# E-STRATA
# No. 2 (2020)

Photo: survey of the Northern Cliff of Nahal Hever, Judean Desert, Eitan Klein.

## Newsletter of the Anglo-Israel Archaeological Society

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## IN THIS ISSUE



Dear Friends,

As autumn peers towards winter, we are delighted to bring you *E-Strata* 2 for cosy days and nights indoors. Despite the New Old that continues to challenge the world, including excavations in Israel, archaeologists, historians and museum curators are still weaving a rich tapestry to re-write and re-address what we know about the ancient Near East. So we're able to share 16 pages of news.

And the floodgates continue to give. As we go to press, an 8th or 7th century BCE 'palace' has turned up in the East Talpiot district of Jerusalem with perfectly preserved stone column capitals. The first cluster of deep-sea shipwrecks off Israel has beeen discovered in the Leviathan gas field, dating back to the Late Bronze Age. A hoard of 425 golden Abbasid coins from the 9th century are gleaming in an undisclosed location in central Israel. May the discoveries continue on land, sea and library shelves.

*E-Strata* is fortunate to have caught up with Dr Eitan Klein, a committee member of the Anglo-Israel Archaeological Society. Eitan is the Deputy Director of the Antiquities Theft Prevention Unit at the Israel Antiquities Authority and lifts the lid on the struggle to contain site looting and talks about his latest work with the Judean Desert Caves Project.

Its an absolute pleasure to share an extract from the late Nick Slope's *Archaeological Memoirs from the Holy Land* published by Incitatus Books (www.incitatusbooks.uk). Nick was a long-time, greatly cherished committee member of AIAS and my precedessor as Honorary Secretary. As well as being a first-rate field archaeologist and scholar with far-reaching interests, Nick had a wonderful sense of humour. High jinx rolls off his memoirs and we are extremely grateful to his daughter, Dr Rowena Slope, for allowing us to repdoduce an extract from his book. All proceeds from its sale go to charity, incuding travel grants for our Society.

Finally, Tessa Rajak, Anthony Rabin and Sheila Ford have been burning the candle so we can keep on sharing tales from Israel and the Near East. Details of forthcoming Zoom talks can be found on Page 31.

We hope you enjoy. The very warmest wishes and appreciation to everyone for your ongoing support.

***Sean Kingsley, E-Strata Editor, AIAS Honorary Secretary***

# IN THE NEWS

## QESEM'S PREHISTORIC STONES MYSTERY

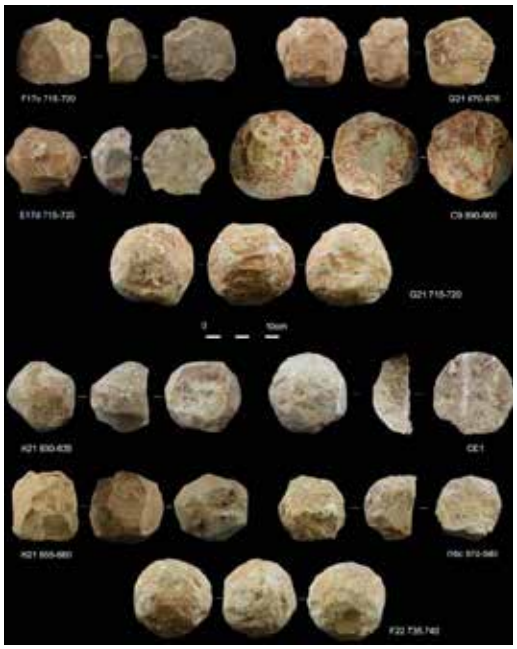
*Archaeologists from Tel Aviv University excavating the Qesem Cave. Photo: courtesy of Ella Assaf.*

*View from the Natufian Raqefet Cave. Photo: Dani Nadel.*

An international team of researchers led by Ella Assaf of Tel Aviv University has tackled anew the meaning behind mysterious stone spheres unearthed in central Israel's Qesem Cave. Based on microscopic analysis revealing wear and tear on the artefacts' ridges, as well as residues of fat, collagen and bone, it is now believed they were designed to break open large animal bones and extract their nutritious high-calorie marrow. Intriguingly, the cave dwellers seemingly collected the spherical stones from an older site for reuse. Most similar examples found in the Middle East were typically used 1.4 million to 500,000 years ago. The Qesem Cave, by contrast, was inhabited 400,000 to 200,000 years ago.

These stone balls, around 10 centimetres in diameter, were made of dolomite or limestone, which is not local to the area, and were found covered with a patina differing to other tools in the cave, which suggests the spheres were 'imported' from other environments over a long period of time. "In Qesem we see a regular pattern of collecting stuff from outside the cave and reusing it," said Ella Assaf from the Institute of Archaeology at Tel Aviv University.

Team member Javier Baena from Madrid's Unversidad Autonoma experimented with modern versions of the stone balls to test on modern animals with Jordi Rosell from The Catalan Institute of Human Paleoecology and Social Evolution in Tarragona. The recreated spheres were used to break open fresh animal bones. Although the experiment reproduced the marks found on the prehistoric tools, the stones turned out to be surprisingly tricky to craft. According to Assaf, "Javier can knap with his eyes closed, but he still struggled… One little mistake and the sphere can break in half, or you can keep fixing the ridges and end up with a very tiny, useless ball." Recycling ancient tools from older sites thus made practical sense,.



*Shaped stone balls used for bone marrow extraction in the Lower Paleolithic Qesem Cave, Israel. Photo: Dr Isabella Caricola.*

Stone balls found in early Palaeolithic sites have attracted attention since the pioneering work of the Leakeys in Tanzania's Olduvai Gorge. Leakey argued that the balls were primitive *bolas* used to

hunt animals. Other scientists favoured the idea they were projectiles, hammer stones or grinding tools. Similar finds have turned up across Eurasia from the Middle East to China and India. Excavations in Qesem Cave, directed by Avi Gopher and Ran Barkai, have revealed thousands of flint tools and animal bones as well a 13 hominid teeth belonging to the as-yet unidentified inhabitants. Modern Israel knows the site as Magic Cave.

*Source: E. Assaf, I. Caricola, A. Gopher, J. Rosell, R. Blasco and O. Bar, 'Shaped Stone Balls were Used for Bone Marrow Extraction at Lower Paleolithic Qesem Cave, Israel', PLoS ONE 15.4. (2020); Archaeology Magazine, 15 April 2020; Haaretz, 16 April 2020.*

## STONE AGE SURF 'N' TURF IN THE JORDAN VALLEY

*Excavating the Epipalaeolithic site of Jordan River Dureijat, Israel. Photo: Gonen Sharon.*

With much of the globe shivering under belting Ice Age wind and snow, over 15,000 years ago a band of nomads enjoyed a sure-fire source of rich food – above and below the water – in Israel's Upper Jordan Valley. The Hula lake's natural bounty was so enticing that prehistoric groups made regular trips to the shores of Dureijat, surrounded by wild almond, oak and barley, over 10,000 years.

Beneath the ancient mudbanks, a team led by Professor Gonen Sharon from Tel-Hai College in Israel, in a project of more than 20 academic institutions from Israel to the USA, Italy, Iceland and Spain, uncovered an expected array of flint, limestone, basalt and quartz tools. Buried bones point to a landscape rich in cows, deer, turtles, rodents, birds and snakes. The hunter-gatherers harvested molluscs to turn shells into tools, ornaments and beads.

The lakesiders were also specialist fishermen. Bones from abundant marine life, some with signs of being cooked through, were caught using remarkably modern-looking fishing hooks and net-sinkers. The fishermen's knowledge became more sophisticated over time until "they knew which hooks and instruments were more fit to capture different species of fish," Professor Sharon said.

The ancient shore turned out to be littered with limestone rocks used as fishing line weights or net sinkers – at over a thousand, the largest collection in the Levant. Between 21,514 and 12,150 Before Present, their technology changed from simple imported rough cobbles of similar size and weight to notched sinkers adapt-ed to better hold a net line.

*Excavating the muddy Jordan River Dureijat site, Israel. Photo: courtesy of Gonen Sharon.*

Later, 14,960 years Before Present, sophisticated bone fishhooks appeared in the Natufian levels, which "demonstrate a high level of knowledge, dexterity, and sophistication," the project's 2020 *PaleoAnthropology* journal report

concluded. Each hook is unique in shape, size and design and would have been tied to a fine rope for line fishing. The freshwater fare ranged from catfish and trout to tilapia and giant carp, some 2.5 metres long. Dureijat's multiple fishing strategies included, at minimum, line, hook and net fishing.

Another part of this revolution in feasting was an endless supply of giant freshwater Unio mussel shells. Prof. Sharon told *Wreckwatch* magazine he is "convinced they were eaten: they are easy to collect, have high nutrition values and we know people still eat them today or turn them into sauce. For now, we're missing a smoking gun for clear consumption of clams… we are working on that."

The excavations have sent a ripple of excitement through prehistory, a field where researchers usually only get to explore sites where ancient people lived, typically caves and buildings. "The opportunity to understand more about what they were doing when they were outside their dwellings is very rare," Gonen Sharon points out. "This spot provides us with insights on what they did when they fished, hunted and even barbecued."

*Right: bone fish hook from Jordan River Dureijat, Israel. Photo: courtesy of Gonen Sharon.*

*Below: limestone net sinkers from Jordan River Dureijat, Israel. Photo: courtesy of Gonen Sharon.*

Many mysteries wait to be solved. Were the hunter-gatherer trips seasonal or lasted for a few years or more? And where did the tribes live? In the Natufian period (14,960 to 12,150 BP), a large village sprung up 9 kilometres to the northwest at Eynan with stone houses and very rich cultural remains.

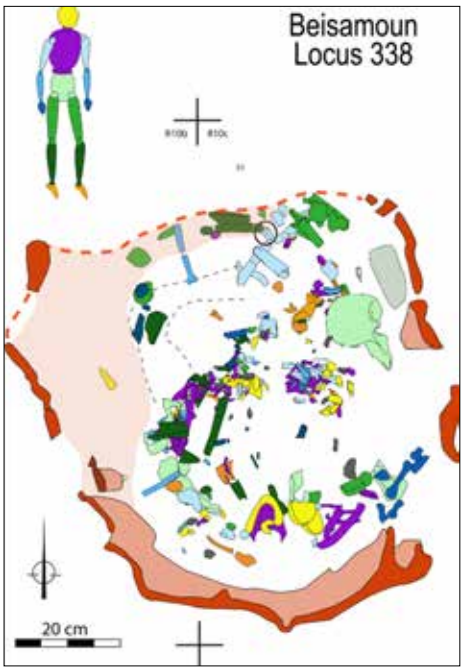
What is for sure, as Prof. Sharon told Wreckwatch, "the Hula valley saw one of the most significant processes in human history, the shift form small bands of nomads hunter gatherers to the large sedentary communities of the agriculture Neolithic." The superb preservation of organic and botanic remains at Dureijat holds every chance of unlocking the unknown.

*Source: Wreckwatch Magazine 1-2 (September, 2020).*

## EARLIEST NEAR EASTERN CREMATION

The oldest human intentionally cremated in the Near East has been dug up in the Neolithic village of Beisamoun in the Upper Jordan Valley. A U-shaped grave, 80 by 60 centimetres, was lined with reddish mud plaster once used as a pyre-pit to make bricks for houses. Radiocarbon dating of a fibula places the person in the Pre-Pottery Neolithic C, between 7031 and 6700 BCE. Until now, the earliest cremation in the Near East dated to the sixth millennium.

The burial pit in which the deceased, of unknown sex, was uncovered contained 355 bone fragments, many scorched, said the project's lead researcher, Fanny Bocquentin from


*Left: skeletal remains in a U-shaped grave in the Neolithic village of Beisamoun in the Upper Jordan Valley. Below left: spatial distribution of the right and left sides of the skeleton as found in the grave. Photos: courtesy of the Beisamoun Project.*

France's National Centre for Scientific Research. The young adult had suffered a major injury: a 0.5-inch-long flint projectile was still embedded in the left shoulder bone, a trauma which seemingly tore the muscle and caused "severe pain but not necessarily impaired function," the researchers concluded. The bone had started to heal, showing how the individual survived the injury for at least several weeks or months before succumbing to some unknown other cause.

Another 33 burials have been identified in Beisamoun, including 18 adults, three youngsters and 12 infants, ranging from single to double graves in primary and secondary burials.

The study is a joint collaboration between the French Ministry for Europe and Foreign Affairs and the Israel Antiquities Authority.

*Source: F. Bocquentin et al., 'Emergence of Corpse Cremation During the Pre-Pottery Neolithic of the Southern Levant: a Multidisciplinary Study of a Pyre-pit Burial', PlosOne, 12.8.20; L. Geggel, 'Oldest Human Cremation in the Near East Unearthed', LiveScience 12.8.20.*

## MAKING MODERN IN THE NEOLITHIC

About 9,000 years ago, Atlit Yam was home to a vibrant village with houses and a mini-henge for worship. Atlit was inundated by rising seawater around 8,000 years BP. Today it lies 500 metres off Israel, due west of the Carmel Caves. A number of circular installations have now proven to have been made of heated mudbricks – before the introduction of pottery.

A Department of Maritime Civilizations and Zinman Institute of Archaeology at the University of Haifa study with the Israel Antiquities Authority analysed mudbricks from Pre-Pottery Neolithic C Atlit-Yam and Bene Beraq, the submerged late Pottery Neolithic/ Early Chalcolithic site of Neve Yam and coastal 'Ein Asawir to understand how prehistoric populations in Israel adapted to sedentary lifestyles.

"In the Neolithic period, we start seeing the first sedentary settlements and the appearance of bricks is deeply connected to this phenomenon," said Isaac Ogloblin Ramírez, a PhD student and lead author of a paper recently published in the *Journal of Archaeological Science*. "This is the first time we have discovered evidence that mud bricks in the pre-pottery Neolithic sites were heated," Ogloblin stressed. "We found the bricks in circular concentrations, which we believe were related to some form of use of fire, like an oven. Atlit Yam is the only site where we found evidence that heated mud bricks may have been used to build a wall."

The oldest bricks were oval in shape, measuring up to 40 x 38 centimetres, while the most recent were 30 x 50 x 10 centimetre semi-rectangular forms. The development of pyro-technologies allowed these functional building materials to survive for millennia under the sea.

*Source: I. Ogloblin Ramirez, E. Galili, R. Be'eri and D. Golan, 'Heated Mud Bricks in Submerged and Coastal Southern Levant Pre-Pottery Neolithic C and Late Pottery Neolithic/Early Chalcolithic Settlements: Diachronic Changes in Technology and their Social Implications', Journal of Archaeological Science 30 (2020); R. Tercatin, 'Underwater Bricks Show Skills of Prehistoric Inhabitants of Israel', Jerusalem Post, 29.7.20.*

## CANAANITE NEAR EAST: OUT OF CAUCASUS

A new interdisciplinary study is shedding new light on the origins of the Canaanites. A genome-wide analysis of ancient DNA samples from 93 individuals in nine Bronze Age Canaanite sites across the Levant has revealed that the widely dispersed Canaanites remained a demographically coherent group over thousands of years.

The study discovered that the Canaanites shared a genetic relationship with a group of people who slowly and continuously migrated from the Caucasus and/or Zagros Mountain regions. The researchers suggest that this special genetic mix of Canaanite and mountain peoples can still be seen in some modern Arabic-speaking and Jewish populations.

"Our results in this new study show that the 'Canaanite' term that is known from the archaeological and historical literature in fact corresponded to a genetically mostly homogeneous group of people — it was not just a shared set of ideas, but a people of similar ancestry," argues Harvard University Ancient Genetics professor David Reich.

Prof. Liran Carmel, a DNA specialist from the Hebrew University, said that Bronze Age populations in the Southern Levant — today's Israel, Jordan, Lebanon, and parts of Syria —were not static between *c.* 3500 and 1150 BCE. "Rather, we observe evidence for the movement of people over long periods of time from the northeast of the Ancient Near East, including modern Georgia, Armenia and Azerbaijan, into the Southern Levant region," he stressed. Despite this movement, "The Canaanites, albeit living in different city-states, were culturally and genetically similar."

The migration from the Caucasus/Zagros into the Levant took place between 8,000 and 3,500 years ago and possibly later. Once in the Levant, the newcomers did not remain as an independent and distinct group but merged with the local populations.

Israel Finkelstein sees further signs of Hurrian influence – a language spoken in the northeast of the ancient Near East, possibly including the Caucasus – in sites like Khirbet Kerak. Later in the second millennium, Hurrian names of local rulers appear, such as Biridiya, the ruler of the city-state of Megiddo, who is mentioned in the 14th century BCE Amarna tablets.

The study was led by an international team, including biological anthropologist Ron Pinhasi from the University of Vienna, geneticist Shai Carmi from the Hebrew University, Tel Aviv University archaeologist Israel Finkelstein, Liran Carmel from the Hebrew University's Carmel and David Reich.

*Source: A. Borschel-Dan, 'How the Canaanites, Biblical Frenemies of the Israelites, Kept Genetic Integrity', Times of Israel 28.5.20; 'Who Were the Canaanites? New insight from 73 Ancient Genomes', Phys.org, 28.5.20.*

## HOW GREAT WERE ISRAEL'S 10TH-CENTURY BORDERS?

An ancient Hebrew inscription found on a wine jar potsherd at Abel Beth Maacah near Metulla has reopened the debate about the size of the Israelite kingdom. The ostraca, reading "Belongs to Benayau" (a derivation of the later Benayahu), has led some experts to rethink their views about the territory of ancient Israel. The biblical Abel Beth Maacah is located just south of Israel's border with Lebanon near Metula. Whereas the pot has been dated to the 10th-9th centuries BCE, the Kingdom of Israel was previously not thought to stretch so far north.

Abel Beth Maacah is mentioned three times in the Bible. One narrative describes how a wise woman saved the town when a rebel fighting King David fled there (2 Samuel 20). Twice the Bible cites military conquests, one by the Aramean Ben Hadad in the 9th century BCE (1 Kings 15:20) and another by the Assyrian Tiglath Pilesar III in the 8th century BCE (2 Kings 15:29). The site crops up in several second-millennium BCE sources, such as the list of Thutmosis III.

In the 10th century, Abel Beth Maacah lay in borderlands between three regional powers: the Aramean kingdom based in Damascus to the east, the Phoenician city of Tyre to the west and the Israelite kingdom with its capital in Samaria to the south. Archaeologists had previously accepted that this area was largely barren during the 10th-9th centuries BCE and was only absorbed into the Israelite realm in the 8th century BCE.

"If the inscription is from the 8th century BCE, then it's still important but not a big surprise, because we know that during that period, the Kingdom of Israel reached until Dan," said Dr Eran Arie, curator of the Iron Age and Persian Period at the Israel Museum. "But if it's really from the 9th century BCE, it reopens questions on the connection of this area to Israel and may force us to rethink some of our conclusions."

"The allegiance of the city and the identity of the population in the 10th-9th centuries BCE are a big debate," said Dr Naama Yahalom-Mack of the Hebrew University, one of the excavation directors. "What was their connection to Israel? Were the religion, the language, and the culture the same as in Israel? We are looking for evidence of Abel belonging politically to one entity or another, while it is also possible that it was an independent city-state."

"This inscription could be evidence that the city's administration was in the hands of people who spoke Hebrew with Yahwistic names," Yahalom-Mack suggests. "It was found in a warehouse that apparently belonged to a local and he had a Yahwistic, Israelite name: this can give us a hint as to who this city belonged to during this time."

One clay jar with a Hebrew word does not necessarily prove the town was Israelite. Researchers are now hoping to identify the origin of the clay from which the pot was made to better understand whether it came from down south or was fired locally.

*Source: Tel Abel Beth Maacah website, Hebrew University of Jerusalem; The Times of Israel, 10 January 2020.*

*Left: Aerial view of Moza on the outskirts of Jerusalem. Photo: Pascal Partouch (SkyView), courtesy of the Israel Antiquities Authority. Right: cult male figurine head from Moza. Photo: Clara Amit, Israel Antiquities Authority.*

*Left: excavating at Moza. Photo: Shua Kisilevitz, © Moza Expedition Project. Right: cult figurine of a horse & rider from Moza. Photo: Clara Amit, Israel Antiquities Authority.*

## JERUSALEM'S BRANCH TEMPLE AT MOZA

From the same era when the First Temple of Jerusalem dominated the Land of Israel, archaeologists have discovered another massive Judahite sanctuary near the royal capital. Amazingly, the new temple (20 x 13 metres) that has come to light at Moza in ancient Judah dates to the iconic late 10th or early 9th century BCE. It was built just 4 miles from and virtually in sight of the heart of Jerusalem and, according to the team from Tel Aviv University and the Israel Antiquities Authority, must have been sanctioned by Jerusalem's administration. Solomon's Temple, archaeology now shows, was not the only sacred place of centralized worship. The new temple is bothy contemporary with the First Temple and replicated its architectural plan.

Moza's temple complex, first dscovered by the Israel Antiquities Authority in 2012, welcomed worshippers from aound 900 BCE into the early 6th century BCE. In layout it was about two-thirds the size of the capital's First Temple. Because of the new sanctuary's proximity to Jerusalem, the excavation's principal researchers, Shua Kisilevitz and Oded Lipschits from Tel Aviv University's Sonia and Marco Nadler Institute of Archaeology, believe it

must have been approved by the administration of the main branch in Jerusalem. "You could not have built a major monumental temple so close to Jerusalem without it being sanctioned by the ruling polity," said Kisilevitz.

An altar found in the Moza courtyard, directly in front of the building's entrance, is another known similarity. "A temple is not a place that worshipers entered; rather, they gathered in the courtyard. That's where we expect to see remains of activity," Kisilevitz reported.

*The Moza Project excavation team. Photo: David Moulis, © Moza Expedition Project.*

The remains of worship include a stone-built offering table, figurines, cult stands and chalices. Another revealing clue is a nearby refuse pit, where the team discovered bone and pottery remains. The pit was used like a geniza for sacred texts. "Anything that you use in a temple, the animals or the vessels, is imbued with religious symbolism and becomes sacred on its own when used in religious rituals," Kisilevitz explained. "So they can't be discarded; rather they are deposited in the sacred terminus."

The four figurines, two human-like and two horses, discovered by the Tel Moza Expedition Project (with participants from Tel Aviv University and Charles University in Prague), may point to the temple being used for the worship a variety of gods, not just Yahweh as was the high-profile case in Jerusalem. The Bible records two religious reforms enacted by King Hezekiah and King Josiah in the late 8th and late 7th centuries BCE to stamp out cultic activity outside the capital. Moza confirms a more open religious reality on the ground before then.

Agricultural production and emerging social stratification made Tel Moza economically and administratively important to the region, a royal granary feeding Jerusalem as early as the late 10th century BCE. A link between economic subsistence, production and the rise of religious elites during the Iron IIA period has been identified at several other sites across Israel.

"Despite the biblical narratives describing Hezekiah's and Josiah's reforms, there were sanctioned temples in Judah in addition to the official temple in Jerusalem," Kisilevitz and Lipschits argue. Two more seasons of excavations are planned for 2020 and 2021.

*Source: Tel Moza Expedition project website; Biblical Archaeology Society, 23 December 2019; The Times of Israel, 3 February 2020.*

## FACE OF GOD SHINES FORTH?

Khirbet Qeiyafa is the gift that keeps on giving. Prof. Yossi Garfinkel's high-profile excavations explored 60 rooms across the site, all covered by a rich destruction layer, as well as three cult rooms stuffed with paraphernalia.

But Qeiyafa was home to just one humble clay figurine unearthed among tons of the early 10th-century BCE fortified city's soils. The male figure, found in a large building in the high central part of the city, has protruding eyes, faded signs of a beard and his ears were possibly once pierced. Around the top of the head is a circle of

enigmatic holes, either a lost crown or headdress. The head was once attached to another object thought to have been a horse.

At just 2 inches in height, the find is making a big noise. Based partly on two similar clay heads unearthed near horse figurines in the temple complex at Tel Moza, 9 kilometres north-west of Jerusalem, Prof. Garfinkel believes his find is no less a vision than the face of the biblical god Yahweh. The backdrop of the horsemen god figures in the Moza temple complex, not in domestic homes, discounts them as simple household deities.

The discovery of just one clay god at Qeiyafa seems to fit with the biblical narrative. As Prof. Garfinkel summarizes, where neighbouring peoples worshipped a pantheon of gods, "the Kingdom of Judah was a different story and based on two concepts - that there is only one god and not many, and that you shouldn't make a statute, a graven image of it." Whereas the Canaanite supreme god El was a Zeus-like figure often seen in art grasping a sceptre, the god riding a horse is unlike all other gods and "a totally different iconography… something new".

*Head of a clay figurine of a human male from Khirbet Qeiyafa. Photo: Clara Amit, Israel Antquities Authority.*

Yahweh has a familiar association with horses in the Old Testament as either he "who rides across the heavens to help you" (Deuteronomy 33:26) and the "chariots and horsemen of Israel" seen in a vision by the prophet Elijah and Elisha as "My father! My father" in a chariot and horses of fire (2 Kings 2:11-12). King Josiah also famously "removed from the entrance to the temple of the Lord the horses that the kings of Judah had dedicated to the sun" (2 Kings 23:11).

Compared to the art of Bronze Age Canaan and Egypt, Judah's divine image is distinctly crude. Prof. Garfinkel points out that whereas Egypt and Mesopotamia were rich kingdoms brimming with court artists, the kingdom of Judah was small and poor with a population of just 5,000-20,000 people at its peak, set amidst a small 30-kilometre patch of arable land between Beit Shemesh and Lachish. "The Kingdom of Judah left a great intellectual contribution," Garfinkel said, but barely a mark in material culture.

Despite the Ten Commandments strictly prohibiting making graven images like those of Moza and Qeiyafa, the extensive discovery of figurines across 8th-6th century BCE Israel points to a very different reality on the ground than the image of strong-armed high priests and kings enforcing one will.

*Source: Y. Gafinkel, 'The Face of Yahweh?', Biblical Archaeological Review 46.4 (2020); A. Borschel-Dan, 'Face of God? Archaeologist Claims to find 10th Cent. BCE Graven Images of Yahweh', Times of Israel, 31.7.20.*

## SAMARIA'S POTSHERD SCRIBES GO HI-TECH

A Tel Aviv University study of paleo-Hebrew ostraca potsherds recording the delivery of Samarian wine and olive oil from the countryside to Nablus in the 8th century BCE is using handwriting analysis to illuminate bureaucratic apparatus in biblical Israel.

To work out how many hands wrote the ancient texts, the team used an algorithm linked to image processing technology and machine-learning techniques. "To the best of our knowledge, this is the first attempt to estimate the most likely number of writers at Samaria, or any other ancient corpus, via classical paleographic or computational means," the study's authors write.

New analysis of the Samaria Ostraca has led the team of mathematicians, physicists and archaeologists from the Tel Aviv University School of Mathematical Sciences and archaeologist Professor Israel Finkelstein to conclude that writing in the 8th century BCE was strictly limited in the number of scribes and bureaucratic centres controlled by the powerful Northern Kingdom. "Our results, accompanied by other pieces of evidence, seem to indicate a limited dispersion of literacy in Israel in the early eighth century BCE," said physicist Piasetzky.

The Samaria Ostraca consist of 102 pieces of pottery housed in Istanbul Archaeology Museum. The words incised onto the 8th-century BCE sherds, found in Nablus during George Reisner's fieldwork for Harvard in 1910, record commodities, jar contents, where they came from, names and when they were brought to the ancient city. Examples read, for instance, "In the year ni[ne] from Az[…]t Par'an to Shemaryau jar of aged wine" and "In the year ten from Hazeroth to Gaddiyau jar of bath oil." The goods were dispatched from villages or royal estates in the highlands around the capital.

The Tel Aviv University algorithm first restored characters on the grayscale images of the ostraca using a computerized semi-automatic reconstruction procedure. Then the characters' features were reconstructed, such as their overall shape and the angles between strokes. Finally, the probability of whether any inscriptions were written by the same author was tested.

The research found that just two scribes wrote the 39 Samaria inscriptions sampled. "If only two scribes wrote the examined Samaria texts contemporaneously and both were located in Samaria rather than in the countryside, this would indicate a palace bureaucracy at the peak of the kingdom of Israel's prosperity," Finkelstein proposed.

The Samaria Ostraca differ from the results of a 2016 study of the Arad ostraca collection, among which four to six hands were identified, leading to the conclusion that literacy was relatively widespread by the 6th century BCE. The new Samaria study presents a different reality two centuries earlier, when "we observe just two scribes within the large Samaria ink ostraca corpus of the flourishing Northern Kingdom's capital, with very little supporting evidence of writing skills from other sites in the realm. This may hint that during this period literacy was, to some extent, restricted to the royal court."

*Source: S. Faigenbaum-Golovin, A. Shaus, B. Sober, E. Turkel, E. Piasetzky and I. Finkelstein, 'Algorithmic Handwriting Analysis of the Samaria Inscriptions Illuminates Bureaucratic Apparatus in Biblical Israel', PLoS ONE 15.1 (2020); The Times of Israel, 2 January 2020.*

*Left: the function of colossal stone mounds as at Arnona, Jerusalem, have long been an archaeological mystery. Photo: Yaniv Berman, Israel Antquities Authority.*

*Below left: Israel Antquities Authority excavations at Arnona uncovered a 2,700-year-old administrative complex. Photo: Yaniv Berman, Israel Antquities Authority.*

## BIBLICAL ROYAL MOUNDS OR MOUNT ASSES?

Around 19 colossal mounds of earth and stone as high as six-story buildings ringing southwestern Jerusalem have confounded explorers for over a century. So much so that they became affectionately known as Har Hatachat, Mount Ass.

The mounds are clustered across a few square kilometres, mostly on a ridge overlooking the biblical Valley of Rephaim. "Their concentration in a very specific area and the huge effort required to raise them makes it very unlikely that these were just garbage dumps or heaps of stones cleared from agricultural fields," said Yuval Baruch, the Israel Antiquities Authority's chief archaeologist for Jerusalem. "But the question of why they were built remains."

In 1953 Ruth Amiran surveyed several mounds and completely excavated one near Kiryat Menachem where the tumulus covered a retaining ring wall intercut by a flight of steps. The steps led to a platform full of burnt remains and animal bones. The pottery was thought to be typical of the Kingdom of Judah in the late 8th and 7th centuries BCE. To Amiran, the mounds must have been biblical *bamot*, high places, perched on hilltops for local worship and supposedly destroyed during the iron-fist religious reforms enforced by King Hezekiah and Josiah. Thereafter, cultic practices were centralised in the Temple in Jerusalem – one place, one God.

Later fine-tuning of the mounds' chronologies makes the image of sites of pagan worship being 'cancelled' in a Jerusalem religious power play unlikely.

Three years of IAA excavations in Arnona have now shed greater light on an Early Iron Age urban phenomenon that has been making donkeys of explorers for too long. Beneath the sealed rubble of the 20-metre-high remains covering 7,000 square metres, a 2,700-year-old building and stamped jar handles point to the site probably being linked

*Israel Antquities Authority excavations below the giant stone mound at Arnona, Jerusalem. Photo: Yaniv Berman, Israel Antquities Authority.*

to the administration of the Kingdom of Judah in the First Temple period under kings Hezekiah and Manasseh.

The results suggest not the presence of a high place, but an administrative storage centre. Within an unusually large structure built of concentric ashlars walls were uncovered 120 jar handles stamped with Hebrew 'LMLK' (Belonging to the King) next to a sun disk and two wings, as well as the names of the cities of Hebron, Ziph, Socho or Mmst and senior officials or wealthy individuals – one of the largest collections of seal impressions excavated in Israel. Other conspicuous finds include a collection of clay figurines in the form of women, horse riders and animals, calling cards of folk or pagan worship in Judah.

What these mounds were designed for makes best sense viewed within their regional contexts. All seem to be hubs of agricultural production and administration ringed by large wine presses, agricultural estates that arose during the decades of rising population and prosperity in Judah at end of the 8th century BCE. Could the giant mounds be expressions of a boom in wine production, where taxes were channelled in Jerusalem's 'Chianti region'?

While science now has the names of the owners and bean counters running mounds like Arnona – Naham Abdi, Naham Hatzlihu, Meshalem Elnatan, Zafan Abmetz, Shaneah Azaria, Shalem Acha and Shivna Shachar – who they were waits to be proven. They may have been local magnates or even a guild of the Cohanim priests serving the Temple in Jerusalem.

The stone mounds seem to have become sealed in the early 7th century BCE, the years of Assyrian conquest under King Sennacherib and in the reign of King Hezekiah. Even today the colossal piles of rock stand out from the surrounding hills and are visible from a great distance. Covering the sites would have needed the equivalent of hundreds of modern truck loads of spoil. "Whoever built this wanted to see and be seen, to project strength, especially to people who came from the countryside," says Neria Sapir, the IAA archaeologist who led the dig. "They wanted to show: 'I am here'."

*Source: 'Significant 2700-year-old Administrative Storage Center Uncovered in Jerusalem', Israel Ministry of Foreign Affairs, 22.7.20; A. David, 'Mysterious Giant Mounds in Jerusalem Baffle Archaeologists', Haaretz, 13.8.20.*

## JERUSALEM'S ADONIYAHU BULLA

Yet another tiny clay bulla seal impression has been excavated in Jerusalem. It came to light during the City of David's sifting project from fill removed beneath Robinson's Arch on the Temple Mount's southwestern corner. Two lines of paleo-Hebrew script read, "Belonging to Adoniyahu, who is over the house". The text is taken to mean "Belonging to Adoniyahu, the Royal Steward." The title was used in antiquity for the high-

est-level minister in the royal court, stretching all the way back to the Book of Genesis for Joseph's high-powered position in Egypt.

The one-centimetre find may be small, but it's significance is considered great. The name Adoniyahu ('my lord is Yahu/Yahweh') appears in the Bible most famously as the name of one of King David's sons in 1 Kings 1-2. It is also the name of a Levite from King Jehoshaphat's time and one of Nehemiah's contemporaries.

Since the bulla dates to the 7th century BCE, it cannot be connected with any of these biblical figures, who lived in the 10th, 9th and 5th centuries BCE respectively. Instead, it sheds light on an important steward living in ancient Judah who continued a popular Judahite name. Now archaeology has not just the royal steward's name, but also his signature.

*Source: Times of Israel, 9 September 2019; Biblical Archaeology Review, 46.1, January/ February 2020.*

## JERUSALEM'S SECOND TEMPLE MARKET

A rare Second Temple measuring table discovered 5 metres under the City of David has been identified as part of one of Jerusalem's central markets, according to Israel Antiquities Authority archaeologist Ari Levy. The measuring table was excavated along a broad paved central square alongside dozens of stone measurement weights. This section of the 600-metre-long and 8 metre-wide wide Stepped Street connected the Siloam Pool with the Temple Mount. Both sides of the street would have been lined with shops probably two stories high.

The stone table is thought to have belonged to the market's manager, an *agoranomos*, in charge of the weights and measures of commodities traded. "The volume standard table we've found, as well as the stone weights discovered nearby, support the theory that this was the site of vast trade activity, and perhaps this may indicate the existence of a market," Levy said. Only two other measuring tables have been discovered in Israel in the Old City of Jerusalem's Jewish Quarter and in Shuafat in northern Jerusalem.

The Roman street's build started in 20 CE and was completed under the governance of Pontius Pilate around 30 CE. A study of 100 coins collected under the pavement confirms the date. For the past decade, Jerusalem archaeologists have been excavating the dirt and debris covering the near-mint condition Roman paving stones buried after the Jewish Revolt of 70 CE.

According to Prof. Reich who is researching the discoveries, "It is possible that this part of the Second Temple-period city housed the office of the inspector of measurements and weights of the city of Jerusalem – a function which was commonplace in other cities throughout the Roman empire in ancient times, known as an Agoranomos."

*Source: Israel Ministry of Foreign Affairs website, 6 January 2020; The Times of Israel, 6 January 2020.*

## ASHKELON'S ROMAN FISH SAUCE FACTORY

A small Roman *cetaria*, a production centre where fermented fish sauce was processed, has been excavated a mile outside Ashkelon in southern Israel. Tali Erickson-Gini of the Israel Antiquities Authority has described the factory as consisting of fish pools, giant plastered vats, jars for storing liquid and a large receptacle that may once have held slimy garum prized throughout the Roman Empire for its salty, savoury flavour.

The discovery is one of very few garum factories found in the eastern Mediterranean despite the Romans' long presence in the area and the premium they put on the pungent fermented sauce. Most surviving factories cluster along the Iberian Peninsula and southern Italy. "It's said that making garum produced such a stench that cetariae were located some distance from the towns they served, and in this case the factory is about two kilometres from ancient Ashkelon," Dr Tali Erickson-Gini said. "It's hard for us to imagine," she added, "It was far more common than ketchup." The small size of this *cetaria* suggests it was designed to cater to locals.

*Source: BBC News, 17 December 2019; Archaeology Magazine, 18 December 2019.*

## EARLY ISLAMIC SEAFARING OFF ISRAEL

Ma'agan Mikhael is a small anchorage located on the Mediterranean coast of Israel, 35 kilometres south of Haifa, best known for the discovery in 1985 of a ship wrecked around 400 BCE. Now another amazingly preserved wreck has been discovered, Ma'agan Mikhael B. The wreck lies at a maximum depth of just 3 metres, buried under an overburden of 1.5 metres of sand. Six underwater excavation seasons have been conducted by the Leon Recanati Institute for Maritime Studies at the University of Haifa between 2016 and 2019. The excavation is still a work in progress, and the hull has not yet been completely excavated.

The remains are 19.6 metres long from the bow to the stern and 4.9 metres maximum wide. The exposed keel, endposts, aprons, framing timbers, hull planks, stringers, bulkheads, and maststep assembly are in a good state of preservation. The most significant find is the large ceramic collection comprising complete amphoras,

*Left: M. Cohen & M. Creisher examining the pottery near the Ma'agan Mikhael B bulkhead. Photo: A. Yurman. Right: globular amphoras (LR2 style) in the central section of the Ma'agan Mikhael B shipwreck.Photo: A. Yurman.*

as well as juglets, bowls, cooking wares and potsherds. Several of the storage jars are lined with pitch and still hold remains of foodstuffs, such as olives, walnuts and pine nuts. Other finds include rigging, wooden artefacts, organic finds (ropes, baskets, matting and food remains), animal bones, glass, coins, bricks and ballast stones. Based on radiocarbon analysis and study of the finds, the shipwreck has been dated between the 7th and 8th centuries CE.

It is suggested that the original ship was about 25 metres long with a beam of some 7 metres and capable of carrying about 150 tons of cargo. This merchantman plied the Levantine coast with a cargo carried in amphoras originating from various places, including Egypt and Turkey. The date of this wreck makes it an exceptional source of information for understanding many aspects of ship construction, seamanship and seafaring, regional economic activity and daily life in the Levant in Late Antiquity.

*Source: D. Cvikel, 'Early Islamic Seafaring off Israel', Wreckwatch Magazine 1-2 (September, 2020).*

## DEAD SEA SCROLLS FRAUD IN WASHINGTON

The fourth floor of the Museum of the Bible in Washington tells the story of how the ancient scripture became the world's most famous book. Its most prized possessions are fragments of the Dead Sea Scrolls, ancient texts that include the oldest known surviving copies of the Hebrew Bible. The collection cost millions of dollars and seemed the perfect addition to the young museum.

Now curators have been forced to confront the bitter truth that all 16 of the museum's scroll fragments are modern forgeries that duped collectors, the museum's founder and some of the world's leading biblical scholars. "The Museum of the Bible is trying to be as transparent as possible," CEO Harry Hargrave announced. "We're victims – we're victims of misrepresentation, we're victims of fraud."

In a report spanning more than 200 pages, a team of researchers led by art fraud investigator Colette Loll concluded that while the scrolls were probably made from authentic ancient leather, they were inked in modern times and modified to resemble authentic Dead Sea Scrolls. "These fragments were manipulated with the intent to deceive," Loll says.

The forensic team first concluded that the fragments were made of the wrong material. Nearly all real Dead Sea Scrolls fragments are tanned parchment, but at least 15 of the Museum of the Bible's fragments were leather, which is thicker, bumpier and more fibrous. The team's best guess is that the leather was recovered from scraps found in the Judean Desert or were cut from ancient leather sandals.

Tests run by Jennifer Mass, the President of Scientific Analysis of Fine Art, determined that the forger soaked the fragments in an amber-coloured liquid, most likely animal-skin glue. The treatment stabilised the leather, smoothed out the writing surface and imitated the signature glue-like feature of the real Dead Sea Scrolls.

Most damning of all, microscopic analysis proved that the fragments' scripture was recently painted onto the ancient leather. On much of the material, suspiciously shiny ink pools were detected in cracks of torn edges that cannot have been present when the leather was new. On others, the forgers' brushstrokes clearly overlie the ancient leather's bumpy mineral crust.

Detailed chemical analyses led by Buffalo State College conservation scientist Aaron Shugar raised yet more red flags. By shining x-rays on the fragments, the researchers plotted different chemical elements across the fragments' surfaces, which revealed how calcium had soaked deeply into the leather pieces. The element's distribution strongly hinted that

the leather had been treated with lime to chemically remove its hair. While recent evidence suggests at least a few authentic Dead Sea Scrolls may have been prepared with lime, scholars have long thought that the technique became common after the authentic Dead Sea Scrolls were written.

The results from Washington do not cast doubt on the 100,000 real Dead Sea Scroll fragments, most in the Shrine of the Book at the Israel Museum in Jerusalem.

*Source: The Guardian, 16 March 2020; National Geographic, 17 March 2020.*

## SPACE ARCHAEOLOGY IN ISRAEL & PALESTINE

Twisting satellites from geopolitics to archaeological site detection – space archaeology – is a growing field, especially tried and tested in Egypt. Satellites offer global remote open-access, with one exception: Israel and the Occupied Palestinian Territories. A long-standing prohibition in the United States blocked archaeologists studying the region using US technology.

Now a new ruling pushed through by two Oxford archaeologists, Dr Michael Fradley and Dr Andrea Zerbini, has changed the law. "This ruling opens up many opportunities for research for archaeologists and many other disciplines which use Earth observation, such as for monitoring evidence of climate change and water exploitation," Dr Fradley says. "And it is a big win for science..."

Ever since the Cambridge botanist Hugh Hamshaw Thomas, serving as an RAF intelligence officer in Palestine during World War I, highlighted the value of aerial photography in the Levant, the region's potential has rarely been realised. The new ruling will dramatically drop the optical visibility of ancient sites accessible using satellite imagery over Israel from 2 metres to a Ground Sampling Distance of 0.4 metre.

Fradley and Zerbini's push is part of their research with EAMENA (Endangered Archaeology in the Middle East and North Africa), a project supported by a £3.3 million grant from the Arcadia Fund and the Cultural Protection Fund and based at the Universities of Oxford, Leicester and Durham. EAMENA uses satellite imagery to rapidly record and share information about archaeological sites and landscapes under threat. It has applied satellite technology to blow the whistle on risks to ancient sites in Libya's al-Jufra oases, Roman military sites in the eastern desert of Egypt and to asses the impact of a ring road development in Madaba on behalf of the government of Jordan.

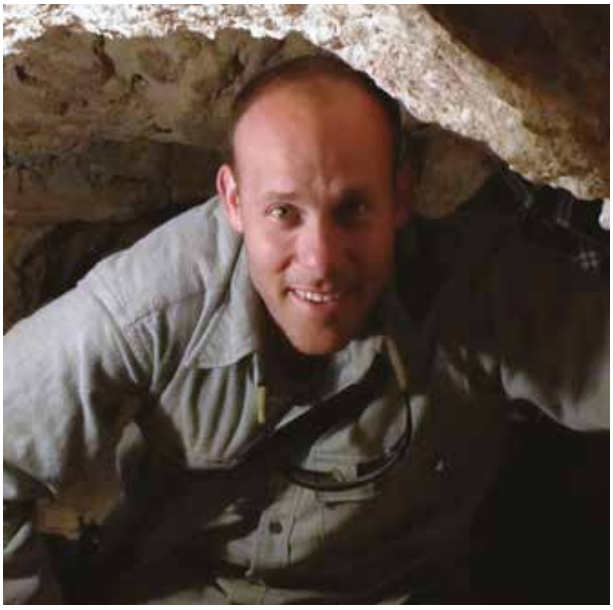
"We haven't been able to access some areas in occupied territories and this will make an enormous difference," says Dr Fradley. "We will be able to record archaeology of the region on a granular level and have a much more objective view. We will be able to see if there has been damage to sites and, potentially, identify where sites have been lost."

Dr Fradley explains further that while "Israel has its own mapping of the entire country and a well-developed and well financed antiquities authority... we haven't had accurate imagery for the OPT. More data is of more benefit."

Dr Carol Palmor, Director of the Council for British Research in the Levant, emphasises that "This represents an essential step for the protection of heritage in Israel and Palestine, with profound implications for many years to come. Furthermore, it is a brilliant example of the impact of research on policy and international legislation."

*Source: 'Oxford Archaeologists Win Access to Restricted Satellite Images of Israel and the Palestinian Territories', University of Oxford News & Events, 11.8.20; M. Fradley, 'EAMENA Leads Reform on Satellite Imagery Restrictions in the Levant', eamena.arch.ox.ac.uk.*

# MEET EITAN KLEIN, CATCHING HIS BREATH FROM CHASING ANTIQUITIES LOOTERS AROUND ISRAEL



It's a great pleasure to welcome Dr Eitan Klein, Deputy Director of the Antiquities Theft Prevention Unit, to *In Conversation with E-Strata*. Eitan is also an Anglo-Israel Archaeological Society committee member.

Eitan has his finger on the pulse of the archaeology of the Holy Land. For nine years he's been part of a team entrusted with saving unique cultural heritage the length and breadth of Israel – less Indiana Jones and more Clint Eastwood. Eitan earned his doctorate at Bar-Ilan University and finds time to lecture in the Land of Israel Studies Department at Ashkelon Academic College. His specialist interests range from the archaeology, history and historical-geography of the Jews and Judea during the classical periods (Greek to Byzantine) to speleology and settlement patterns and pagan cults in Judea in the Late Roman period. Eitan seems to spend as much time exploring ancient burial and hiding caves as on land. Concealed spaces are favoured haunts of antiquities looters because they preserve artefacts to a higher level.

Eitan has excavated extensively. He publishes prolifically on a cornucopia of fascinating themes from the seven-branched menorah and Hellenistic and Early Roman ship graffiti to a Roman military camp north of Bet Guvrin (Eleutheropolis) and a nunnery at Horvat Hannah associated in legend with the mother of Samuel the Prophet. Much of his work focuses on the Judean Desert, from where he's published a 7th-century BCE Hebrew papyrus and spent three years excavating the Cave of the Skulls and multiple other caves in the region. Currently, Eitan is working on a series of books presenting the results of the Israel Antiquities Authority's surveys and excavations in the caves of the Judean Desert.

*Late Roman lamp assemblage from the Te'omim Cave. Photo: Prof. Boaz Zissu.*

***What inspired you to want to become an archaeologist?***

Since I was a small child I was fascinated by the Land of Israel, its landscapes, history and culture. I was born into a family

which travelled the country whenever possible. My parents and grandparents educated me in this way, so I was soon interested in the geography and history of the Land of Israel and the Jewish nation. I remember holding a topographic map and memorizing the route from my home in Rishon Le- Zion to Tiberias when I was five or six years old.

As I grew up, and after the army, it felt natural for me to study in the Department of the Land of Israel Studies at Bar-Ilan University. During my third year I decided to focus on archaeology as I came to understand that historians usually establish their studies not only based on historical sources but also on the works of archaeologists. Therefore, I preferred to become an archaeologist, to discover and analyze finds using historical assumptions. In this way I ultimately became an archaeologist and a historical-geography researcher.

*One of the crevices at the Te'omim Cave. Photo: Prof. Boaz Zissu.*

***What was the first dig you joined & what discoveries do you remember most fondly?***

Before the army I volunteered for one week at the archaeological excavation of Gamla in the Golan Heights. During my BA and MA studies at Bar-Ilan University, I excavated as a student and as part of the team at Tell es-Safi (biblical Gath) directed by Prof. Aren Maeir.

One of my most memorable discoveries was an assemblage of oil lamps that we revealed inside deep cervices all around the main hall in the Teo'mim Cave and near a deep shaft. Our assumption was that they were part of a pagan cult that met in the cave during the Roman-Byzantine periods.

***Your field experience is impressive. Which of your digs have inspired you the most or do you consider the most important?***

In the last three years I have been a co-director (together with Amir Ganor and Dr Ofer Sion) of a national multi-year survey and rescue excavation

*Survey of the Northern Cliff of Nahal Hever, Judean Desert. Photo: Eitan Klein.*

project (2017-2021) in the Judean Desert caves due to intensive looting activities and widespread damage to archaeological assemblages in this area.

As part of this project we systematically surveyed more the 80 kilometres of the Judean Desert cliffs, entered hundreds of caves, including those hard to access with ropes, and excavated more than ten caves and archaeological sites.

I think this unique project is very important scientifically as we can now reconstruct a true picture of the history and intense use in each period in the Judean Desert Caves. More importantly, the project mapped the looting activities in the area, so the State of Israel can now protect its national cultural property in the desert more effectively.

***How did you end up working for the Unit for the Protection of Antiquities Looting?***

I was writing my Ph.D. thesis about *Aspects of the Material Culture of Rural Judea during the Late Roman Period* under the guidance of Prof. Boaz Zissu from the Bar-Ilan University. Prof. Zissu was the head of the Antiquities Theft Prevention Unit (ATPU) of the Israel Antiquities Authority before he moved to an academic position.

During my Ph.D. research I worked on few Late Roman assemblages from archaeological excavations that the ATPU held (such as the excavations held at Horvat 'Ethri and the Roman military camp north of Bet Guvrin).

When I finished my Ph.D. studies, I started looking for a job in archaeology and Amir Ganor, the head of the ATPU, offered me a position in the unit as a field inspector of the Judean Mountains and foothills, and the rest is history.

***Speleology is an unusual specialism. How did you become fascinated by subterranean caves? What does the discipline involve?***

Caves always attracted me. Many people are afraid of dark and deep spaces and prefer not to enter them. On the other hand, I see them as an opportunity for discovery and research. Various human activities took place inside subterranean caves and they often served for burial purposes, hiding and refuge, and ritual purposes. There is a good chance to find interesting archaeological assemblages inside caves. This is also the reason why they have attracted antiquities looters throughout history. It is part of my work and duty in the ATPU to document and research caves that were damaged by antiquities looters.

*Eitan Klein during the archaeological survey at Camun Cave. Photo: Boaz Langford.*

***At Khirbet Umm Er-Rus in the Ela Valley of the Shephelah you surveyed subterranean cavities dating between the late Second Temple period & the Bar Kokhba Revolt. They served as storage installations, Jewish miqvaot ritual***

*Hiding complex from the Bar-Kokhba Revolt at Kh. Beit Bad. Photo: Eitan Klein.*

***baths, olive presses, a columbarium and hiding places. Why were the miqvehs underground? For climate control or defence?***

During the Late Second Temple Period and until the Bar-Kokhba Revolt, an intensive Jewish settlement populated the Judean Mountains and foothills. In order to use their resources more effectively, the Jews used the subterranean areas below their houses for many purposes. Usually they installed ritual baths there because it was very easy to hew the bedrock of the Judean foothills. It was also convenient to block the entrance of an underground ritual bath to prevent any penetration of dirt and sun rays that causes algae to develop in the water.

***In 2016 your team returned to the Cave of the Skulls on the bank of the Nahal Ze'elim Valley in the Judean Desert. The cave was first dug by the late Professor Yohanan Aharoni for the Hebrew University of Jerusalem in 1960-1961. What were the circumstances of your new mission? What finds were being looted?***

In 2013 the ATPU succeeded in seizing the 'Jerusalem Papyrus', a 7th-century BCE shipping document mentioning Jerusalem, in a complex intelligence operation against a group of antiquities looters. After seizing the ancient certificate, attempts were made to identify the precise location where it was found. This led to salvage excavations by the ATPU and members of the Cave Research Unit at the Hebrew University in a cave in the north face of Nahal 'Arugot and a cave lying near the head of

*The 'Jerusalem Papyrus' recovered from cave looters in 2013. Photo: Shai Halevi.*

*Left: looters' digging equipment seized above the 'Cave of the Skulls'. Photo: Eitan Klein.*

*Below: archaeological excavation at the 'Cave of the Skulls'. Photo: Guy Pitushi.*

the Nahal Hever waterfall.

In November 2014 information was received regarding illegal excavations that antiquities looters were carrying out in the Cave of Skulls. Inspectors of the Antiquities Theft Prevention Unit quickly arrived at the cave and were able to arrest the looters. The gang, which was equipped with shovels, ropes, metal detectors and food had dug up various archaeological finds, such as a wooden comb from the Roman Period and a Neolithic arrowhead. Their team was made up of six men from the village of Sa'ir in the vicinity of Hebron. The looters were sentenced to eighteen months in prison and a payment of a fine on the charges of irreparable destruction of an archaeological site and theft of cultural heritage items.

Following this damage, a three-week salvage excavation was initiated in the Cave of the Skulls on behalf of a joint expedition from the Israel Antiquities Authority and the Institute of Archaeology at the Hebrew University of Jerusalem in May-June 2016. The excavation was assisted by hundreds of volunteers from Israel and abroad. We set up a temporary camp at the head of the cliff for overnight stays and logistic purposes. Descent into the cave used safety systems installed in advance, including metal cables, ladders and ropes.

***What has the new fieldwork discovered?***

Systematic excavations took place throughout the cave, including interior areas that were hard to access. All excavated materials were transferred to the rock shelf in front of the cave openings for careful sifting. It turned out that there are certain areas in the cave that were not damaged over the years by looting, and in some cases we were able to identify untouched layers *in situ*. During the excavation, various items from different materials and periods were found, particularly from the Chalcolithic and Roman Periods. Two small papyri fragments bearing Hebrew/Aramaic script were among the most notable finds discovered. Another interesting find was a bundle made of

*A textile bundle concealing a bundle of beads from the 'Cave of the Skulls'. Photo: Clara Amit.*

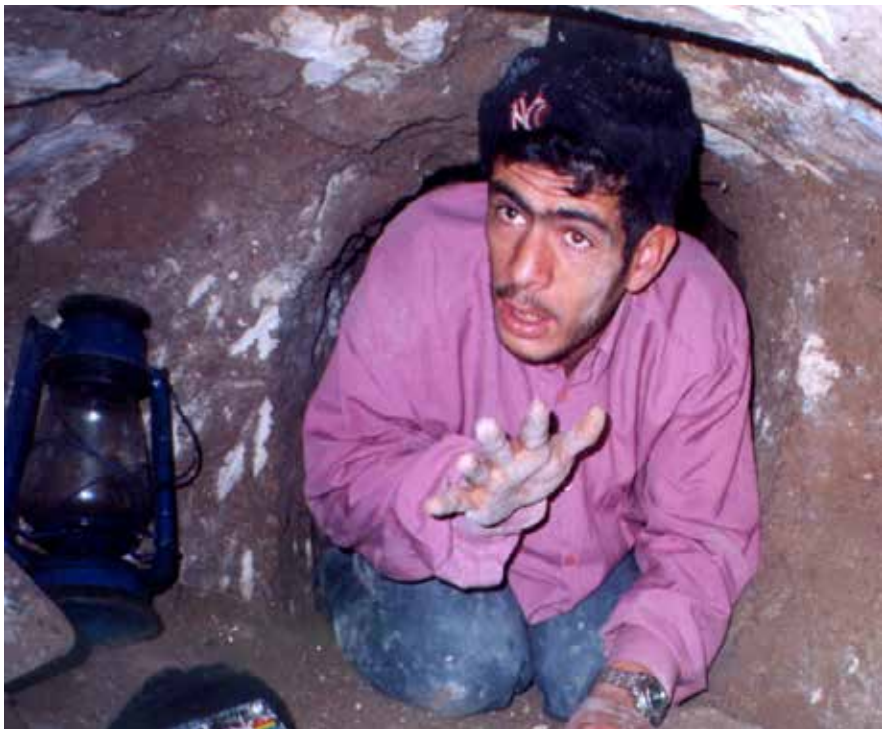
textile wrapped around a cluster of beads, similar to those found during Aharoni's excavations buried in a natural niche at the edge of the cave's western wing.

***What new methods did the IAA bring to the cave and the processing & analysis of finds?***
The excavation made use of high-resolution methods of excavation and documentation, including total sieving of all spoil and systematic sampling of excavated contexts. This included sampling and researching botanical, zoological, organic and anthropological contexts with extensive use of radio-carbon analysis.

***How serious is looting in Israel today?***
Israel has a rich history and more than 30,000 ancient sites are known throughout the country. Most of those are out in the open, unguarded, and can be easily reached by the public. Antiquities are obtained by professional thieves who systematically dig up sites, break into burial caves and destroy ancient structures. In the Judean Hills alone, 6,200 burial caves have been broken into, and biblical period tell sites have been dug up in search of loot. Underground cave complexes from the era of the Great Revolt and the Bar Kokhba Revolt against the Romans have been systematically plundered in an attempt to find valuable coins from those periods. In this way, entire pages of history have been ripped out by robbers' spades and tractors.

Ancient sites destroyed by robbers leave no possibility for archaeological research since the original order of chronological levels containing evidence of thousands of years of habitation end up destroyed and their artefacts stolen (such as coins, pottery and glass objects).

In the last 50 years, the theft of antiquities in Israel has been run by organised gangs. At the bottom of the 'pyramid' are dozens of workers, the majority from Judea and Samaria, working for 'contractors' or 'Rais', who have great skills in finding antiquities. The 'Rais' and his workers, with their work tools, metal detectors, observation equipment and non-ballistic weapons, infiltrate Israel at night, arriving at carefully chosen predetermined spots and digging mainly in underground cave complexes and burial caves that offer the best chances of finding intact artefacts. The gangs work at night, taking the greatest care not to destroy possible finds, while lookouts watch for signs of approaching danger. They never dig at the same site night after night and are careful to hide their tracks. The 'Rais' equips the robbers with modern metal-detecting equipment and finances their operations. He sometimes has two or three such gangs working for him. The stolen antiquities are then bought by the local broker or middleman, usually an influential village resident who contacts nationwide agents, calling them to the village to examine the uncovered items. These are then sold for cash to the highest bidder



*A looter equipped with a metal detector caught inside an underground hiding complex. Photo: Amir Ganor.*

who passes them on to antiquities dealers.

***What are the most worrying trends?***
Due to the development of the internet (eBay, Facebook, Youtube) in the last 20 years, people have more accessibility to commercial platforms and information about treasure hunting, ancient coins and the use of metal detectors. Therefore, we have seen hundreds of amateur groups and individuals trying to follow their dreams. Needless to say, those activities are against the law in Israel and cause tremendous damage to archaeological sites and contexts.

***How does the situation on the ground compare to the 1950-1970s?***
In the last two decades the chain of illicit looting and traffic in antiquities has been interrupted by the actions of the State of Israel:
1. The erection of the security fence between the West Bank and Israel complicates the possibilities for diggers and smugglers.
2. As of 2002, amendments to the antiquity's law restrict the transfer of antiquities from the Palestinian Authority into Israel.
3. The IAA's Theft Prevention Unit's successes are overcoming the phenomenon: almost 150 looters are caught each year.

***Where are the most worrying hotspots?***
Mostly in the areas close to the West Bank (mainly the Judean foothills and mountains), but also in the Negev and Galilee.

***Israel is the only country in the Middle East with a legal antiquities market. It has around 40 antiquities dealers, mostly selling in & around Jerusalem. Since Israel has strong antiquities laws, why hasn't the trade been banned?***
The trade in antiquities is legally permitted in Israel, although regulated by the Israel Antiquities Authority. The answer, of course, is because Israel is the only democratic country in the Middle East. Forbidding commerce in antiquities would cause a conflict with the constitutional right of the freedom of commerce and this question has already been approached in the Israeli Parliament without any changes.

The Israel Antiquities Authority understands that it was their responsibility to combat this situation and we successfully enacted a few legislation changes in the last few years.

One example is a change in the Israeli Customs regulations, now requiring IAA approval of all ancient items imported into Israel. The law was approved and enacted in 2012. All importers are now required to submit provenance documentation detailing the entire history of the object and to attach export documentation in accordance to the country where it was purchased. If sufficient documentation is not submitted, the entry of this item will not be approved and it will be returned to sender.

If there is any doubt about the legitimacy of any imported item, immediate contact is made with Interpol. Due to the change of the custom regulations in Israel, we have succeeded in stopping the unregulated antiquities import to Israel from many countries.

In addition, in 2016 we enacted new regulations in the form of a process of computerizing the entire inventory of all authorised antiquity dealers in Israel, requiring them to photograph and document all their inventory, thus preventing laundering of antiquities acquired by looting. This computerized system will improve our ability to administer the prevention of the laundering of stolen artefacts within a dealer's inventory.

***Is the sale of fakes charading as authentic finds a problem in Israel?***

Yes. We see a lot of forged artefacts in the market (mostly coins) and inexperienced people can be fooled by them.

The Israeli Antiquities Law states that antiquities dealers bear a legal responsibility to ensure the authenticity of artefacts. We have dealt with many legal cases against dealers who sold forgeries to tourists. Our first concern in those kinds of cases is to return the client's money.

***Has the coronavirus lockdown extended to site looting?***

These months haven't just seen a virus outbreak, but also a burst in antiquities looting. We worked around the clock, day and night, and caught dozens of groups of looters all around Israel.

They thought, perhaps, that it would be easy for them to plunder in open areas due to less inspection, but we were prepared for this problem in advance.

***What's next on your to do list?***

My plans for the future are to complete the survey in the Judean Desert, continue excavating select caves of potential archaeological value.

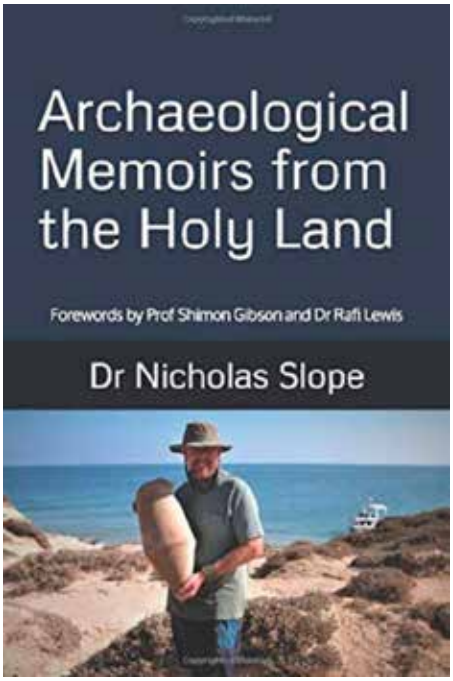
I am planning to publish a book on 'Rural Judea during the Late Roman Period' and to publish monographs related to the results of the Judean Desert Caves Archaeological Project.

To learn more, Eitan's numerous publications on Ashkelon, Roman Shephelah, Beit Guvrin, Bar-Kokhba Revolt hiding places and the Judean Desert Caves Project can be read at https://antiquities.academia.edu/EitanKlein.

# ADVENTURES FROM THE HOLY LAND

## By Nick Slope

*The following stories are extracted from Nick Slope's terrifically colourful Archaeological Memoirs from the Holy Land (Incitatus Books). Different sections are threaded together for purposes of creative unison.*




All photos courtesy of Incitatus Books.

Since boyhood, I have been fascinated by history and archaeology but it was not until my late 20s that I had the chance to follow my dream. At the time, I was working in South London, buying and selling paper. I enjoyed my work and the people I worked with were great, but I knew in my heart of hearts that this was not the path I wanted to follow. So I handed in my notice, got on a plane and flew out to Israel. Why Israel? Well, I decided that if I was to follow a career digging for a living then I would dig in the sun rather than the rain!

I also selected Israel as I had just read a magazine article about excavations at Jericho on one of Herod the Great's winter palaces and was so taken by the idea of working there that I arranged to be a volunteer. I spent a number of years working in Israel on various sites including Tel Lachish, Tel Akko, Shikmim and Gamla but then decided to return to the UK. I had realised that to be a successful archaeologist, I had to do two things: get a degree and get proper archaeological training. Despite having failed heroically at school to get any qualifications, I managed to bluff my way into the University of Newcastle upon Tyne and read for a joint honours degree in Ancient History and Archaeology. I also attended archaeological training courses run by the Museum of London and for the next few years commuted between sites in Israel and the UK.

… those of a sensitive disposition should look away now! A sense of humour in archaeology is an asset and excavations tend to imbue a sense of camaraderie and fun which usually emerges once the work is done and the sun has gone down. Typically, excavations in the Southern Levant take place during the university break in July/August time – this so happens to be the hottest time of the year with temperatures in the mid-day sun topping 40 degrees Celsius. This does not come without its hazards to a red-headed gentleman such as myself, and on

*Wheelbarrow jousting at Tel Jezreel.*

*While digging at Jericho, Bedouin workers affectionately called Nick (at right) 'Dr Mummin', Dr Death, because he worked with a lot of dead bodies. In Arabic, 'Nick' means 'to make love'.*

one dig in Tel Lachish I was nicknamed 'strawberries and cream' given my contrasting red and white skin tone after six weeks excavating in hot sun in t-shirts and shorts. The mirth continued when I returned to England and inadvertently shaved my side burns off producing a white L shape down each cheek that were not quite level and took weeks to fade away.

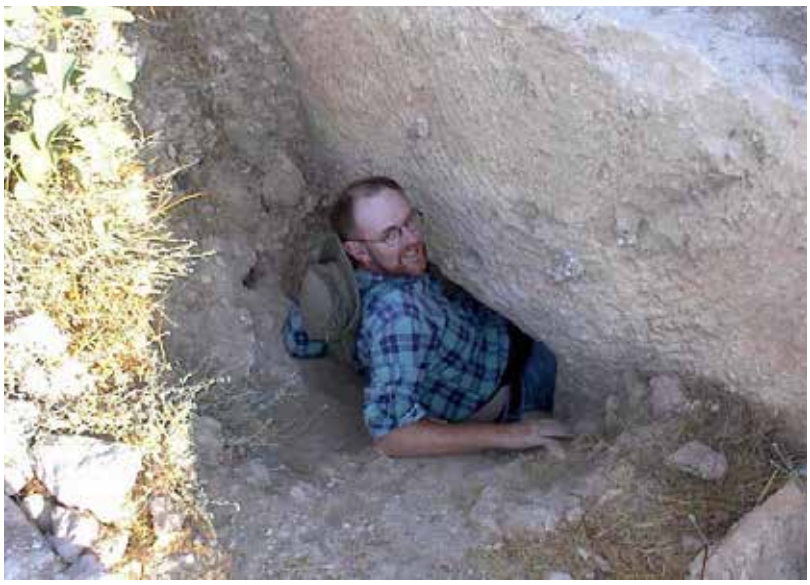
Other hazards of working in the Southern Levant are creepy crawlies. Now God in his infinite wisdom endowed such creatures with various poisonous stings and bites and a penchant for hiding under rocks and stones – in fact just the sort of rocks and stones that an archaeologist such as myself is seeking to move. Israel is home to nine snakes, all of which are venomous and three poisonous to humans – the Black Adder, the Israeli Viper and the Israeli Mole Viper. Fortunately, I have not yet been bitten by a snake but I did witness two female volunteers leap a 5 foot wall after a snake fell into an excavation pit they were working in.

On one occasion I and another colleague rescued a teenage boy from a mob by pulling him into a taxi and proceeding away at high speed, and on another accosted a thief in a hotel who was ransacking the place and armed with a knife. However, my usual modus operandi is to avoid trouble by wearing a baseball cap emblazoned with a map of Norway on the front in pretence of being a tourist.

I try to take a neutral position on the political situation, and have no particular religious affiliation, but I must confess to a grudge against Yasser Arafat as he owes me a meal. I will explain. A number of colleagues and I sat down to a lavish meal after a long day of excavating in a Jerusalem restaurant when a bomb went off nearby and shook the building with such force that a huge plume of dust fell from the ceiling and covered the meal we were just about to eat.

Along with the dangers, working on excavation often involves a lot of fun. Excavation volunteers are adept at making their own entertainment and on one dig this involved medieval jousting with wheelbarrows, instead of horses, where paired volunteers took turns to joust each other. Other popular events have included beetle racing complete with designated track and a bookie.

This anecdote records one of my tomb raiding exploits into a cave near Jerusalem, at a place called Akeldama ('Field of Blood') in the Hinnom Valley (Gehenna). Unfortunately, the intifada (a popular Palestinian uprising) had broken out and the security situation had deteriorated. A mosaic I had been excavating was ripped up during the conflict and used as missiles so we had to suspend the work. At that time I was also working at the Cave of John the Baptist near Suba with Professor Shimon Gibson who is a good friend of mine, as well as an extremely knowledgeable research fellow at the Albright institute of Archaeology, and he asked me if I would like to work in a tomb he had found. Now I know Shimon is a bit



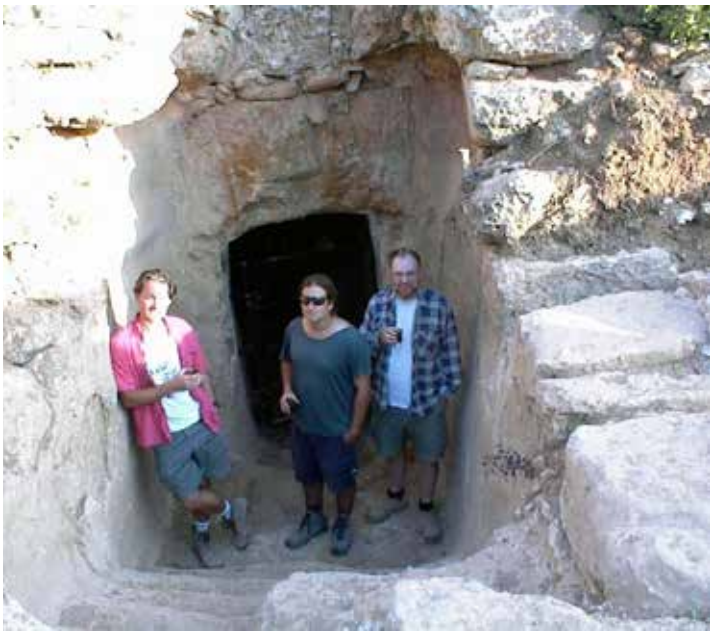
*Nick descending into 'Hell', a Roman-period tomb at Akeldama in the Kidron Valley, Jerusalem.*

of a boy scout, so I asked him if there was anything wrong with it and he replied 'not really'. So I said, 'what does not really mean?' and he said, 'Well it's in a place called Hell'.

In the end curiosity got the better of me and I decided to go along with Shimon and an Israeli archaeologist called Dr Rafi Lewis. Now because the temperature of the tomb is quite ambient, the hairy black spiders go in there to sleep, but as soon as a human being enters the confined space, the air warms up and they become lively little fellows. Once you have squeezed yourself in through the entrance and then dropped down, you come to a series of tunnels which connect to galleries. These galleries contain bone coffins known as ossuaries. Material from the cave was sent to a radiocarbon unit in the States and they confirmed a date of 70 CE, give or take 20 years. In the fax confirming the results they wrote underneath "the Turin shroud team would give their right arm for this result", so it is definitely from the time of Jesus, although not the tomb of Jesus.

…these tunnels were about the width of a person and you had to lie down and squeeze yourself along. Now because of all the hairy black spiders (I liked to think of them as tarantulas) we had developed a system whereby one person would crawl down the tunnel with a Davy light strapped to their head carefully feeling their way and checking for spiders, and the other two people would hold onto their legs so that if anything happened we could drag them back quickly. Shimon went ahead into one of these tunnels and started crawling along with Rafi and me holding his legs when suddenly he screamed "Get me out! Get me out! Get me out now!"

Rafi and I quickly pulled him out and to our horror discovered his face covered in blood. "Oh no!", we said, "what happened? Was it a tarantula or a snake or a scorpion?" Shimon shook his head and dabbed at the blood running down his face, "It was a mouse," he said. Apparently he had been crawling along looking for the



*Shimon Gibson, Rafi Lewis and Nick Slope at the entrance to the Suba Cave, 2001.*

tarantula-like spiders when he suddenly spotted a mouse staring at him quietly on a stone, and it promptly bit him on the nose.

In ancient times the site of the Mount Zion archaeological excavation was actually within the centre of the ancient city, but today it lies on the southern side of the Old City Wall, not far from the Zion Gate. The site is on an incline and the gradient has been made steeper by nearby construction works. As might be expected from its prominent position in the ancient city of Jerusalem, the site contains artefacts over 2,000 years old and a great deal of pottery. Moreover, the site has been well preserved due to fills accumulated on top in later periods that have preserved the structures beneath.

Mount Zion, 14 June 2016: I arrived yesterday evening following a cruise to the Canary Islands and went straight into action at 5.15 this morning (arggggghhh...). I met the sixty or so volunteers and the staff.

16 June 2016: Really started to shift dirt today. In my area we have one group that are digging through relatively modern levels and they produced the find of the day which was a pair of pantyhose (I wondered where I had left them in 2001)!

21 June 2016: Excavation continued and to supplement our earlier find of a pantyhose in some modern fill today we found a grey bra to go with it – whatever next! Well...Kevin, the other area supervisor, found an old taser and a 1980s credit card in the bottom of a cistern! Rumour is that the credit card was made out to one Mr Herod Antipas.

22 June 2016: A day of two halves. This morning we started uncovering an ancient water management system in the lower area complete with capstones – very exciting (if you like that sort of thing – and I do very much). In the upper area we discovered a very modern wasp nest and had to deal with it before digging recommenced. This evening was the mid-dig party as we said goodbye to the first tranche of volunteers and UNC Charlotte students. They were a super bunch of people and it was sad to see them go but hopefully they enjoyed the experience. Kevin, Betty and myself gave out the legendary 'Golden Potsherd Awards' which were received with due reverence and aplomb from an appreciative crowd.

*Excavating at Mount Zion, Jerusalem.*

29 June 2016: Weather hotting up but still better than Monday. In one part of my area we have four walls, all converging and it is driving me mad how to work out their sequencing, function and period – I'm calling it the wall 'train crash'! The great British archaeologist Kathleen Kenyon, who excavated at Jericho, moaned that excavating in Jerusalem was "too complicated" – I'm beginning to know how she felt!


*Right: the Golden Potsherd Awards handed out at the end of the 2016 Mount Zion excavations in Jerusalem.*

*Below: the 2016 Mount Zion excavation team.*

Last official day of the dig. A golden rule of archaeology is that you find the important find/feature on the last day of the dig and today was no exception. We had a large plastered wall, probably Byzantine, and today we were removing the last part of it when we found a doorway which helps us define its structural purpose. Tonight is party night and I have written 'The Zion Chronicles' to perform for everyone.

10-13 July 2016: Saw a lot of old friends and had top nosh and wine! Yesterday we cleaned up for final photography – really horrible working in the open without shades (temperature 33C!) sweeping the site clean. I ended up with a cough and sunburn! When we finished we went to a local restaurant and had beer and chips! This is my last post from Zion as I fly home tomorrow – I hope you have enjoyed!



# TAILPIECE

## AIAS TALKS

The Anglo-Israel Archaeological Society is delighted to announce details of two forthcoming Zoom talks as follows:

Thursday 1st October 2020, 4.00pm (UK time):
Dr Yana Tchekhanovets (Israel Antiquities Authority, Ben Gurion University in the Negev).
*The Holy City? Fourth-Century Jerusalem in the Light of New Archaeological Data.*

Wednesday 18th November at 4.00pm (UK time), in association with the Institute of Jewish Studies, UCL, London: Dr Kimberley Czjakowski (Senior Lecturer in Ancient History, University of Edinburgh).
*Re-approaching the Babatha Archive.*

Both lectures will start at 4.00pm (UK time) and will last for about an hour, including a Q&A. Further information can be found on our website, www.aias.org.uk.

Please email secretary@aias.org.uk to register your interest and you will be sent the Zoom link approximately 48 hours before the event.

Keep an eye on our website, www.aias.org.uk, for a lecture programme for next season.

## FEEL LIKE AN ESCAPE? CHECK OUT:

- The newly found First Temple royal 'palace' in Jerusalem with 8th/7th century BCE ornamented capitals: https://www.youtube.com/watch?v=hqqadscsYlo
- David Ilan, How Ancient Israel Began: A New Archaeological Perspective: https://www.youtube.com/watch?v=SSXmf0fnhMU
- Learn more about the mystery of the Giant Mound of Arnona in Jerusalem: https://www.youtube.com/watch?v=rA-ZusMpXPw https://www.youtube.com/watch?v=x1NGUNdMgug

As you will be all too aware, all charities are going through hard times during the Covid-19 pandemic and we are no exception. Although we do not charge for AIAS lectures, any contribution to the general costs of the Society would be more than welcome, particularly from non-members. Anyone who would like to make a donation, large or small, can contact Sheila Ford: secretary@aias.org.uk.



*E-Strata is edited & designed by Sean Kingsley, Time Analysts.*