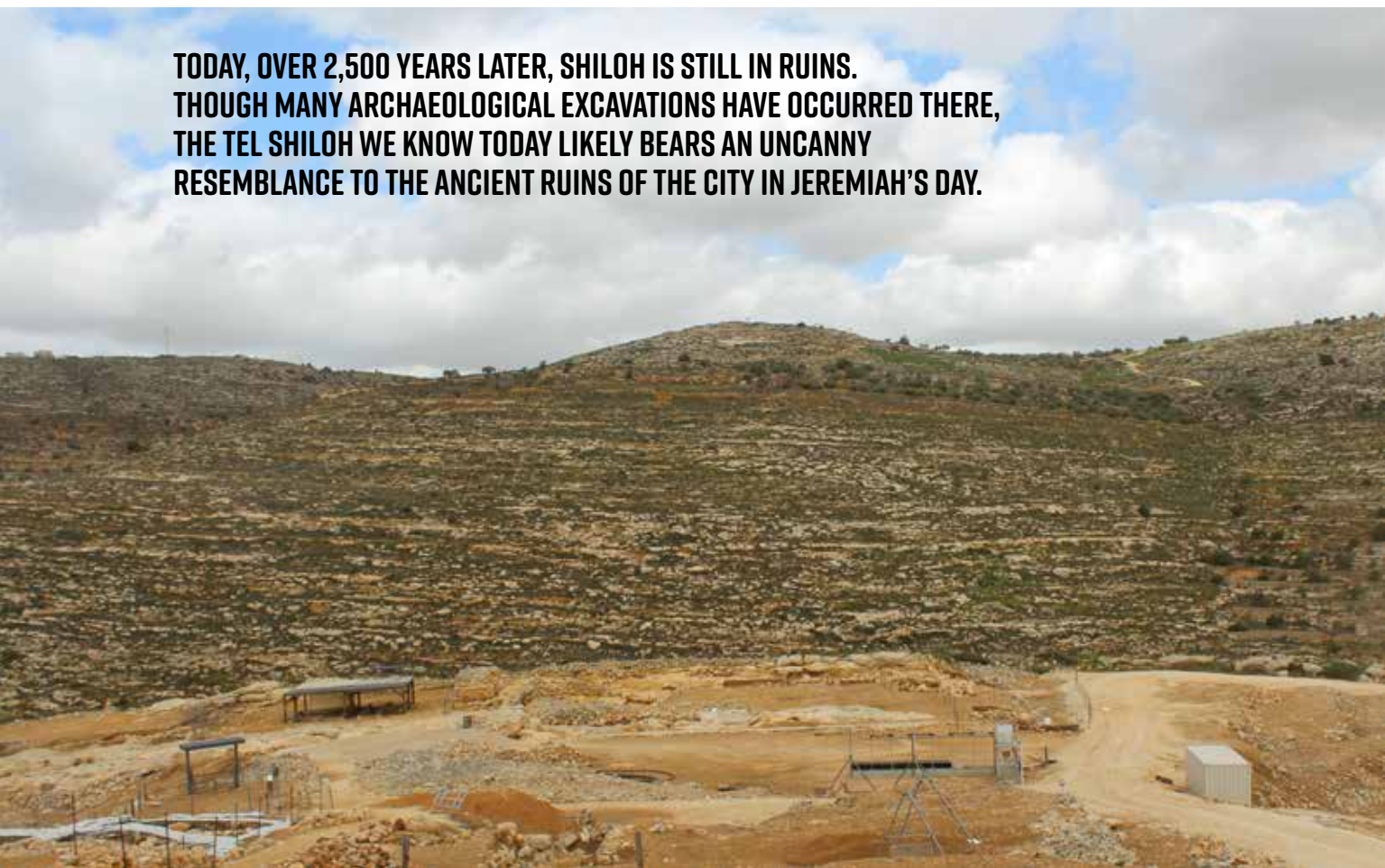
From other passages, we know that Eli's chair was located near "the temple of the Lord" (1 Samuel 1:9-13). If the messenger had to pass *through the city* to reach Eli, then the tabernacle must have been on the *opposite* side of Shiloh from its southern entrance—on the *north* side.

Considering all this evidence, Wilson's hypothesis seems logical. However, it has been met with some criticism in the century and a half since its origination. Notably, when archaeologist Ze'ev Yeivin excavated the northern platform from 1981 to 1982, he found no

remains from the Iron Age I period. This led archaeologists like Dr. Finkelstein to dismiss the northern platform theory. However, more recent excavations have uncovered what are likely Iron I remains from this area.

In recent years, and as a result of his extensive excavations, Dr. Stripling has formed an entirely new conclusion about the location of the tabernacle. Stripling believes the tabernacle will be found in the northern area of the tel, which would match the biblical narrative. However, unlike Wilson's idea, Stripling's location is inside the fortified city, which makes logical sense for such a sacred shrine. So far, Stripling has identified several walls from the Iron I period that match the biblical dimensions of the tabernacle. One of the walls was previously exposed in Professor Finkelstein's excavation, who dated it to the Middle Bronze period. Stripling has dated this same wall to the late judges period. Finally, the broken altar horns, pomegranate and bone deposits were all discovered in areas adjacent to the platform area, adding to the evidence that the tabernacle was close by. Dr. Stripling hopes that this season's excavation will uncover the final remaining corner of the rectangular building (see interview with Dr. Stripling on page 20 for more details).

**TODAY, OVER 2,500 YEARS LATER, SHILOH IS STILL IN RUINS. THOUGH MANY ARCHAEOLOGICAL EXCAVATIONS HAVE OCCURRED THERE, THE TEL SHILOH WE KNOW TODAY LIKELY BEARS AN UNCANNY RESEMBLANCE TO THE ANCIENT RUINS OF THE CITY IN JEREMIAH'S DAY.**



## The Fall of Shiloh

The Bible records a tragic close to Shiloh's illustrious history. At the end of the priesthood of Eli, the Israelites foolishly removed the ark from Shiloh and took it to the battle of Ebenezer, believing it would help them defeat the Philistines. The results were disastrous: "And the Philistines fought, and Israel was smitten, and they fled every man to his tent; and there was a very great slaughter; for there fell of Israel thirty thousand footmen. And the ark of God was taken ..." (1 Samuel 4:10-11).

When the high priest Eli heard the awful news, he was so shocked that he fell backward off his chair and snapped his neck. After this harrowing account in 1 Samuel 4, the Bible does not mention Shiloh (apart from a few retroactive references) until 1 Kings 14:2—over a century later in the chronology of biblical events. What happened to Shiloh?

The Bible implies it was destroyed. After the Philistines took the ark, they were cursed with awful plagues for seven months (1 Samuel 6:1). When Philistine leaders decided to return the ark to Israel, the Israelites took it to Kirjathjearim, where it remained for 20 years (1 Samuel 7:1-2). Why didn't they take it back to Shiloh? Probably because the Philistines had destroyed it after the battle of Ebenezer.

Other biblical writings confirm this. Psalm 78:60 says God "forsook the tabernacle of Shiloh, The tent which He had made to dwell among men." In the seventh century B.C.E., God, through the Prophet Jeremiah, used Shiloh to illustrate what would happen to Judah if it failed to repent: "[G]o ye now unto My place which was in Shiloh, where I caused My name to dwell at the first, and see what I did to it for the wickedness of My people Israel" (Jeremiah 7:12). God promised to destroy Jerusalem just like the Philistines destroyed Shiloh: "[T]hen will I make this house like Shiloh, and will make this city a curse to all the nations of the earth. ... This house shall be like Shiloh, and this city shall be desolate, without an inhabitant ..." (Jeremiah 26:6, 9).

Once again, archaeological evidence fits precisely with the Bible. In the 1930s, Dr. Hans Kjaer and his Danish team found a destruction layer in Shiloh dating to the middle of the 11th century.

Though originally controversial, dating of the ceramics in Kjaer's burn layer was later confirmed by Dr. Yigal Shiloh. More recently, Dr. Stripling carbon-dated remains from the burn layer to 1060 B.C.E., plus or minus 30 years. According to Stripling, the destruction of Shiloh probably happened around 1075 B.C.E.

## 'Ahijah the Shilonite'—Resettlement in the Iron Age II Period

The Bible does not say exactly when Shiloh was resettled after its destruction. However, according to 1 Kings, resettlement occurred at least as early as the reign of King Solomon.

Toward the end of Solomon's reign (circa 931 B.C.E.), God sent a prophet named Ahijah to prophesy of the split between Israel and Judah. 1 Kings 11:29 calls him "Ahijah the Shilonite," and a later verse confirms that he lived in Shiloh (1 Kings 14:2). There must have been at least a small settlement in Shiloh during the 10th century (Iron Age II period).

Furthermore, the Bible implies Shiloh was still inhabited after the destruction of Jerusalem in 586 B.C.E. After Jeremiah returned to Jerusalem, "there came certain men from Shechem, from Shiloh, and from Samaria, even fourscore men ... with meal-offerings and frankincense in their hand to bring them to the house of the Lord" (Jeremiah 41:5).

Archaeologists have found evidence of Iron II habitation in Shiloh. "Following a period of abandonment, a small village, the poor remains of which were found in several places, occupied the site in Iron Age II," wrote Prof. Finkelstein. "As the Bible reflects, and our excavations confirm, Shiloh never really recovered from the Philistine destruction in about 1050 B.C."

## The Legacy of Shiloh

Besides Jerusalem, is any city more central to the history of ancient Israel than Shiloh? It was Israel's first capital city and remained so for almost four centuries. It was a gathering place for important Israelite leaders. It was the resting place of the tabernacle and the religious center of Israel. However, after its destruction, Shiloh became a warning. "[G]o ye now unto My place which was in Shiloh," God warns, "where I caused My name to dwell at the first, and see what I did to it for the wickedness of My people Israel" (Jeremiah 7:12). When Jeremiah wrote that, Shiloh was in ruins, vividly illustrating the calamity that would shortly befall Jerusalem. Today, over 2,500 years later, Shiloh is still in ruins. Though many archaeological excavations have occurred there, the Tel Shiloh we know today likely bears an uncanny resemblance to the ancient ruins of the city in Jeremiah's day. ■





INTERVIEW

# Dr. Scott STRIPLING

Archaeologist Scott Stripling is the director of the Tel Shiloh excavations, conducted by the Associates for Biblical Research. Dr. Stripling and his team recently began excavations in Israel. In May, Dr. Stripling spoke with Brent Nagtegaal to discuss his important work in this biblically significant site and what they hope to find this season.

**BRENT NAGTEGAAL:** Dr. Stripling, thanks for joining us. You are about to begin the next phase of excavations at one of the most important sites in Israel, Tel Shiloh. How long has it been since you last excavated this site?

**SCOTT STRIPLING:** Hi Brent, thanks. It's a joy to excavate at Shiloh. We've been there since 2017, with a two-year hiatus because of COVID. This will be our fourth season of excavation.

**BN:** Let's begin with you giving us a quick summary of the biblical importance of Shiloh.

**SS:** Absolutely. Shiloh is first mentioned when Joshua erects the tabernacle there. We really don't know much from the Bible before that point. We do, from archaeology, know that it goes back to about the Middle Bronze II period; this is when the city was founded. We know, too, that it became a cultic site. Shiloh was Israel's capital for the first 300 years or so. The ark of the covenant was there, so it's always going to matter because of that. Later, Shiloh was destroyed because of their apostasy and wickedness. ... The Shiloh connections always tie back to the presence of God and the tabernacle there.

**BN:** Can you explain what you mean by "cultic"? This term might sound a little odd to some people.

**SS:** It means *religious*, basically. When we talk about a group's cult, we are talking about their religious practices. The word "culture" is based on cult. In other words, you form your values based on a religious system. So, by "cult" we're just talking about religious practices.

**BN:** What specifically drew your attention to Shiloh? Was it a personal aspiration to excavate this site, or were you basically assigned the job?

**SS:** Surprisingly, it was both. Our research focus is definitely on the highlands of Israel, the period of the conquest. I'm interested in all periods in history and specifically all biblical periods. I'm fascinated with New Testament materials. I've excavated New Testament sites as well, but our primary focus is on the conquest. When it comes to archaeology, the highlands of Israel are in the sweet spot. Shiloh is another conquest site. After many years digging at Khirbet el-Maqtar [a contender for biblical Ai] and finishing there, we were able to segue right into a new dig. A sane individual would have taken two or three years off and published before launching into a new dig. I did not do that; so apparently I'm not very sane. But we had this fine, well-oiled machine that we got up and running [at

Khirbet el-Maqtar], and I just couldn't see shutting it down. The doors opened up for us to go to Shiloh. We were supported by the local community, and the Israel Antiquities Authority was also eager for us to do this, so it just kind of all came together, and it was a perfect fit.

**BN:** You mentioned "our." Can you tell us about the organization behind the research expedition in Shiloh?

**SS:** Sure. Associates for Biblical Research has been working in the highlands of Israel for 43 years. This is the fourth site that we've excavated in the highlands, and then we've done work in other places as well. ABR is a consortium of universities and individuals who are like-minded ... This summer, I have 15 universities and institutions that are working as part of our consortium all under my direction.

**BN:** And your teams are comprised of individuals from all over the world?

**SS:** You nailed it. We have participants from several Israeli universities, students as well. Some European, and then a lot of Americans.

**BN:** Let's discuss the discoveries that relate to the first couple of seasons of excavation. And let's just stick to the period in which the tabernacle was erected and later removed. What have you found in Shiloh that spotlights this period in history?

**SS:** Well, it's a very fascinating period. We're talking about the Late Bronze II, Iron Age I kind of matrix, and maybe the beginning of Iron IIIA.

**BN:** Can you give some dates for these periods?

**SS:** If I'm taking an early date for the Exodus and synchronizing that with the Bible, we're talking about something around 1400 B.C.E. for the tabernacle being erected at Shiloh, and it was destroyed around 1075 B.C.E.—something like that.

**BN:** Okay. And what picture is emerging from your first three seasons, and how does it relate to the Bible?

**SS:** Well, it's exciting! Now for the first time after three seasons—and we're publishing our three-year report right now—we have our first clear Late Bronze Age stratum. It's a little frustrating when you're dealing with Late Bronze Age material at sites because the ancient people often reused Middle Bronze structures. In the Middle Bronze Age, we have houses, walls and storage

rooms. But in the Late Bronze Age, they mainly lived in tents, and then whatever structures were already in place, they continued to use those, maybe with minor repairs. So, it's a little difficult, but we can now piece together that transition into the Late Bronze Age.

**BN:** But that's to be expected, correct?

**SS:** Right. If we take the biblical text seriously, then yes, we would expect the Israelites to be living in houses that they didn't build and occupying cities that they didn't construct. And this is very consistent with what we have found.

**BN:** So we have evidence that the Israelites, when they first entered the Promised Land, did not dwell in homes they constructed. They did not destroy everything and rebuild; instead, they dwelt in the buildings the previous inhabitants occupied. And this is exactly what Moses said would happen, right?

**SS:** Yes. They continue to live in existing structures for some time and that is what we see. There is not a demographic explosion, if you will, in the archaeological record until about 1200. Which again, it takes several generations until you have that demographic explosion.

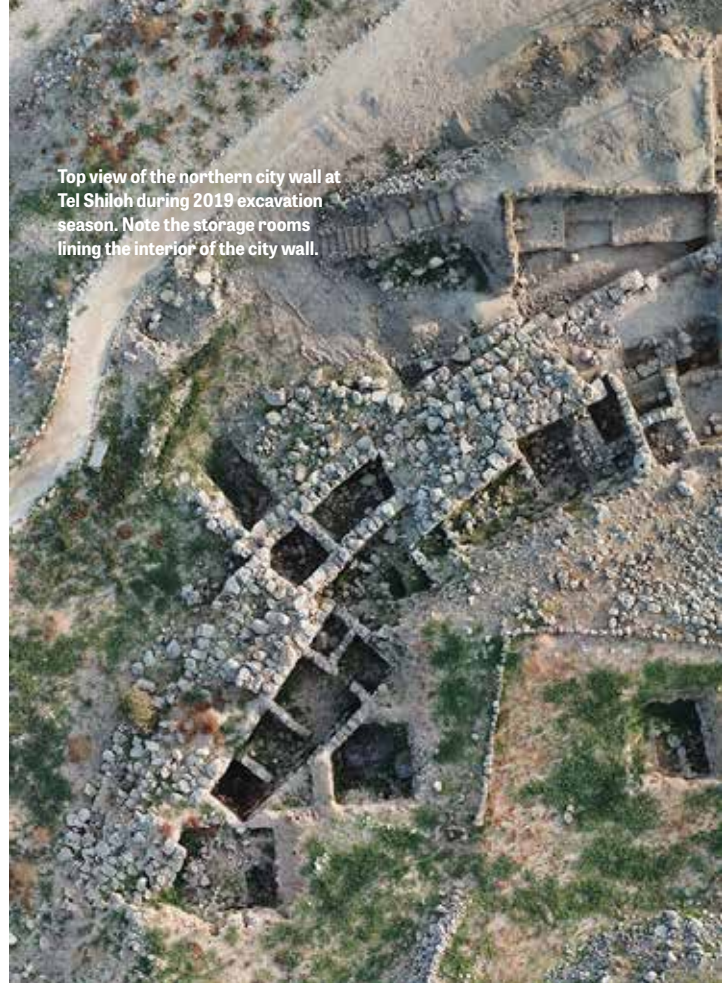
**BN:** And do you find evidence of construction at Shiloh around 1200 B.C.E., or are the Israelites still using the earlier buildings?

**SS:** No. They begin to build their own structures, coincidentally, when the possible platform for the tabernacle is constructed. That is the same time that we begin to see their own structures emerging, too.

**BN:** Can you briefly talk about the "cultic" evidence you have found at the site—the evidence that shows it was an Israelite site?

**SS:** Here are a few things. First, we have storage rooms that line the northern perimeter of the fortification walls. These are right next to the building that appears to be the platform of the tabernacle. So we have in close proximity to the tabernacle these storage rooms that line the interior. That is different from any site in Israel. This is unique in its construction and these rooms are full of Iron Age I collared-rim jars, which is typical of what you would expect of people bringing in tithes that need to be stored.

We also have a building which orients east-west, which appears to match identically the dimensions given in the Bible for the tabernacle. Around this



Top view of the northern city wall at Tel Shiloh during 2019 excavation season. Note the storage rooms lining the interior of the city wall.

building, we have a demolished four-horned altar. We also have identified two ceramic pomegranates.

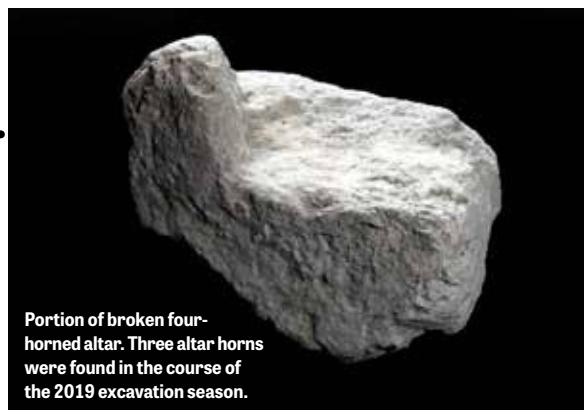
**BN:** Tell us more about this demolished altar. How do you know it was four-horned altar? Did you find the altar intact?

**SS:** Immediately outside the building we have a beautifully preserved altar horn, and we have another one that is in secondary usage as part of later-period wall. And there is a destruction matrix right in there that we carbon-dated and ceramically analyzed to 1075 B.C.E., which matches perfectly with the Philistine destruction of Shiloh alluded to in the Bible (but not specifically referenced).

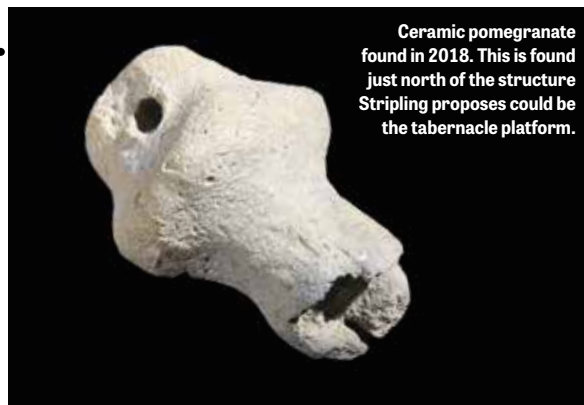
Then, maybe most importantly, immediately to the east of that building if you walked 30 seconds or so, you would reach the eastern perimeter wall. On top of this wall, and immediately inside and on the outside, there was a *favisa* [a sacred deposit] consisting of pottery and bones. *Only* bones from the biblical sacrificial system exist there, along with very datable Late Bronze Age pottery from the LBIB–LBIIA horizon, so around 1400–1300 B.C.E.—matching, say, the Beth-Shean assemblage very closely. Two thirds of the bones are from the right side of the animal; one third are from the left side of the animal.

All this evidence is a clear indication, if one is a Bible





Portion of broken four-horned altar. Three altar horns were found in the course of the 2019 excavation season.



Ceramic pomegranate found in 2018. This is found just north of the structure Stripling proposes could be the tabernacle platform.

reader and reads Leviticus 7, that you're dealing here with verisimilitude. The Bible says that the right side of the animal is the priest's portion. Give me another explanation for that, and I would love to hear it! So, when we take these things inductively, if you will—the bone deposit, the *favis*, the structure that matches the dimensions of the tabernacle, the storage rooms, the demolished altar, the pomegranates—I think we're getting a synchronism and a clear picture of what was happening at Shiloh during the period of the tabernacle, the period of Eli and Samuel.

**BN:** When I interviewed you a couple of years ago, you had an idea that there was a roaming location for the tabernacle itself. Do you now believe the evidence is pointing to a more stationary structure?

**SS:** I do. Let it not be said that I'm unwilling to change my mind. You hypothesize when you start an excavation, and my hypothesis was that perhaps the tabernacle was mobile—that the whole site was sacred and maybe it moved from different locations. ... The summit also made good sense to me. That's what the Danish team thought, and that's what the Bar Ilan University team thought as well. So I, of all people, was the most surprised when on the northern slope in Area H1, we uncovered this building. That caught me by total surprise.

**BN:** So, the building itself was not previously uncovered?

**SS:** No it wasn't. Only one section of the wall in Area K was uncovered by the Bar-Ilan team in the 1980s, which [they] had dated incorrectly to the Middle Bronze Age. This was not what I expected, but as the evidence unfolded, I had to say apparently my previous theory [that the tabernacle was mobile or on the summit] was just that, a theory. We now have a better candidate.

**BN:** When I tell people that you're excavating at Shiloh, they often ask, "Does he expect to find the tabernacle?" I usually tell them that the tabernacle was made from animal skins, so it's probably long decayed, which means we're unlikely to find it. But you believe you now have evidence of the tabernacle site. Tell me a little about this platform and how it relates to the tabernacle. Is this in bedrock, or are there built walls attached to it, or is this one of the goals of the next season of excavation to try and discern more of this?

**SS:** Yes, yes, yes and yes. We have three corners of the building. This summer, we should know very early on if we have the fourth corner where we think it is, and then I can speak with more confidence about what this probably is. The Bible in 1 Samuel 3 gives some hints

in the language. In the first part of the chapter, the language used implies the tabernacle was temporary. It has curtains and things like that. By the end of the chapter, the language implies the tabernacle was more stationary. It now has walls and a door.

**BN:** Please tell us more about the biblical story attached to 1 Samuel 3.

**SS:** Sure, well that's where Samuel is growing from a small child and he's hearing the voice of God. This chapter talks about the ark and Phinehas and Hophni,

that people go to see at Shiloh. Then there are references to Shiloh even in the time of Jeremiah. But it is more reminiscing—it's not the central cultic center.

**BN:** Let's conclude by talking a little about the next season. What questions are you hoping to answer?

**SS:** Sure. We're trying to clarify the transition from the Canaanite period to the Israelite period, from MBIII into the LBIB–LBIIA horizon. We're also trying to understand the extent to which the site was occupied in the late Second Temple Period, which by the way is extensive. Across the entire site, we have evidence of a large settlement during the time of Jesus. We have Byzantine remains, Islamic material, Late Roman material as well, a little bit of Persian, a little bit of Iron Age II. We've got a clear stratigraphy now, but our research focus is the transition between the Bronze age and the Iron age.

**BN:** How many areas are you excavating across the site, or are you focusing mainly on the tabernacle area?

**SS:** We are primarily in Area H1, which is a large area, and fortunately, that's where the building emerged, right in the center of H1. We will extend a little bit into Area K, which is right across the path from us, so that we can explore the rest of

the building. Then perhaps we'll be able to explore Area D as well where we have the *favisa* and the bone deposit.

**BN:** If you find something blockbuster, how long do you expect it would take for it to reach publication?

**SS:** I'm pretty disciplined and focused on this. ... Publication is always our goal. It is not to excavate; it is to publish. It will be on a fast track, and it will be my top priority to get it published and get the word out.

**BN:** Okay, well, all the best on your travels. I hope to visit you at the site here in the next month. Thank you very much for affording us your time today. We really appreciate you talking with us.

**SS:** Happy to do it, Brent. I'm going to have a trowel and some gloves ready for you when you arrive. ■



**Dr. Stripling and team**  
"read" pottery at the site.

the wicked sons of Eli, and how the ark was taken to the battle and then captured by the Philistines. All of this is happening in chapter 3. When the tabernacle is referred to in this chapter, the language early in the chapter suggests it was temporary. But, by the end of the chapter, the language indicates it was more permanent. It has walls and a door. This is more obvious in the Hebrew, but you can pick it up in English. When you read about it in the Mishnaic literature, the language suggests there was a temporary then semi-permanent structure built at Shiloh for the tabernacle. Maybe it was a platform with stub walls and a tent over it—so a quasi-Mishkan/temple.

**BN:** This tabernacle platform didn't last long. It was built shortly before Shiloh was destroyed, right?

**SS:** That's right. But even though it was destroyed, Shiloh remains a special place. Later you have a prophet there

► **RADIOCARBON DATING** FROM PAGE 11

Finally, human agenda can also pose an issue. It is not rare for the scientist doing the carbon dating to ask the archaeologist who submitted the artifact how old he or she expects the sample to be. If carbon dating is so reliable, why would this be necessary? Of course, carbon dating is *not* reliable by itself, and it is common for testing to produce anomalous dates. So, in an effort to prevent this, scientists will often prefer to test with at least a ballpark date in mind.

Another point worth noting is that, from time to time, rumors circulate within the scientific commu-

the problem to be solved,” Professor Mazar wrote, based on certain of the ambiguous (or entirely erratic) carbon dates received. “Changes in recent versions of calibration curves imply that calibrated date ranges may *yet* change for samples of interest to chronological questions involving a time span of only 50–80 years.”

“Debates over the dates of archaeological strata are unavoidable,” Mazar noted. “The current debate over the 10th–9th centuries B.C.E. is an excellent case study. Yet it seems that there is a long way to go before the final word will be said in this debate.” It has been a while since Mazar presented his paper—yet even with

**“Changes in recent versions of calibration curves imply that calibrated date ranges may yet change for samples of interest to chronological questions involving a time span of only 50–80 years.”**

nity about radiocarbon-dating specialists adjusting their conclusions to suit the agenda or argument of the archaeologist. Archaeologists will often send similar samples to different labs to mitigate this possibility.

**Where Does That Leave Us?**

As we have seen, radiocarbon dating is far from being a clear, fixed, unbiased, independent and reliable form of dating. Undoubtedly, it does represent a remarkable development in modern science and math. And thanks to modern calibration attempts scientists have been able to attempt to iron out numerous “wrinkles” in the dating of various periods in history.

A key issue highlighted by these manifold problems and ever increasing “effects” being discovered that require additional calibration is that *we don’t know what we don’t know*. In a field built upon multiple assumptions, with constantly doctored and changing data, how do we know that everything has been accurately accounted for? (See the sidebar for a recent example of how this relates to archaeology of the United Monarchy.)

In 2001, Prof. Amihai Mazar presented the results of what then constituted one of the largest batches of carbon-14-dated material from the Iron Age Levant. The results came from his excavations at Tel Beth Shean and Tel Rehov. Was it worth it? He presented his conclusions, in relation to the question of the United Monarchy and the claims then being made by Professor Finkelstein and his associates, in *Radiocarbon* (Vol. 43).

“The chronological debate concerning the 10th–9th centuries B.C.E. in Israel is over a time range of between 50 and 100 years. ... [C]alibrated <sup>14</sup>C dates sometimes [give] a time range that is too wide or ambiguous for

advancement in this field, these conclusions still hold, to a large degree (again, note the sidebar, page 8).

Traditionally, for the past century, comparative pottery analysis has been used to give dates to archaeological sites. If anything, carbon dating has proved that many of the traditional methods of dating are, in fact, the most accurate—not to mention they come with additional benefits. Take pottery, for example. Pottery is plentiful in an excavation, it does not decompose, and with an archaeologist skilled in pottery reading, it can be dated with generally the same level of accuracy as radiocarbon. In some cases, it can be dated with even *greater* accuracy. What’s more, it can be done *freely*, and without waiting potentially weeks for a turnaround result (receiving dates promptly is particularly important in the course of an excavation). Certainly, radiocarbon dates, properly selected and dated, *can* serve as a good check, in tandem with pottery dating.

Will science produce a more accurate form of dating? We’ll see. Even now there is a new potential method in its earliest phases of research: archaeomagnetism. Yet sometimes, the simplest ways are the most effective.

Prof. Gabriel Barkay summed up radiocarbon dating rather flamboyantly: “Carbon-14 is like a prostitute. Given the margin of error, radiocarbon allows everyone to argue the position they already hold.” Prof. Bruce Brew put it this way: “If a C-14 date supports our theories, we put it in the main text. If it does not entirely contradict them, we put it in a footnote. And if it is completely out of date, we just drop it.”

These are hardly confidence-inspiring endorsements of the radiocarbon-dating method. ■

NEW DISCOVERY

# JERUSALEM ELITES WERE IMBIBING ON VANILLA-LACED WINE BEFORE CITY'S FALL

Evidence of wine-soaked opulence in the city's final moments—just as the Prophet Jeremiah described

BY CHRISTOPHER EAMES



RESEARCHERS FROM TEL AVIV UNIVERSITY AND the Israel Antiquities Authority have just released surprising findings from a chemical analysis of sixth-century B.C.E. wine jars recently discovered in the City of David: It turns out that Jerusalem's elites enjoyed their wine with a touch of *vanilla*.

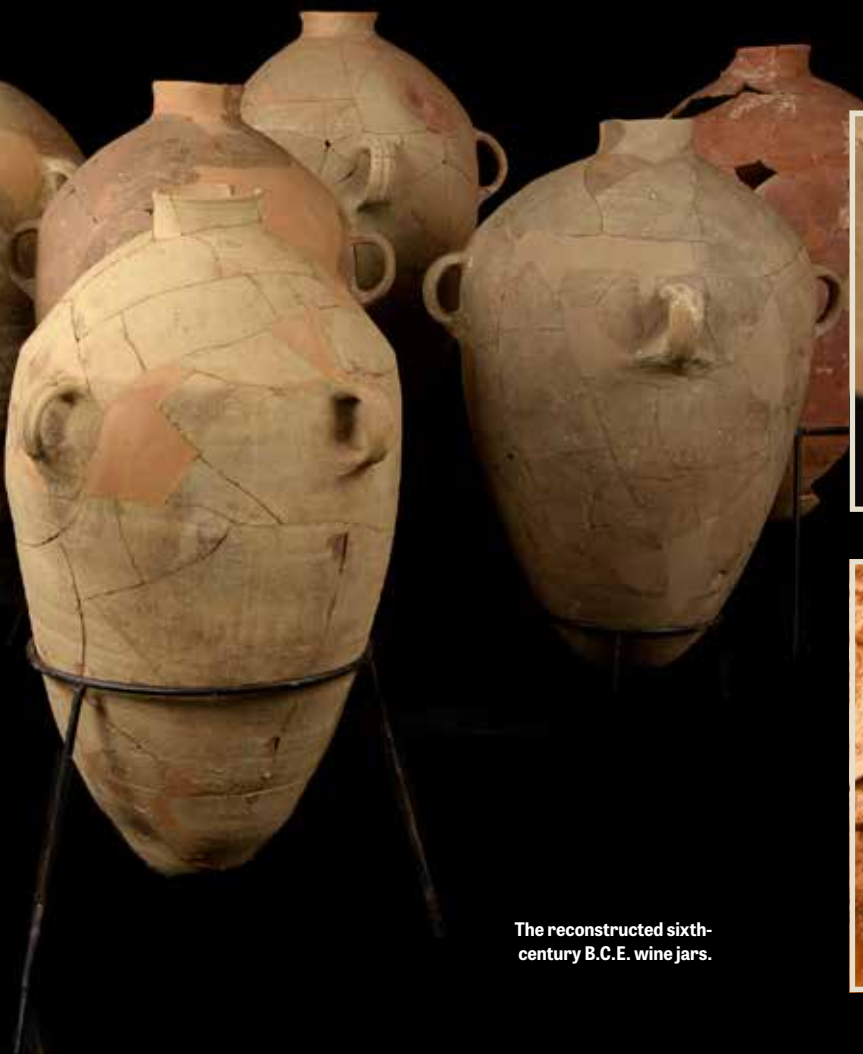
The findings were revealed in a *PLOS ONE* scientific journal article titled "Residue Analysis Evidence for Wine Enriched With Vanilla Consumed in Jerusalem on the Eve of the Babylonian Destruction in 586 B.C.E." The study concentrated on the organic residue left behind on wine vessels discovered in a Babylonian destruction layer in the City of David. The identification of vanilla was particularly surprising because, as noted by the press release, this rather exotic substance, "until recently, was not at all known to be available to the Old World before the arrival of [Christopher] Columbus." The researchers believe the spice was probably imported from the East. "The discovery of vanilla fantastically illustrates which luxury products came here—possibly from India and its surroundings."

Ayala Amir, the doctoral student in Tel Aviv

University's archaeology and ancient Near Eastern cultures department who conducted the research, noted: "Vanilla markers are an unusual find, especially in light of the fire that occurred in the buildings where the jars were found. The results of the analysis of the organic residues allow me to say with confidence that the jars contained wine and that it was seasoned with vanilla."

While vanilla is apparently nowhere mentioned specifically in the Bible, the use of wine certainly is—and notably, *spiced* wine (e.g. Song of Solomon 8:2, also translated as *perfumed* wine). Other wines, such as *sweet* wine, are also mentioned (Isaiah 49:26).

The Prophet Jeremiah, on the scene in Jerusalem at the time of the city's fall to the Babylonians, notably described the gluttonous city at the time as being brimful of wine. The warning message he relayed from God even compared its coming destruction to the smashing of wine vessels. Jeremiah 13:12-15 and 25 state: "Moreover thou shalt speak unto them this word: Thus saith the Lord, the God of Israel: 'Every bottle [or jar/vessel] is filled with wine'; and when they shall say unto thee: 'Do we not know that every bottle is filled with wine?' Then



The reconstructed sixth-century B.C.E. wine jars.



Jar handle with rosette impression associated with Judah's royal economy.



Destruction layer in the City of David containing broken wine vessels.

shalt thou say unto them: Thus saith the Lord: Behold, I will fill all the inhabitants of this land, even the kings that sit upon David's throne, and the priests, and the prophets, and all the inhabitants of Jerusalem, with drunkenness. And I will dash them one against another, even the fathers and the sons together, saith the Lord; I will not pity, nor spare, nor have compassion, that I should not destroy them. Hear ye, and give ear, be not proud .... [T]hou hast forgotten Me ....

The large stash of wine vessels was discovered in two different locations in the City of David, both relating to the same pre-destruction time period: one, on the eastern slopes of the City of David, in excavations led by Dr. Joe Uziel and Ortal Chalaf (eight vessels); another, on the western side of the City of David (the Givati Parking Lot excavation), led by Prof. Yuval Gadot and Dr. Yiftach Shalev (15-plus vessels). Gadot and Shalev's discovery was made in what was apparently a large wine-storage cellar area—a room packed to the hilt with the jars, “so crowded that it was hard to understand how people could move inside it.”

They offered the following regarding the new research: “To date, we have not had direct evidence

of the use made of such jars. Some suggested wine or olive oil, but there was no direct evidence of the vessels themselves. Molecular analysis now allows us to expand the boundaries of knowledge and imagination. Now, we begin to piece together the jar puzzle. The wine, perhaps, is not a big surprise, but the fact that it is seasoned with vanilla is amazing.”

Uziel and Chalaf also made a statement: “The opportunity to combine innovative scientific studies examining the contents of jars opened a window for us, to find out what they ate—and in this case—what they drank in Jerusalem, on the eve of the destruction.”

The dating of the artifacts and their exotic contents to the moments just before the 586 B.C.E. destruction also vividly brings to mind the words of the book of Isaiah, concerning a blasé attitude in the city (Isaiah 22:13):

And behold joy and gladness,

Slaying oxen and killing sheep,

Eating flesh and drinking wine—

“Let us eat and drink, for tomorrow we shall die!”



# Meet Avital— The Mazar You Might Not

Few could have matched the prodigious of Dr. Eilat Mazar—except, perhaps, her

BY ARMSTRONG INSTITUTE STAFF

**T**HE MAZAR FAMILY IS FAMOUS THROUGHOUT Israel and abroad for their contributions to the field of archaeology. Prof. Benjamin Mazar (1906–1995), the “patriarch” of the family, is sometimes referred to as the “dean of biblical archaeologists.”

Professor Mazar received the first excavation license granted by the newly formed State of Israel and served as president of the famous Hebrew University of Jerusalem. He is especially well known for his decade-long excavation around the foot of the Temple Mount walls following the recapture of Jerusalem during the 1967 Six-Day War, among numerous other excavations.

Prof. Amihai Mazar, Benjamin Mazar’s nephew, also entered the field of archaeology and has excavated at numerous sites around Israel since the 1970s. In 2009, he won the prestigious “Israel Prize” for his contributions to the archaeological field. Also a Hebrew University archaeologist, one of his most significant excavations so far was at Tel Rehov in Israel’s north, where he discovered the “Elisha Ostrakon.”

The late Dr. Eilat Mazar (1956–2021), granddaughter of Benjamin Mazar, was another leading light. Having participated in her grandfather’s Temple Mount excavations as a young girl, she “caught the bug” and became an archaeologist herself. This Hebrew University archaeologist’s primary area of focus was on Jerusalem archaeology (though she also took a particular interest in Phoenician archaeology, leading excavations at Achziv). Some of her most famous work includes the excavation of “David’s Palace” in Jerusalem’s City of David and a royal “Solomonic” complex on the Ophel (as well as numerous small finds, such as the Hezekiah, Isaiah, Jehucal and Gedaliah bullae and the menorah-medallion gold hoard).

Our organization has had the privilege of being in partnership with the Mazar family since 1968, beginning with our predecessor Herbert W. Armstrong, who became a close friend of Prof. Benjamin Mazar, joining the Temple Mount excavations in 50:50 partnership

with Hebrew University. (Dr. Eilat Mazar recalled how, as a young girl, she worked alongside these “friendly, English-speaking students”!)

That Armstrong-Mazar connection, which continued until Mr. Armstrong’s death in 1986, was picked up again in 2005, when Dr. Mazar began her excavations in the City of David. The following year, students from our organization joined her in the field—and we were privileged to work alongside Dr. Mazar on every excavation (seven of them) since, both in the field and in her office, up until her untimely death last year.

Yet while Professors Benjamin Mazar and Amihai Mazar and Dr. Eilat Mazar are the three “big names” in the archaeology family, there is yet a fourth deserving of credit. That is Eilat’s sister, Avital Mazar-Tsairi.

Avital also studied archaeology in university, receiving her B.A. in Archaeology from the University of Haifa. However, she did not go on to take it up as a professional career. (She also attended Herbert Armstrong’s Ambassador College in England for a year, before returning for military service—the same year that the 1973 Yom Kippur War broke out.) In the years since, Avital has “worn many hats,” embarking on numerous entrepreneurial ventures (everything from professional waxwork and candlemaking to farming and lodging). Yet she has still managed to stay involved in archaeology, with her involvement only increasing after her sister Eilat’s death.

Throughout Dr. Eilat Mazar’s City of David excavations, Avital served alongside her as dig registrar—leaving at 4:00 every morning to make the 1 1/2-hour journey from her home in Dor, on the coast, to Jerusalem’s City of David. (Dr. Mazar’s excavations typically started very early, concluding in the early afternoon in order to avoid most of the afternoon heat.) She continued to serve on the team during the 2009 Ophel excavations, sorting and documenting finds.

Avital also served as the “envoy” entrusted with

# Have Heard About work ethic sister.

personally delivering precious artifacts discovered by Dr. Mazar, including the seals of the biblical princes Jehucal and Gedaliah, to our headquarters location in Edmond, Oklahoma, in order for them to be displayed in our premiere exhibits.

One of Eilat's primary objectives was to complete the publication of their grandfather's findings from his excavations around the Temple Mount. She undertook this task in addition to completing the publication of her own excavations. Eilat was able to complete much of this work with the production of several books. (She completed the final of these while bedridden and barely able to move, just two months before she died.)

Since Dr. Mazar's death, Avital has selflessly taken up the mantle (together with Eilat's personal assistant, Dr. Viviana Moscovich) to finish publication of the final volume of their grandfather's work. Alongside this is the mammoth task of compiling and publishing the last of Eilat's own final reports (City of David II, Ophel III and Ophel IV). Avital also sells and mails Dr. Eilat Mazar's publications, serves as liaison for scholars requesting access to Eilat's work, and more—and all this, while continuing to maintain several of her own business projects at home. Our Armstrong Institute staff continues to assist Avital every week at the university, chiefly in preparing Eilat's final reports for publication.

Avital's work ethic, like her sister's, is tremendous. If she were asked what she does for fun, she would give an answer along the lines of *work*. Her work, in addition to her growing family, is her life. And it is a pleasure to continue to work with and for her in continuing the Armstrong-Mazar legacy.

The name *Mazar* is a Hebrew word that, among other things, is linked to *stars*, or a *constellation* (Job 38:32). And though she isn't a tenured professor or the like in archaeology, Avital truly is as bright a star as any of her archaeologist relatives in the resplendent constellation that is the Mazar family. ■

## FEEDBACK

**Thank you! Reading about archaeology is my passion. Your new magazine is ideal. I also believe the Bible is the most excellent source possible.**

**Paul Sutter** MICHIGAN, UNITED STATES

I absolutely do not want to miss even ONE publication as it covers a subject that I myself am very interested in. And for one other very important reason: It offers undeniable truth in what is written in our Bible. We have "of the day" historians who were there on the spot when events took place, and now we have tangible evidence to go along with the spoken word.

**Jackie and Ian Sanderson** COOK ISLANDS

I just wanted to say how much I am enjoying the magazine. It is so informative and makes a change from publications that constantly have an agenda of trying to dismiss the biblical record. So please continue with your superior articles. I am very appreciative.

**Mark Dowden** UNITED KINGDOM

I just finished reading the latest Let the Stones Speak online. I get the copy through the mail but couldn't wait. Everything you all write or interviews or podcast are truly amazing. The history and uncovering all the things found in the ground around God's beloved city. Thanks for your research and dedication.

**Karen Cooler** GEORGIA, UNITED STATES

## IN RESPONSE TO ARTICLE: "UNCOVERING ANCIENT JERUSALEM!"

I must confess to being far from an expert in the subject, but I found this article absolutely fascinating!

**Moshe Ben-Shahar** MEGIDDO, ISRAEL

For our free products visit  
**ArmstrongInstitute.org**

## STAFF

EDITOR IN CHIEF  
GERALD FLURRY  
EXECUTIVE EDITOR  
STEPHEN FLURRY  
MANAGING EDITOR  
BRAD MACDONALD  
SENIOR EDITOR  
JOEL HILLIKER  
ASSISTANT MANAGING EDITOR  
BRENT NAGTEGAL  
CONTRIBUTING EDITOR  
CHRISTOPHER EAMES  
CONTRIBUTING WRITERS  
JUDE FLURRY  
JOSHUA TAYLOR  
MIHAILO S. ZEKIC  
PROOFREADERS  
TERI BAILEY  
ALEXA HADDAD  
DOTTIE KIMES  
AUBREY MERCADO  
DESIGNERS  
STEVE HERCUS  
REESE ZOELLNER  
ARTISTS  
GARY DORNING  
JULIA GODDARD  
PRESS AND CIRCULATION  
EDWIN TREBELS

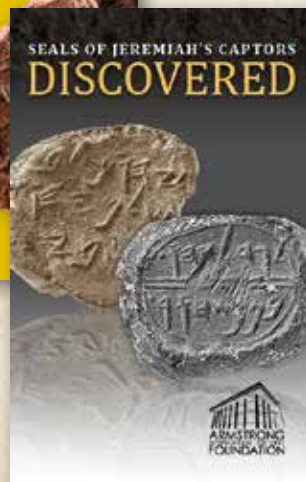
## LET THE STONES SPEAK

May-June 2022, Vol. 1, No. 3 is published bimonthly by the PCG. Address all communications to Armstrong Institute of Biblical Archaeology; PO Box 8314, Jerusalem, 9108201, Israel. How your subscription has been paid: *Let the Stones Speak* has no subscription price—it is free. This is made possible by donations freely given to the Armstrong International Cultural Foundation. Those who wish to voluntarily support this worldwide work are gladly welcomed as co-workers. © 2022 Armstrong International Cultural Foundation. Unless otherwise noted, scriptures are quoted from the *Jewish Publication Society of America of the Tanakh* version of the Bible.

## CONTACT US

Please notify us of any change in your address; include your old mailing label and the new address. The publishers assume no responsibility for return of unsolicited artwork, photographs or manuscripts. The editor reserves the right to use any letters, in whole or in part, as he deems in the public interest, and to edit any letter for clarity or space. WEBSITE [ArmstrongInstitute.org](http://ArmstrongInstitute.org) E-MAIL [letters@ArmstrongInstitute.org](mailto:letters@ArmstrongInstitute.org) subscription or literature requests: [request@ArmstrongInstitute.org](mailto:request@ArmstrongInstitute.org) PHONE Israel: 972-54-2609-232 MAIL Contributions, letters or requests may be sent to our office: PO Box 8314, Jerusalem, 9108201, Israel

# BIBLE EVIDENCE UNEARTHED!



Open the Bible, and you will find great events, great deeds and great hope within Jerusalem. Open the ground of that city today, and you will discover artifacts and ruins that prove the biblical record. Dr. Eilat Mazar met that challenge and uncovered rich history from the reigns of David, Solomon and Hezekiah, the work of Nehemiah, and the warnings of the prophets Isaiah and Jeremiah.

To learn about some of her most impressive archaeological discoveries, the greatest ever made in this special city, request your free copies of **Seals of Jeremiah's Captors Discovered** as well as **Seals of Isaiah and King Hezekiah Discovered**.

**ONLINE** [ArmstrongInstitute.org](http://ArmstrongInstitute.org)  
**E-MAIL** [letters@ArmstrongInstitute.org](mailto:letters@ArmstrongInstitute.org)  
**MAIL** PO Box 8314, Jerusalem, 9108201, Israel

NO CHARGE • NO FOLLOW-UP • NO OBLIGATION