

A Glimpse into the Archaeology of Sodom (Tall el-Hammam)

(Adapted from Harvest House Publishers, 2012)

Joseph M. Holden

Copyright Joseph Holden, 2012. All Rights Reserved.

Discovery

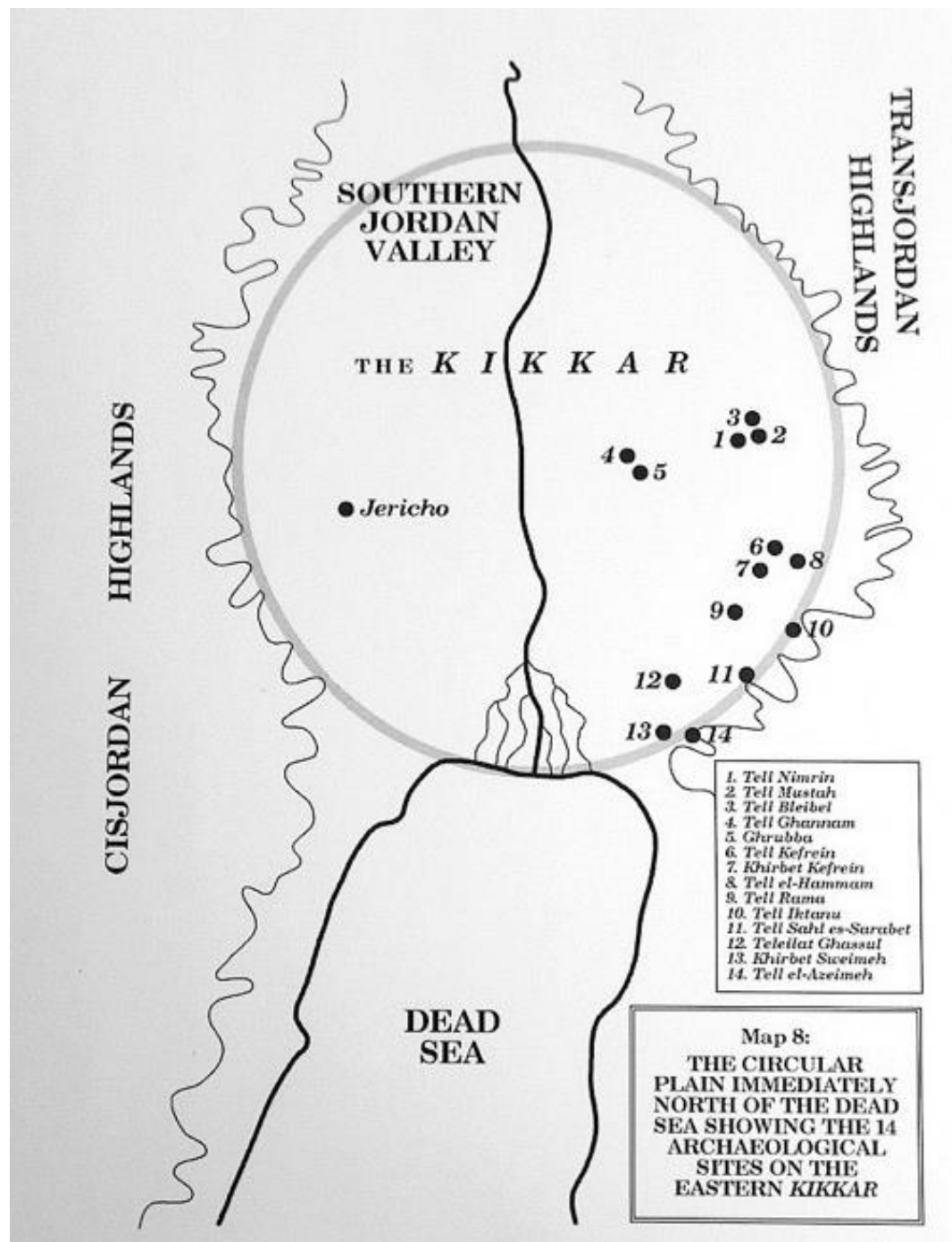
The famed biblical “cities of the plain” (Genesis 10; 13:10-13; 19) were once thought by critical scholars to be merely legendary places used by biblical authors to explain a moral metaphor. In 1924, William F. Albright set out to explore the southern end of the Dead Sea, looking for the city of Sodom. As a result, he posited that the city lay beneath the Dead Sea waters, since the water level must have risen over the centuries. Later investigations of the southern sea floor revealed that the waterline had indeed risen as Albright suspected; however, no ancient structures were found.



The stone and mud-brick ruins of Bab edh-Dhra (Jordan) located southeast of the Dead Sea.

Albright began to survey an area near the southeast shores of the Dead Sea in modern Jordan, the city of Bab edh-Dhra pictured here, which he dated to the Early Bronze Age (3150–2200 BC).

Bab edh-Dhra was later excavated, in the mid-1960s, by Paul Lapp and again in 1973 by Walter Rast and Thomas Schaub. Evidence shows this well-settled and fortified city was equipped with a massive cemetery, homes, building structures, monoliths, cultic structures—enough infrastructure to house a large number of inhabitants. The examination of the cumulative data has revealed that the city was destroyed by an enormous fire, which is confirmed by an extremely thick layer of ash present at the site. In view of these facts, many scholars (including Bryant Wood) have identified Bab edh-Dhra as the biblical city of Sodom.



(Photo courtesy of Tall el-Hammam Excavation Project [TeHeP].)

However, more recent ongoing research conducted by Dr. Steven Collins at the northeastern end of the Dead Sea region (in Jordan) has offered promising evidence supporting the northern location of Tall el-Hammam as the city of Sodom.¹

Background and Setting

Sodom and the other “cities of the plain” are referenced early within the table of nations (Genesis 10) and extend to the period of Abraham (Genesis 13; 19). Genesis 19:28 describes Sodom at the time of its destruction as existing in the “land of the valley [plain].” Collins argues for the location of Sodom based on 40 salient points about the geography of the cities of the southern Jordan valley. When referencing the biblical data, Collins noticed the word used for “plain,” or in some translations “valley,” is the Hebrew *kikkar*, which means “disk” or “circle.” The word is used in Old Testament Hebrew over 50 times to refer to “a talent of metal” or a “circular flat loaf of bread,” but none of these usages employ the definite article to convey a sense of location (geography).

However, there are 13 rare geographical usages of *kikkar* (found only in the Old Testament); 10 of these are found in the context of the Sodom story, which places the location of Sodom in the eastern disk of the southern Jordan valley (Genesis 13:1-12; immediately north of the Dead Sea).



Tall el-Hammam, southwest view of the upper tell surface. Photo copyright Joseph M. Holden, 2012.

Collins notes that there are many other standard Hebrew terms for “plain” and “valley,” but these are always avoided when the Bible speaks of the *kikkar* of the Jordan or the “cities of the *kikkar*.” From an aerial map looking down on the *kikkar* it reveals that Jericho resides at the western edge of the disk, southeast of Bethel/Ai, where Abraham was positioned when he saw the smoke rising from Sodom after its destruction (Genesis 13:3-4). Genesis tells of Lot separating from Abraham; Lot saw that the Jordan *kikkar* (valley) was well-watered, like the Lord’s garden and the land of Egypt (Genesis 13:10), so he travelled *east* and lived in the cities of the valley and pitched his tent near Sodom (Genesis 13:12). The Scriptures say that Lot viewed the entire Jordan disk with his naked eye, something that would be impossible when looking south toward Bab edh-Dhra. Moreover, Sodom was considered one of the cities of the plain, and no city south of the “mouth of the Jordan” (*hayarden*), like Bab edh-Dhra, would be considered as belonging to the cities of the *kikkar*. To include Bab edh-Dhra in the cities of the disk would force an unnatural meaning on the term *kikkar*. The “*kikkar* of the Jordan” appears to refer only to the disk-shaped alluvial plain directly east of Bethel/Ai and north of the Dead Sea; thus Sodom must be located on the eastern side of the Jordan disk. This conclusion is confirmed by Genesis 10:19, which describes the cities of the plain as the eastern extent of the Canaanite clans.

Collins has identified Sodom’s location as Tall el-Hammam, which is situated on the eastern edge of the Jordan disk, eight miles northeast of the mouth of the Jordan (*hayarden*). It is the largest tell in the southern Levant, measuring 1,000 meters long and containing within its walls nearly 90 acres, a much smaller area than the general occupational spread beyond the walls of 240 acres. The tell itself is comprised of a massive upper and lower area that most likely dates to the Early Bronze Age. The enormous size of the area was anticipated since 1) it is represented by the Bible to be the

largest Bronze Age urban center in the eastern *kikkar*, much larger than Jericho, Jerusalem, and any other city in the southern Jordan valley; 2) it is the only *kikkar* city mentioned by itself; 3) King Bera of Sodom is the only spokesperson within the military coalition formed by the cities of the plain (Genesis 14:17-24); 4) Lot was accustomed to sitting in the gates of the city (Genesis 19:1), thus implying defensive fortification; 5) it was situated in close proximity to a major east-west trade route; 6) it had access to abundant fresh water and rich agricultural soil; 7) it had excellent sight lines into the Jordan valley; and 8) it is always mentioned first when speaking of the eastern cities of the plain.



Tall el-Hammam is the largest tell in the southern Levant, with the upper tell alone measuring over 80 acres. (Photo courtesy of Tall el-Hammam Excavation Project [TeHeP].)

Some Confirmations of Tall el-Hammam as the Site of Sodom



Human remains discovered at Sodom in the Middle Bronze Age destruction layer. (Photo courtesy of Tall el-Hammam Excavation Project [TeHeP].)

In addition to other high-heat indicators unearthed at Tall el-Hammam such as the thick layer of ash and debris, charred human remains, and destruction debris, a 4.5-inch-long piece of a melted Middle Bronze Age storage jar was discovered. Its “frothy” and “glassy” melted appearance reveals that the sherd was briefly exposed to temperatures that exceeded 20,000° F. Additional melted sherds have been discovered at various locations across the site, indicating that the city was destroyed in a sudden, intense, high-heat catastrophic event. A similar “melting” phenomenon

resulting from brief high-heat exposure is found in the two small greenish pieces of Trinitite (or “desert glass”) taken from ground zero at the United States atomic weapon test area in New Mexico. Astoundingly, analysis of some soil and sand samples from Tall el-Hammam shows they possess qualities similar to Trinitite.

After eight seasons of excavation at the site, Collins has discovered several key indicators that confirm the city as Sodom.

First, an abrupt occupational gap of several centuries immediately after the Middle Bronze Age II (1800–1550 BC) offers a perfect fit for the timing of the destruction of Sodom. For some reason, the city was no longer inhabited, which appears strange since it was located on a major trade route, had freshwater springs, possessed fortifications, and was located close to the Jordan River. Sodom had location, location, location! However, during the time of Moses and Joshua (1400 BC) the eastern Jordan disk (“plains of Moab”) is called “the wasteland” below Pisgah (Numbers 21:20), which is consistent with the timing of its destruction and the lack of Late Bronze Age (1550–1200 BC) and Iron Age I (1200–1000 BC) material at the site.

Excavators at the tell, this author (Holden) being one of them, have noticed the transition from the Middle Bronze Age directly into the sudden appearance of occupation that begins in the tenth century BC (Iron Age II). An example of this abrupt transition can be seen in Field D on the upper tell. Our excavation team uncovered a massive Iron Age II defensive wall built over the Middle Bronze Age mud-brick fortification rampart. It appears the city lay in ruins for several centuries after the conflagration, until it was possibly rebuilt as one of the largest cities in the area under Solomon, as his administrative capital of the Gilead district (1 Kings 4:19).

Second, Tall el-Hammam contains a massive destruction and ash layer (one meter thick in some areas) distributed at various locations of the Middle Bronze Age layer of the city. The site reveals extensive destruction by fire of architectural features such as roofs, dwellings, walls, fortification barriers, as well as personal items such as jewelry, tools, and pottery. In addition to these, one of the most sobering and striking features involves human remains that depict catastrophic destruction. It appears that many of the inhabitants’ bones are charred and distorted, like those pictured, and are situated in a way that indicates a violent high-heat flash event that may have thrown inhabitants to the western side of their dwellings, showing that the destruction could have originated from the east.

Theories positing an earthquake, accompanied by natural gas and bitumen released into the air, as responsible for the destruction have been largely dismissed since the nature of the destruction is not consistent with architectural collapse or lurching, nor is there evidence of pressurized gas and bitumen in the northern Dead Sea area. Besides, if an earthquake were responsible, the city would have simply been rebuilt immediately, as any city at a prime location such as this would have been.

Third, in addition to the architectural destruction, distorted human remains, and pottery, environmental analysis of the site has revealed high-heat indicators that are consistent with the biblical description of Sodom’s fiery destruction. For example, one sample of Middle Bronze Age pottery had its surface transformed into glass. After visual and scientific testing of the shard, its transformation could only be explained by an extreme high-heat flash event; only a temperature of thousands of degrees Fahrenheit (much hotter than kilns of that day could heat pottery) could achieve such a process. Related to this, samples of area soil and sand have been examined. These samples give evidence of a high-heat event that was hot enough to turn desert sand into “desert

glass,” a phenomenon more associated with lightning, airbursts, or atomic explosions in the deserts of New Mexico than the once fertile Jordan River valley. Collins describes the high-heat catastrophic remains when he says,

The latest Middle Bronze Age layer at Tall el-Hammam consists of 1.5 to 3 feet of heavy ash and destruction debris. A fortified town was then built atop the upper tall in the tenth century B.C.E. All of Tall el-Hammam and associated eastern kikkar sites also lay in ruins for this same period of time—approximately seven centuries. The terminal destruction layer at Tall el-Hammam lies across both the upper and lower tall and consists of a matrix of heavy, dark ash mixed with fragments of pottery, mudbricks, a wide range of object fragments and human bone scatter. Numerous pottery fragments of this matrix lie across the site and have outside surfaces melted into glass, with some bubbled up like “frothy” magma, indicating they were burned in a flash heat event far exceeding 20,000 degrees Fahrenheit. The conflagration must have yielded extremely high heat and effected catastrophic damage.²

In support of these archaeological finds are the many geographical reasons why Tall el-Hammam fits the biblical account of Sodom. As mentioned, Dr. Steven Collins has compiled a massive assortment of geographical data, some of which is adapted in the chart below. (For a complete listing of Collins’s points, see appendix B, “Ascertaining the Geography of the Cities of the Plain: 40 Points.”)

Which Location of Sodom Accounts for the Biblical Geography of Genesis 13:1-12?		
Geographical Criterion	Bab edh-Dhra	Tall el-Hammam
Located on the <i>kikkar</i> of the Jordan River	No	Yes
Located on kikkar that is visible from Bethel/Ai	No	Yes
Located on the farthest edge of the Jordan disk (perhaps easternmost of <i>kikkar</i> cities)	No	Yes
In area watered like the Garden of Yahweh	Maybe	Yes
In area of <i>hayarden</i> watered like Egypt	No	Yes
In area of annual delta (<i>hayarden</i>) inundation (watered like Egypt)	No	Yes
In lands east of Canaan boundary	Yes	Yes
Accessed by traveling eastward from Bethel/Ai	No	Yes
Likely located on major east-west trade route	No	Yes*

From Steven Collins, “40 Salient Points on the Geography of the Cities of the Kikkar,” in *Biblical Research Bulletin*, vol. 7, no. 1: 5ff. Used by permission. *See Steven Collins and Latayne C. Scott, *Discovering the City of Sodom* (New York: Simon and Schuster/Howard Books, 2013).

Biblical Significance

Ancient writers in the Near East, whether they were writing myth or history, always used actual geographical markers familiar to them to adequately communicate their story. In the case of Tall el-Hammam, the geographical information appears to have exceeded the customary criteria needed to typically consider an ancient ruin a confirmed biblical city. Many existing biblical sites have been confirmed based on much less geographical evidence than that offered for Tall el-Hammam. Indeed, after reviewing the still-increasing amount of archaeological, biblical, and geographical evidence, if one denies that Tall el-Hammam is the biblical city of Sodom, every biblical city that has been confirmed on less than epigraphical evidence must be called into question.

The Tall el-Hammam location seems to possess everything needed to be consistent with the biblical data and the historical context of the Middle Bronze Age, including the following:

1. It is confirmed by Middle Bronze Age chronology based on pottery reading, stratigraphy, and architectural design;
2. It displays catastrophic destruction of infrastructure with high-heat indicators;
3. Pottery and human remains depict massive destruction with high-heat indicators;
4. It evidences an occupational hiatus for several centuries after its destruction as attested by Numbers 21:20 and absence of Late Bronze Age materials;
5. 40 points attest to Sodom's geographical location within the eastern *kikkar* (see appendix B, "Ascertaining the Geography of the Cities of the Plain: 40 Points");
6. At least a dozen ancient cities exist in close proximity, none of which are major urban centers in the eastern Jordan disk;
7. The enormous size of the tell fits with the biblical descriptions of the site as a massive urban city-state;
8. The mud-brick sloping fortifications (*glacis*) descending approximately 100 feet from the outer walls of the upper tell down to the surface of the lower tell match the biblical account of Sodom's gates;
9. It is located east of Bethel/Ai;
10. The site would be within view of Abraham while he was at or near Bethel, so he would have been able to see the smoke rising from Sodom after its destruction.



These sixth- to seventh-century AD ruins (located near the Dead Sea in Jordan) of a Byzantine monastery and church mark the traditional site of Lot's cave. Genesis 19:30-38 tells of Lot and his two daughters fleeing from Sodom to Zoar to escape Sodom's fiery destruction. Later, they moved to the hills, where they settled in a cave (entrance pictured far left). The Madaba Map lists the Church of St. Lot in this very location; several mosaic floors dating to the sixth and seventh century AD—some of which bear dedications to "St. Lot"—attest to this site as an early place of pilgrimage. Phot courtesy of Joseph M. Holden, all rights reserved.

Bab edh-Dhra does not appear to fit with the Middle Bronze Age dating or the geographical details mentioned in Scripture. The site is much too early (2600 BC) to fit with the Middle Bronze Age lives of Abraham and Lot.

Worthy of note is the fact that Sodom is the only *major* Bronze Age urban center mentioned in the Bible located on the eastern Jordan disk, and that Tall el-Hammam is the only major Bronze Age urban center on the eastern Jordan disk. There are a handful of other cities; however, they are much too small to be considered major urban centers by any means. In other words, Tall el-Hammam appears to be in the right place, in the right time, with the right stuff.

Notes:

1. Steven Collins, "40 Salient Points on the Geography of the Cities of the Kikkar," *Biblical Research Bulletin* VII:1, 5ff. Chart used by permission.
2. Steven Collins, "Where is Sodom?: The Case for Tall el-Hammam," *Biblical Archaeology Review*, March/April 2013.