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The Future of Archaeology:
Using Modern Technology to Uncover the Past

Of all three sites in the Madaba Plains Project, perhaps nowhere do modern technology and ancient history meet so successfully as at Tell Jalul. Randy Younker, the site’s director, and his team of archaeologists have been using the most up-to-date equipment to reconstruct a more complete picture of the past. As the dig at Jalul enters its second phase, the Madaba Plains Project team has just published a book, Madaba Plains Project: 60 Years, detailing the first phase of excavations at all three sites.

When Siegfried Horn first visited Jalul, he thought it might be the site of the biblical Heshbon, a city of the Amorite king Sihon and perhaps the location of the “pools of Heshbon” mentioned in Song of Solomon. Horn had begun excavating Tell Hishan in hopes of finding evidence of the biblical Heshbon, but after a few seasons didn’t discover the necessary evidence of a Late Bronze Age occupation from around 1400 BC.

Initial investigations and pottery analysis from Jalul revealed that the site contained sherds from the Late Bronze Age, from exactly the time Sihon would have occupied the city. By the time the digging permit came through in 1992, the archaeologists’ research objectives had broadened: they were interested in investigating not only the biblical history of the site, but also the history of the entire region. “Jalul is the biggest site in the region—it’s even bigger than Hishan—as we knew it had to be some sort of important site,” says Younker.

Younker, who was the junior leader of the Madaba Plains Project at the time, “took some people and a bit of the budget and began digging, in just a couple small fields.” Excavations at Tell Jalul have since—and in some cases, more than one of our major research sites,” says Younker. “We’ve been digging there almost every year since 1992; it’s a full-time, multi-disciplinary project.”

Very early on, the team discovered that Jalul had been occupied “fairly continuously from about 3000 BC until the Ottoman period, up until just about World War II,” which is about 5,000 years of history. Most of their findings are from the Iron Age and the Persian Period (1200–350 BC), although they have pottery and other artifacts from the Late Bronze Age (1550–1200 BC). “We know from the pottery and some inscriptions that the site was probably an Ammonite site by the 7th century,” says Younker. “We’re also finding a bit of Moabite pottery from the 8th century, which could come either from trade or residence in our site.”

But perhaps the most interesting find at Jalul is a series of interconnected pools that Younker and his colleagues believe may be the “pools of Heshbon” likened to the Beloved’s eyes in Song of Solomon. Within the walls of the city, the archaeologists found a vast reservoir possibly fed by artesian springs. Running from the reservoir to the outside of the city is a half-meter-wide channel, which Younker thinks was “probably done in the 7th century, after the reservoir was dug.” The channel drains into a series of four ancient ponds at progressively lower elevations. The Madaba Plain, as well as the city of Jalul, sits on top of a large aquifer, and at times there was more water than the city could use or the reservoir could hold—so they built this water channel. We think the water ran out of the city reservoir into the first pool, which is very large and today is being used as a soccer field.

The team is now trying to determine if the pools existed in the 10th century BC, when Song of Solomon was written. “If that’s the case,” says Younker, “could these be the pools of Heshbon the Bible talks about?” Jalul continued to be an important site throughout the Middle Ages, when Muslim traders would stop and water their livestock at the pools or visit the site on pilgrimage.

Younker and his team are documenting their findings with innovative technology, and bringing the digital age to the Bronze Age. The entire site is mapped with geographical information systems (GIS) software, which lets the team create 3D topographical maps and movies of the site. Each artifact the team digs up is also recorded with GPS; Younker says, “We can get accurate 3D data of everything on the field. If we find even a coin, we can get its exact longitude and latitude down to a resolution of about one centimeter.” Additionally, the team has a 3D scanner they use to scan potsherds, which are crucial to dating and determining the use of a site. Traditionally, potsherds have been recorded and pieced together by drawing and sometimes gluing. According to Younker, “we can make scans of each potsherd and theoretically reconstruct the whole pot, as well as make two-dimensional publishable plates,” with the scanner.

So far, only a handful of sites in the region are using this sort of technology. In an interesting confluence of history, the archaeologists at Tall Jalul and Hishan are beginning to make a paperless recording system for the artifacts they find. With the new 3D technology, images and information about a potsherd can be stored digitally and more accurately than in the traditional paper form. The team hopes in the future to be able to use 3D technology to reconstruct the ancient buildings.

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Where Culture and Theology Intersect

Leadership Around the World

Stan Patterson once asked a group of church leaders assembled in Russia, “Which takes precedence in determining our leadership practices, our theology or our culture?” The answer unequivocally came back, “culture.” Patterson was shocked. “I asked myself, how could mature Adventist people make a statement like that, especially when we have such a strong history of making the Bible our standard?”

But then he kept listening. The issue was highly emotional for the respondents, many of whom had grown up during the Soviet era. “Being Seventh-day Adventist in the Soviet Union generally meant you were from a minority group,” Patterson says. “Students of history will recall the widespread marginalization of minority groups in favor of a united Soviet state.” Their cultures were attacked by both the Soviet Union and the Orthodox Church to a degree where there was an attempt to obliterate their culture. The pain they experienced made it difficult for them to agree with the abstract statement, “My theology will determine my cultural separation and hierarchy within their church.”

Case studies like these have been the basis for the second phase of a global study conducted by Erich Baumgartner, professor of leadership and international communion, and Stan Patterson, associate professor of church ministry, Baumgartner and Patterson are interested in understanding how denominational leaders around the world view the responsibilities of leade-

ership—the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church. For example, leadership will be different in Peru, whose history includes a long tradition of more rigidly hierarchical leadership—the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church—than in the Incan culture, then the Spaniards and the Roman Catholic Church.

Recently, they have conducted two interrelated studies in global leadership needs. The first study was an ethnographic survey of power distance and servant leadership concepts in worldwide denominations. Their findings surprised them: they found that across the globe, the culture a denomination was situated in had an “enormous impact on local practice,” says Baumgartner. For example, high-power-distance cultures—defined as those that manifest greater distance between those in power and those farther down the ladder—also tend to reflect this separation and hierarchy within their church leadership styles.

“Many countries have a top-down hierarchical mentality,” say Patterson, citing a few examples of South American and African nations, “and they don’t even think about the fact that dominating leadership is a violation of the standard established by Jesus Christ for his church.”

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