TAU Archaeology

The Jacob M. Alkow Department of Archaeology and Ancient Near Eastern Cultures
The Sonia and Marco Nadler Institute of Archaeology
The Lester and Sally Entin Faculty of Humanities | Tel Aviv University
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Newsletter of

The Jacob M. Alkow Department of Archaeology and Ancient Near Eastern Cultures
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Cover Image: photomontage of disposable face mask and LB I jug from Tel Hadar, design by Avita Flit



Local imitation of Chocolate-on-White Ware (photo by Sasha Flit; information courtesy of Assaf Kleiman)



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Message from the Chair of the Department and the Director of the Institute

Excavating, Teaching and Touring in the Shadow of COVID-19

It is our great pleasure to present the 7th issue of the TAU Archaeology Newsletter, reporting and summarizing our achievements in this extraordinary year. Like the rest of the world, the COVID-19 pandemic caught us by surprise and forced us to reevaluate our vision of what is most essential for academic growth and prosperity. While the easier choice would have been to completely shut down our activities and wait for better times, we accepted the challenge of finding creative ways to continue teaching, digging and exploring, maximizing faculty and student interaction as much as possible, without putting anyone at risk.

This issue covers the activities of our Institute's research expeditions which excavated this year despite the pandemic. From Timna in the south, through Masada, Tel Azekah, Jerusalem, Tel Hadid and all the way north to Tell Izṭabba, teams of excavators made exciting discoveries and laid the groundwork for future research and revelations.

We are pleased to announce the opening of our three new research laboratories, dedicated to conservation, ceramic petrography and 3D imaging of archaeological finds. We are confident that these labs and their directors will foster interdisciplinary collaboration and broaden the possibilities for future research students.

This newsletter also shares the stories of seven postdoctoral researchers, who are currently working with us for a year or more. They join a large group of students from all around the world who, in spite of the pandemic, came to Israel to study for an M.A. or a Ph.D. Instead of being stuck at home, they were able to take advantage of the opportunity we provided for them to come and join us here in Israel for educational tours, outdoor teaching and regular class meetings to the extent that safety permitted.

Finally, if this year has taught us anything, it is that there is no substitute for human interaction. We wish to thank each and every person teaching, researching and studying here at the Institute for their presence and invaluable contribution to the TAU archaeological community.

Prof. Yuval Gadot
Chair, The Jacob M. Alkow
Department of Archaeology
and Ancient Near Eastern Cultures

Prof. Oded Lipschits
Director, The Sonia and
Marco Nadler
Institute of Archaeology



The 2020 excavation season at Tel Hadid (photo by Noam Kodesh)

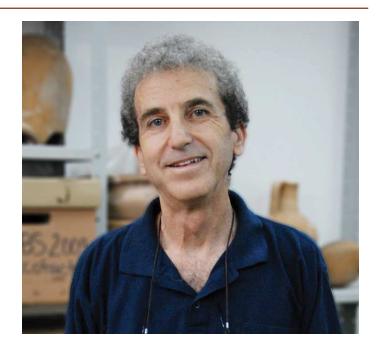


Alexander Fantalkin teaching a class on typology in the Institute's collections room (photo by Sasha Flit)



Ran Barkai giving a class on flint tools at the entrance to the Gilman Building (photo by Sasha Flit)

In Memoriam **Shlomo Bunimovitz**1952–2020



On December 5, 2020, our friend and colleague, Prof. Shlomo Bunimovitz, former head of the Department of Archaeology and Ancient Near Eastern Civilizations at Tel Aviv University, passed away.

Shlomo was one of the pillars of the Department for over three decades. He began his B.A. studies in 1975, graduating summa cum laude in 1978. He went on to complete his M.A. in 1983 and his Ph.D. in 1989, both under the supervision of Prof. Ora Negbi. In hindsight, Shlomo's M.A. thesis ("From Khirokitia to Enkomi: A Composite Model for Culture Change in Cyprus from the Neolithic to the Late Cypriot Period") contains the seeds of what would later epitomize him as a scholar, a teacher and an intellectual: the ability to probe the Near Eastern cultures in depth. his profound familiarity with up-to-date theoretical approaches in world archaeology, and finally, a long-term perspective on the formative periods of humanity. These fundamental principles served as Shlomo's toolkit when he wrote his groundbreaking Ph.D. dissertation, which would make archaeology a leading player in the study of a period previously known mainly from Scripture. In his dissertation, titled "The Land of Israel in the Late Bronze Age: A Case Study of Socio-Cultural Change in a Complex Society," he wholeheartedly adopted theories from the fields of geography, sociology and economy, which would illuminate the archaeological data and enable him to piece together a complete innovative picture, intermeshing with research worldwide.

Shlomo's teaching career at the Department of Archaeology and Ancient Near Eastern Civilizations began in 1978 and continued until his final year. He taught introductory-level courses on the archaeology of the Land of Israel and the archaeology of Cyprus, Crete and Greece. He also gave classes on archaeological theory, in which he exposed generations of students to the archaeological research

taking place worldwide. In his quiet, unassuming and learned manner, Shlomo taught us all to think archaeology, to read archaeological theory, and to link theory and practice. He encouraged the many M.A. and Ph.D. students he supervised to strive to decipher the complex, to uncover manifold cultural connections, and not to settle for a merely descriptive and cataloguing approach.

In his early years at the Department as a B.A. student, Shlomo participated in excavations and surveys conducted by the academic expeditions of Tel Aviv University. He started out as an area supervisor in the excavations at Tel Aphek-Antipatris and in the surveys of the Sharon and the central Coastal Plain. He also joined the survey expedition to the Sinai. In 1981, together with Israel Finkelstein and Zvi Lederman, he co-directed the excavation of Shiloh and the extensive survey of Mount Ephraim, which completed the excavation. These two enterprises were published in the Monograph Series of the Institute of Archaeology of Tel Aviv University, co-authored by Bunimovitz, Finkelstein and Lederman: Shiloh: The Archaeology of a Biblical Site (Monograph Series 10, 1993) and Highlands of Many Cultures: The Southern Samaria Survey (Monograph Series 14, 1997).

In 1990, Shlomo began what would become his life project—the excavations at Tel Beth Shemesh, an endeavour that he continued, along with his friend and colleague, Zvi Lederman, until the summer of 2019. Over the course of thirty years, Shlomo shaped this project and instilled his spirit in it. The excavations at this site, of great biblical and historical significance, serve as a laboratory for investigation of cross-cultural questions concerned with social order, identity and intercultural encounters, technology, and the establishment of complex political entities. They also illuminate the unique nature of ancient Beth Shemesh, the Shephelah and Judah in the Bronze and



Photo by Amit Etya

Iron Ages. The excavations have exposed the Middle Bronze Age city gate; a palace from the 14th century BCE (the el-Amarna period); an Iron I temple; the earliest known iron-production workshop dating from the late Iron IIA; and public structures and a water system of the Iron IIB.

The findings from Tel Beth Shemesh were published, in the course of the excavations in a variety of leading journals and in publications geared toward the general public. In these articles, Shlomo and his co-authors continued to piece together the mosaic of theory, finds and interpretation. This is especially evident in articles presenting the series of unique finds from the palace of the "Mistress of the Lionesses," the queen of Beth Shemesh in the el-Amarna period, in an article dealing with the cultural response of the Canaanite population of Beth Shemesh to the Philistine settlement in Ekron, and in a series of articles concerned with the innovation of the technology of production of iron artifacts and the importance of this technological innovation to the society and political structure of the southern Levant. This series culminated in the publication of the last article that Shlomo got to see: "Iron Oxide Concretions as Raw Material for Iron IIA Iron Metallurgy in the Southern Levant: New Evidence from Tel Beth-Shemesh, Israel" (published in Journal of Archaeological Science 2020). The crowning glory of the excavations at Tel Beth Shemesh is the final report of the excavations up to 2000: Tel Beth-Shemesh: A Border Community in Judah. Renewed Excavations 1990–2000: The *Iron Age* (co-authored by Zvi Lederman; Monograph Series 34, 2016).

In addition to Beth Shemesh, Shlomo dealt with a myriad of topics in his publications. In the early days of his career, he published several articles proposing a new approach to ceramic vessels and their cultural contexts. His Ph.D. dissertation led to several key publications on the Late Bronze Age and the character of the city states that divided the land. His understanding of the interrelations between the cities of Canaan and the Egyptian regime, as well as the relations among the cities, gave rise to his original explanation of the causes that led to their collapse and to the rise of Israel. Shlomo also published articles dealing with Cyprus and its culture in proto-historical and historical periods.

The appointment of Shlomo Bunimovitz as Professor of Archaeology constitutes the recognition of the scientific community in his achievements and the unique voice he expressed. His students often mentioned his pedagogical abilities, and he earned several certificates of merit and excellence. He participated in many conferences in Israel and abroad, and his lectures always drew large audiences.

Notwithstanding his achievements, Shlomo was a modest man, with a highly developed sense of humor and infinite curiosity. He traveled the world, experiencing many different cultures, and always strived to gain insight from them for the interpretation of archaeological finds. Archaeology was the love of his life, second only to his love of his wife and children. For many, Shlomo was a mentor, a friend and a beloved beacon of erudition. His untimely death leaves a void in the Department of Archaeology and Ancient Near Eastern Civilizations at Tel Aviv University, as well as in the Israeli archaeological community at large.



Apollonia-Arsuf: The 2020 Season

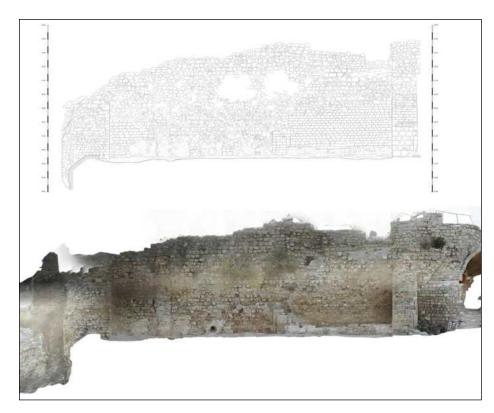
Oren Tal

Since 1977 the town and castle of Arsur have been the subject of extensive and ongoing excavations and research. The castle, at the northern end of the walled town, was built in 1241 CE by a member of the Ibelin family and was leased in 1261 CE to the Order of St. John (Hospitallers), which refortified both town and castle. This occupation continued until their eventual destruction, following a siege by the Mamluks (March-April 1265).

The Israel Science Foundation (ISF) Personal Research Grant, titled "Contextualizing the Architectural Language" of the Military Orders: Reconstructing the Frankish Castle of Arsur in Light of Its Recently Discovered Chapel," came to an end after our 29th summer season, which lasted the entire month of August 2020. As previously reported, the project aims to identify and locate the two religious institutions of Arsur: the castle chapel and the town church. In an effort to buttress the archaeological evidence for our assumption regarding the location of the chapel in the castle, we launched an excavation along the full length of the façade of the castle's western halls, located below the castle courtyard level.

Our ongoing goals have remained the same since our 2009 season in the castle's western façade, as we have managed to uncover the architectural and sculptural elements buried close to the floor level and to expedite the preservation and conservation of the castle's seafacing façade. In our current (29th) season we focused on the castle's western façade northern wing, where we have uncovered a stable. A plastered stone shelf along its eastern wall (preserved some 8 m long, 0.8 m high and 0.4 m thick) was found, with incorporated tying rockcut stones and remains of plastered troughs on top of it. Drainage holes were exposed in the plaster floor of the hall, indicating the collection of liquids, most likely horse urine. The hall is about 20 m long and 8 m wide. While its western wall collapsed, the inner side of the eastern wall displays differences in the quality of building between the well-built southern half and the poorly-constructed northern half. This may suggest that the northern part of the hall was open to the sky. A number of ashy features found on top of the hall's plaster floor indicate cooking activities during the Mamluk siege imposed in March-April 1265 by Baybars, when the site became a refuge for the Knights Hospitaller, as well as for inhabitants of the town and seigneury. The findings recovered during the 2020 season are fascinating and add new aspects to the story of the last days of Arsur.

For more on the Apollonia-Arsuf Excavation Project, Click here



View of the northern hall of the castle's western façade at Apollonia-Arsuf (orthophotograph and drawing created by Slava Pirsky and Sergei Alon)

The 2020 Season of Excavation at Azekah

Oded Lipschits

The Lautenschläger Azekah Expedition was one of the few fortunate teams to conduct excavations during the summer of 2020. The eighth season of excavations was carried out atop Tel Azekah, despite heavy restrictions imposed due to the pandemic. This year the team consisted of some 45 students from the Tel Aviv University B.A. and international M.A. programs. While our international partners and colleagues were sorely missed, it was a special opportunity to work in such an intimate group and truly focus on the educational aspects of the project.

The 2020 season, conducted from July 25 to August 21, included the excavation of three primary areas: W1, E3 and S3. The goal in Area W1 was to complete excavation of the Late Bronze destruction remains (ca. 12th century BCE) and to expose earlier Late Bronze phases, as well as the Middle Bronze fortifications (ca. 20th–16th centuries BCE) situated along the western drop of the upper mound. Under the supervision of Abra Spiciarich, assisted by Maddison Quail-Gates, the team successfully achieved the season's goals and shed greater light on the mudbrick construction of the fortifications.

Excavation efforts in Area E3 were intended to clarify the nature of the Late Bronze structure situated on the eastern slope of the upper mound. Led by supervisor Nitsan Shalom and assisted by Kamal Morad, the E3 team worked with a range of specialists to meticulously expose unique finds, including several human skeletons that were buried below the Late Bronze destruction layer, as well as a number of intact vessels retrieved for future publication and analyses.

Area S3 was a newly launched area, and excavation here began from top soil. Supervised by Helena Roth, with the assistance of Shai Berk, Daniel Nam and Itay Sharir, the team successfully exposed Early Bronze (ca. 32nd-25th century BCE) remains above the bedrock, massive Middle Bronze fortifications and later layers (from the Late Bronze Age, Iron Age and Persian period) on the southwestern part of the acropolis. Future excavation of this area is promising, as it is located near a natural entryway to the site.

One of the most significant achievements of this season, however, was the successful launch of childcare at our basecamp. Over the past eight years of excavation, the Tel Azekah team has witnessed the personal and professional growth of a number of ambitious and talented young archaeologists who have also become new mothers. Creating ways in which young professionals can participate in active projects while maintaining a balanced family life is one of our priorities, and we are pleased to have been able to make a significant step in this direction during the 2020 season.



Pottery washing by Nina Roth, second-generation Azekahite and archaeology enthusiast, and Helena Roth, Ph.D. candidate at Tel Aviv University and area supervisor at Azekah (photo by Alexandra Wrathall)

The Giv ati Parking Lot 2020 Excavations

Yuval Gadot and Yiftah Shalev

Areas 10 and 70 were the focus of this season's excavation in the Givʿati Parking Lot, Jerusalem, which continued throughout 2020, in collaboration with the Israel Antiquities Authority, with only short breaks due to the lockdowns during March and October. We were joined by a group of paid workers, as well as many volunteers—mostly students and tour guides—who found some comfort in being outdoors and remaining active despite the situation. We also hosted a small group of the Department's students on their study dig.

Building 100, uncovered in Area 10, is a public building that was completely destroyed during the Babylonian



Fragments of a storage jar found amid the destruction debris in the easternmost room of Building 100; note the stamped handle (photo by Eliyahu Yannai)

destruction of Jerusalem in 586 BCE. This year we were able to study the destruction in the easternmost room, where we found a group of two or three storage jars, each stamped with a rosette stamp impression (see photo). These jars were used by the royal administration of Judah at the end of the 7th century BCE and were found in 586 BCE destruction layers. Numerous burnt wooden objects were found in the room, and their exact nature will be the subject of future research. Excavation beneath the floors of Room 100 revealed few remains of earlier Iron Age construction.

As we make progress toward the final publication of the excavations in Area 10, we are pleased to note that the finds are now the subject of four Ph.D. dissertations that are underway. The faunal remains are being studied by Abra Spiciarich (in collaboration with the Laboratory of Zooarchaeology), who is researching the dietary practices of people living in Jerusalem during the Iron Age and the Persian and Hellenistic periods. The wood economy of Jerusalem during the Iron Age will be studied by Yael Hochma (in collaboration with the Laboratory of Archaeobotany and Ancient Environments), and the wood remains from Building 100 are an important component in this research project. Nitsan Shalom is conducting a comprehensive geo-archaeological study of the destruction, in collaboration with the Weizmann Institute of Science. Finally, an exceptionally well-made plaster floor found within the rubble and collapse serves for the reconstruction of the Earth's magnetic north in 586 BCE. This study is being conducted by Yoav Vaknin in collaboration with the Paleomagnetic Lab at the Institute of Earth Sciences, the Hebrew University of Jerusalem.

In Area 70, located at the easternmost point of the excavation, Late Roman, Byzantine and Abbasid remains have been found. The Abbasid layer included several long walls belonging to a structure and some plastered installations between them. The most impressive installation was a built cistern that was turned into a cist pit. It is over 3 meters deep (we have yet to reach its bottom) and completely plastered. Inside the pit we found dozens of pottery vessels and what are most likely fecal remains. As we continued to dig below the Abbasid period, we found the easternmost wall of a Late Roman villa. In coming months, we plan to continue the excavation, expecting to find remains from the Early Roman and Hellenistic periods and hopefully also the Iron Age.

Tel Hadid: The 2020 Season

Ido Koch

The third season of excavations at Tel Hadid took place in the shadow of the pandemic that has affected us all. We greatly missed our American partners from New Orleans Baptist Theological Seminary, who could not join us. Our bare-bones staff included ten Ph.D., M.A. and B.A. students from Tel Aviv University, who were in charge of all administrative and logistic issues—ranging from picking up volunteers, bringing the equipment and fixing shade nets to preparing breakfasts—joined by 25 additional students and volunteers from neighboring communities.

During the three weeks of excavation (June 28–July 16), the team brought to light valuable finds in two areas, which have been under investigation since 2019. In Area CC, located at the center of the site just below the western slope of the upper mound, an excavation group, supervised by Ruthy Lewis with the assistance of Amit Etya, further exposed a huge Byzantine-era winery. Vats, channels and mosaic floors were revealed, demonstrating the extent and complexity of the winery. In Area AAU, farther to the north, adjacent to the Road No. 6 tunnel, another group, supervised by Alexandra Wrathall with the assistance of Michael Allwood and Carmen Elberg, uncovered dozens of pottery vessels within and around a depression in the bedrock, as well as intriguing faunal remains that will be excavated during the next season.

Our third excavation group, led by Noa Ranzer and Omer Ze'evi-Berger with the assistance of Noam Kodesh and Noga Rapaport, was in charge of probing the site in various areas—the upper mound, its slopes, terraces and olive orchards. The task was to understand site-

formation processes, to reassess the results of the survey we conducted in the last three years and to evaluate possible future excavation areas. The findings are illuminating, pointing to strong indications of the Iron Age and the Hellenistic period on the slopes of the upper mound and in more distant areas. We now face the task of deciding where and when these new areas will be opened.

Finally, we advanced our understanding of al-Haditha, the village that was destroyed in the 1948 War. We surveyed additional portions of the village and applied GIS mapping to correlate aerial photos taken in 1918 and 1946 with the site's orthophotographic image (created by Omer Ze'evi-Berger) and the finds on the ground. We hope to start investigating the remains of the village next year.

We are all proud of the team for completing the season despite the constant risk of COVID-19. We look forward to starting our fourth season on June 13, 2021 and hope that our American partners will be able to return.

To learn more about the excavation at Tel Hadid, <u>click here</u>



The Byzantine-era winery in Area CC, end of 2020 season (photo by Omer Ze'evi-Berger)



The Tel Hadid team at the end of the 2020 season (photo by Noam Kodesh)

The Tell Izṭabba (Nysa-Scythopolis) Excavation Project: The Winter 2020 Season

Oren Tal

The German-Israeli Tell Iztabba Excavation Project, now in its third year, is conducted by the Institute of Archaeology of Tel Aviv University and a team from the University of Münster, headed by Prof. Dr. Achim Lichtenberger. The project, titled "Tell Iztabba (Nysa-Scythopolis): High-Resolution Hellenistic Settlement Archaeology and the Reassessment of the Formation of the Decapolis," is mainly funded by the German-Israeli Foundation (GIF). Located close to Beth Shean (and within the Beth Shean National Park), Tell Iztabba is one of the key Hellenistic sites in the southern Levant. The current study consists of a new and comprehensive archaeological investigation of the site (Tell Iztabba, East) by means of surveys, geophysical prospections and excavations. We have thus far generated a new site plan that enables digital modeling and a careful analysis of the site's gridded town plan.

By now the team has excavated four areas at various locations on the mound. Excavations on the northern terrace (Area A) suggest that this part of the site was not incorporated into the Seleucid settlement, as the archaeological remains on the northern terrace show indications it was in use during both the Early Bronze Age and the Byzantine period. The northern extent of the site was reached farther south in Area B, where Hellenistic-period domestic structures were unearthed. These structures belonged to the Seleucid foundation,

which was destroyed by the Hasmoneans at the end of the 2nd century BCE, bringing about an abrupt end to urban life on the mound. Similar domestic quarters of identical orientation, encountered farther south in Area C. were also violently destroyed. In general, the settlement is well planned, with houses arranged around courtyards. The inventory of the houses displays a connectedness to the broader Mediterranean world that is expected of a settlement of this kind, especially concerning the use of colored stucco. Nevertheless, the excavated Hellenistic domestic architecture shows the predominance of local building traditions. In Area D (east of Area C) we have unearthed a monumental building from the Byzantine period built on top of a Roman-period structure. It is likely that the architectural spolia (Ionic capitals and fragmented column shafts in secondary use) of this Byzantine "Podium Building" belonged to an earlier Roman structure from the 2nd/3rd centuries CE. It is now clear that while the construction of the city walls across Tell Iztabba to its full extent occurred in the Byzantine period, the site had already been reoccupied in Roman times, although the scope of this occupation and character remains uncertain. Our new results provide a more multi-faceted picture of the site's history after its Hasmonean destruction.

For more on the German–Israeli Tell Izṭabba Excavation Project, <u>click here</u>



Aerial view of Tell Iztabba's Area D during the February 2020 season (photo by Slava Pirsky and Sergei Alon)

Masada under Siege (Again)

Guy D. Stiebel and Boaz Gross

The fourth excavation season of Tel Aviv University's Neustadter Family Expedition to Masada took place during February 2020. Unlike most other expeditions of the archaeological institutes and departments in Israel this year, we were lucky to complete a full successful season right before the COVID-19 lockdown, the shutdown of commercial flights and the closing of the country's national parks—of which Masada is the most visited.

It was a close call indeed. Some of the first reported cases of the virus in Israel originated with a tour group that insisted on carrying out one of the most thorough tours of the Holy Land from north to south since Edward Robinson himself, and naturally, Masada was a must. As an academic expedition, our first concern was for our team members and students. A quick yet comprehensive investigation concluded that our team had not been in contact with the group, and crucially, not in the close confines of the cable car—our only means of comfortable transportation from the base of the mountain to the excavation areas at the top.



Masada Expedition's area supervisors Angela Hodson, from the international program (left), M.A. student Rikki Zalut (center) and Heidi Maynard, from the international program (right), on the last day of the 2020 season (photo courtesy of Masada Expedition)

All the tension and uncertainty, along with the growing sense of the pandemic closing in around us, did not stop the expedition from continuing its field work, discovering new and exciting information and having a bit of fun in the process. After all, there is a long tradition of sieges at Masada...

In Area A, one of the expedition's original and principal locations, the domestic remains of the Jewish rebels in the Great Revolt continued to emerge. The most compelling discovery was made—as is so often the case—on the final day of the season: the remains of what appears to be a workshop for arrowheads were uncovered in this area. In the coming season we hope to carefully investigate this exciting find.

In Area B, the hard-working team members exposed more of the cistern complex dating to the time of Herod the Great's palatial retreat, as well as the still quite mysterious cave that likely pre-dates it. If that is indeed the case, the cave may be one of the very rare physical manifestations of pre-Herodian activity on the mountain.

In Area C, an additional cave, used by the Byzantine hermits who dwelled on the mountain enclave during the 5th–7th centuries CE, was explored further. The cave exposed evidence of lime industry, probably from the Early Islamic period, revealing yet another unknown chapter in the history of the site.

The ongoing archaeobotanical research of the main occupational phases of the mountain, conducted in cooperation with Dr. Dafna Langgut and her team, yielded more samples for analysis. These will shed light on agriculture, economy, horticulture and dietary practices in the heart of the desert during the days of Herod and the period of the Great Revolt.

Alongside the dire health and economic crisis that the COVID-19 pandemic has wreaked worldwide, we were lucky to avoid the impact it had in almost completely halting Israeli academic fieldwork. We are grateful for that, but we are even more relieved that our team members and staff were all safe despite the unforeseen turn of events. We wish to take this opportunity to thank them for their hard work, trust and dedication, despite the uncertainties that grew as the season progressed with the spread of the disease around the world.

See you on the mountain.

Brave Old World: Excavating in Timna in the Early Days of a Pandemic

Frez Ben-Yosef

The extreme heat of the desert saved our 2020 field season. in the ancient copper-production district of Timna Valley. Because of the heat we usually excavate during the winter, and this year was no exception (once, when we had to dig in July, we truly understood the inspiration for the name of one of the smelting camps—"Slaves' Hill"). Thus, by the time the pandemic had started to disrupt everyday life we were already back in Tel Aviv after a full season of excavations and surveys with a diverse international team of students and volunteers. As luck would have it, some members of a group of tourists who visited Timna Park during their trip to the Holy Land—and even met with some of our team members—were later diagnosed COVID-19 positive. Fortunately, none of us contracted the disease.

The field season included work in several locations: we continued our exploration of Iron Age Timna with excavations in two of the smelting camps in the center of the valley (Site 12 and the newly-discovered "Crocodile Site"), looking for more evidence to address social and technological questions. Our work on these sites is part of an ongoing (and heated) discussion on the emergence connections to the Jerusalem of David and Solomon.

of the area between Timna and the closest water source following the original Arabic names of Timna and Yotvata, respectively), which is being conducted as part of the Ph.D.

of the Edomite Kingdom in the Arabah and its possible In addition to the work in the valley, we began exploration the Yotvata oasis. This was carried out in the framework of the new Mana'iyya-Ghadian Regional Survey (MGRS,

Willie Ondricek explains the results of excavations at Site 12, an early Iron Age copper-smelting camp in Timna (photo by Hai Ashkenazi)

research of our student Assaf Holzer. One of the main goals of this pedestrian high-resolution survey is to shed light on human activities in the third millennium BCE (Early Bronze Age). During this period, copper production took place outside Timna Valley, on small hills that allowed the exploitation of natural winds for the operation of smelting furnaces. One such hill is located in the survey area ("Site 201" in Beno Rothenberg's old survey) and was also excavated by us as part of the 2020 season. The excavations exposed a complete production workshop with all the stages in the processing of raw ore into metal—from the sorting and crushing of copper minerals to the final refining of the metal.

Next to the copper-smelting workshop of Site 201 (and still part of the site) we excavated a large tumulus, where we exposed human remains. Despite the proximity to the Early Bronze Age workshop, we have not yet determined whether the burial was contemporaneous with the copper production; we await the radiocarbon results to resolve this. In fact, most of the information on the ancient human activities that we set out to explore will be gained by various kinds of lab work. The field season is only the beginning, and now we are working on the analysis of the various finds—from pottery, flint and metallurgical debris to bones and other organic remains.

The assistance of the Israel Antiquities Authority and the Israel Nature and Parks Authority (the MGRS is mostly conducted in nature preserves) contributed greatly to the success of our 2020 field season.



Excavating at Site 201, an Early Bronze Age copper-smelting workshop (photo by Hai Ashkenazi)



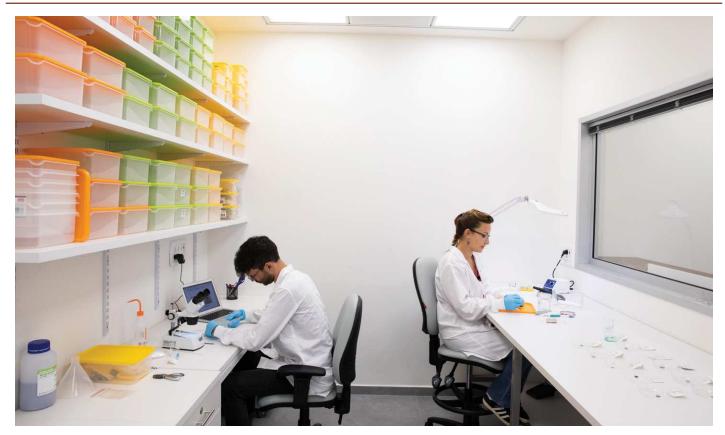


Photo by Sasha Flit

The Laboratory for Conservation of Metallic Artifacts

Diana M. Medellin

fter months of planning, restructuring of spaces, installation of equipment and purchasing of materials, the Sonia and Marco Nadler Institute of Archaeology at Tel Aviv University opened the doors of the Laboratory for Conservation of Metallic Artifacts in May 2020. This new lab serves as a space dedicated to the care, preservation and safeguarding of the many delicate objects discovered during the Institute's archaeological excavations.

But what does the work of a conservation lab involve, and why is it important to have one in our Institute? According to prominent conservation-restoration theorist Cesare Brandi, conservation is defined as:

"The methodological moment of recognition of the work of art, both in its physical composition and in its aesthetic and historical bipolarity, before being transmitted into the future" (Brandi, *Restoration Theory*, Madrid, 1988: 15).

In line with Brandi, we see that the discipline of conservation aspires to recognize the artistic, aesthetic, historical, research, educational and sentimental values of the cultural heritage, to perform specific treatments to rescue, visualize and preserve those values, making them accessible to present and future generations.

Conservation involves so much more than merely cleaning dirty objects or gluing together broken items. We study



Examples of treatment results: coins from Ashdod-Yam (A), Masada (B) and Tel Azekah (C and D) (photo by Diana M. Medellin)

the interaction between the constituent material of an object and its environment, identifying the effects of the interplay between climate and human use which determine an artifact's ultimate state of preservation or deterioration. It is a complex task that requires knowledge of chemistry, biology, history and art, as well as involving infinite patience and manual skills. Hence, it must be exercised by a professional conservator/restorer with knowledge of the international regulations and of the latest studies regarding the techniques and materials applied to conservation (for the terminology adopted in 2008 by the ICOM Committee for Conservation, click here).

Conservation actions may begin from the moment an artifact is dug up from the ground-for example, with the implementation of measures to prevent an abrupt change in the environmental conditions of the unearthed objects, or by protecting them in suitable packaging made of inert materials. These measures are termed preventive conservation: procedures and actions aimed at avoiding and minimizing future deterioration or loss, applied to the context or surroundings of the object. These measures do not interfere with the materials and structure of the items and do not modify their appearance. They are strictly for the purpose of regulating environmental conditions. such as light, humidity, pollution and pest control, while facilitating handling, display and use.

Having a conservation lab in our Institute allows excavated objects to receive preventive treatment almost immediately following excavation. In the case of metal artifacts, this "first aid" begins with a drastic reduction in relative humidity, lowering it to 20% using silica-gel (amorphous silicon dioxide) or desiccator, which inhibits further corrosion, because oxidation cannot occur in the absence of environmental moisture. To prevent degradation from acidity, it is important to properly package artifacts, taking them out of any cardboard boxes or brown paper bags in which they may have been temporarily stored and removing any tissue paper, cotton, or other hygroscopic or acidic material. Then the objects are individually packed in perforated polyethylene bags and placed into plastic food containers. To avoid galvanic corrosion, it is crucial to prevent artifacts made of different metals from touching each other.

The processes that are carried out after degradation has already occurred are known as remedial conservation: actions directly applied to an item or a group of items aimed at arresting current damaging processes or reinforcing their structure. These actions are only carried out when the items are in such a fragile condition or deteriorating at such a rate that they could be lost within a relatively short time.

Such treatment is devised only after identifying the constituent metal (by visual means), studying the condition of the objects, and paying particular attention to the type of corrosion. Corrosion is the main alteration affecting metals. With the exception of gold, all metals and metal alloys will be subject to a certain degree of corrosion. There are two types of corrosion: passive and active. Passive corrosion, which is stable, protects the metal and does not alter the morphology of the object, is generally referred to as "patina." Active corrosion causes progressive degradation of the core metal, distorting the shapes, texture and tonalities of the objects, as well as covering important iconographic representations, inscriptions and details of manufacturing techniques. Other potential alterations of metallic artifacts include fragmentation, deformation, abrasion, incisions, stains and loss of pictorial layer.

A conservator performs a specific treatment for each object depending on its constituent material and provenance. An iron ring excavated at Ramat Raḥel requires a different treatment than a copper coin from Azekah or a silver weight from Ashdod-Yam. In the lab, we have the equipment, tools and reagents necessary to perform mechanical cleaning, chemical treatment (with weak acids or alkalis), electrolytic or galvanic cleaning, as well as passivation and surface coatings. We practice only scientific conservation techniques, with verifiable and published results using only materials physically and chemically compatible with the composition of the original artifact.

Another advantage of having the conservation lab in our building is that the conservator can be in constant communication with researchers, in order to determine the most appropriate level of cleaning and treatment for each artifact. The transportation of objects is minimized, and researchers continue to have access to the items throughout the intervention process.

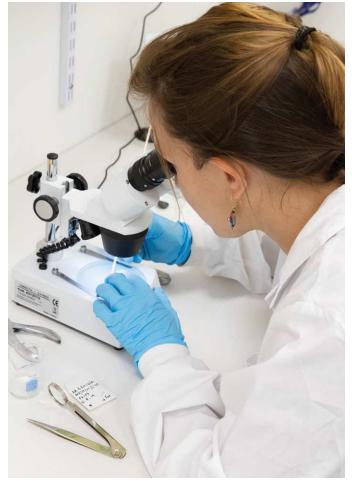
Conservation does not end once the object is treated—it must continue throughout the entire life of the object. The two main actions to maintain are low relative humidity and handling the object with new and clean gloves, never with bare hands. In the conservation lab, we have permanent storage space and one large desiccator, where hundreds of objects can be permanently stored under ideal conditions.

In the eight months that have passed since the opening of the lab we have treated more than 200 items from Apollonia-Arsuf, Ashdod-Yam, Tel Azekah, Tel Beth-Shemesh (East), Masada and Ramat Raḥel. Many of these are copper-alloy coins, but we also have silver coins, jewelry, weights, arrowheads, fibulae, needles and pins, and we hope to add more materials and sites to the ever-growing list.

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Mechanical cleaning (photo by Sasha Flit)



Studying the condition of the object (photo by Sasha Flit)



(photo by Sasha Flit)

The Ceramic Petrography Laboratory

Paula Waiman-Barak

he Sonia and Marco Nadler Institute of Archaeology at Tel Aviv University celebrated the launch of the Ceramic Petrography Laboratory in 2020. This lab is one of several of the Institute's laboratories specializing in the study of ancient materials and archaeological remains, which will explore and develop a variety of new methodological approaches to the study of ancient materials, curate multiple raw material assemblages, and engage in experimental archaeology.

Ceramic petrography is a well-established analytical method used to determine the mineralogical composition of clay artifacts in order to identify the production techniques and geographical provenance of the materials employed in their manufacture. The primary purpose of the Ceramic Petrography Laboratory is to provide a platform

for researchers and students to explore and practice techniques and theories used to analyze ceramic finds from sites throughout the eastern Mediterranean Basin, dating from a wide range of chronological periods.

Petrography offers us a view into the ecosphere of the potters, merchants and consumers of the past. Ceramics were relatively inexpensive to produce, compared to most artifacts. This aspect, coupled with their frequent breakage and general inability to be recycled, has created an abundance of archaeological material that embeds a world of cultural, economic and technological choices. The data afforded by ceramic petrography informs research on human-geographic connectivity and the social adaptation of ancient societies within changing environments.

In addition to work on ceramics, the lab will develop new methodological approaches composed of other types of materials, such as stone and plaster. The lab will also support research in experimental archaeology and sediment analysis.

Particular attention will be given to constructing a large reference collection of geological and archaeological thin section samples which will be available to the faculty and students. The Ceramic Petrography Laboratory already has an extensive inventory of over 7,000 thin sections of ceramics and geological reference samples, and we are dedicated to its continuous expansion.

Apart from its commitment to research, the Ceramic Petrography Laboratory serves as a hub of educational development. The entire laboratory space is designed to facilitate academic enrichment, by providing students routine access to specialized equipment, customized learning resources and a collaborative research environment. Academic research will be accompanied by courses for B.A. and M.A. students, in which they will explore aspects of provenance studies, pottery production and use, optical mineralogy, light microscopy and its applications for archaeological research. Classes will combine theoretical study with hands-on practice in the production and interpretation of thin sections of ceramics and geological materials.

The lab team is also proud to collaborate with the Levantine Ceramics Project (LCP, https://www.levantineceramics.org/), initiated by Prof. Andrea Berlin of Boston University and with Dr. Paula Waiman-Barak serving as Petrographic Editor. The LCP is an open-access interactive website that facilitates the sharing of ceramic information to a global community of researchers. The LCP encourages the free flow and access to information and archaeological data. As a result, members of the Ceramic Petrography Laboratory become ambassadors connected to a range of projects while also contributing to the availability of new and essential data.

Lab members

Two students from the international M.A. program in Ancient Israel Studies, Yeonsuk Lee and Maddy Butcher, are currently working in the lab. They have already acquired practical skills in the preparation and

documentation of vessels, samples and thin sections of ceramics and sediments alike. They are both slated to participate in experiments with firing processes, scheduled to begin this fall. They are proficient in the utilization of a selection of analytical methods and comparative data to study provenance and technological trajectories of serving, cooking and transport vessels.

In addition to the laboratory work, Yeonsuk Lee, from Seoul, South Korea, will be applying procedures acquired in the lab to explore ceramic assemblages from well-stratified contexts dated to the Middle Bronze Age and Late Bronze Age at Azekah.

Maddy Butcher, originally from London, has just graduated, with her M.A. thesis, under the supervision of Dr. Omer Sergi and Prof. Oded Lipschits, titled: "Cylindrical Holemouth Jars from the Kingdom of Israel: Analysis of Typology, Distribution, and Historical Context." She is currently researching the provenance and technology involved in the manufacture of Iron IIA holemouth jars and other vessels from Horvat Tevet, Tel Megiddo and Tel Rehov. This work is conducted as part of an international and interdisciplinary project, titled "Archaeological Expression of Palace Clan Relations in the Iron Age Levant: A Case Study from the Jezreel Valley, Israel" (financed by the Gerda Hankel Stiftung, AZ 20/F/19) directed by Omer Sergi (Tel Aviv University), Dr. Karen Covello-Paran (Israel Antiquities Authority) and Prof. Hannes Bezzel (University of Jena, Germany).



The Ceramic Petrography Laboratory, Paula Waiman-Barak preparing a thin section (photo by Sasha Flit)



Sampling a Philistine goblet from Tel Qasile (photo by Sasha Flit)



Maddy Butcher holding a holemouth jar from Tel Reḥov (above) (photo by Paula Waiman-Barak); a holemouth jar from Ḥorvat Tevet (a), showing a freshly cut break (b); thin section in cross and plain polarized light under X100 magnification (c and d) (photos by Maddy Butcher)

Academic collaboration

In addition to research within the Institute, the Ceramic Petrography Laboratory collaborates with other universities in Israel and abroad:

- Tel Qasile, Philistine settlement and an Iron Age harbor, the publication of the 1949–59 and 1982–92 excavations, a project initiated by Prof. Amihai Mazar of the Hebrew University of Jerusalem.
- Iron Age ceramics in southern Phoenicia, primary investigators: Prof. Ayelet Gilboa and Prof. Gunnar Lehmann, Israeli Science Foundation, 596/18.
- Hala Sultan Tekke: provenance analysis of Late Bronze Age ceramics and stone anchors, in collaboration with Prof. Peter Fischer and Dr. Teresa Bürge of the Institute of Ancient Culture and Civilization, University of Gothenburg, Sweden, and of the Austrian Academy of Sciences, Vienna.



Lab resources and facilities

- Reference collections of ceramics in thin sections
- Reference collections of rock and sediments in thin sections
- Reference collections of ceramic and geological samples
- Polarizing microscopes (3) and a zoom microscope equipped with a digital camera
- Dino-lite
- Small furnace for firing experiments
- Ecomet® 30 Twin Grinder-Polisher
- PetroThin® Thin Sectioning System
- Low-speed saws with a diamond blade

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The Computational Archaeology Laboratory (CompArchTAU)

Ortal Harush



(photo by Sasha Flit)

rchaeology is by its nature a highly interdisciplinary field of research, especially in its application of the methods of the exact sciences. During the past decade, in light of new developments in digital technology, there has been a continuous trend toward the integration of computational methods into archaeological research. These methods for collecting, processing and analyzing computational data allow archaeologists to engage in innovative research and examine past cultures from new perspectives.

This October, a new computational archaeology laboratory (CompArchTAU) was opened in the Sonia and Marco Nadler Institute of Archaeology at Tel Aviv University. The lab was established in order to develop computational research projects using 3D scans of archaeological finds. The lab is equipped with an optical 3D scanner (Polymetric—PT-M) capable of producing high-resolution 3D models of a wide variety of objects: from small seeds to ceramic sherds, stone artifacts, architectural elements, and even elephant tusks.

The 3D models produced in the lab may serve several purposes. The models themselves can be used for the presentation of finds in the classroom, at academic conferences, and in museums. They can likewise be utilized to produce drawings for scientific publications. Since these digital drawings are automatically generated from scans of the artifacts, they are faster to produce, more accurate, and more objective than traditional hand drawings. However, the primary use of archaeological 3D models is in computational research.

The processing of 3D models for documentation and research purposes is achieved via programs that were developed specifically for archaeologists by the computational archaeology lab headed by Prof. Leore Grosman at the Hebrew University of Jerusalem. These programs enable the user to position the scanned models in a consistent manner, to accurately and easily measure artifacts, and to compare them statistically in order to address a wide range of archaeological research questions. For example, computational methods can be implemented in order to study production technologies, to

quantify the shapes of finds, and to identify the differences and similarities between groups of objects. When cross-analyzed against multiple streams of data provided by interdisciplinary collaboration, these methodologies have great potential to provide new insights across all archeological periods.

In addition to research, the Computational Archaeology Laboratory will facilitate the introduction of computational methods into the work of students and researchers at the institute. This year, the Department will offer a course titled "Computational Archaeology in 3D" for undergraduate and graduate students. They will be presented with recent developments in computational archaeology and will carry out a personal research project using the tools offered by the lab. The objective of this course is to promote the implementation of innovative methods among the next generation of archaeologists.

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Polymetric structure light scanner (photo by Sasha Flit)



Stamp Seals from the Southern Levant: A Multi-faceted Prism for Studying Entangled Histories from an Interdisciplinary Perspective

Christoph Uehlinger, Stefan Münger, Silvia Schroer and Ido Koch

This four-year research project addresses stamp seals, a common but valuable and multi-functional artifact class which offers scholars unique insights into a variety of social, economic, cultural and religious aspects of ancient Levantine history, particularly in pre-Hellenistic times. Its core aim is to develop an online open-access, collaborative and expandable database titled "Corpus of Stamp Seals from the Southern Levant" (CSSL), which will serve as an ongoing reference tool for researchers in several disciplines, including archaeology, ancient history, biblical studies, history of religion, Mediterranean studies and the exact sciences.

Taking its starting-point from groundbreaking research initiated in the 1970s by Othmar Keel, particularly through his *Corpus of Stamp-Seal Amulets from Palestine/Israel* (CSSPI) and the *Corpus of Seal Amulets from Jordan* (CSAJ), the project will expand upon previous work while fully engaging the digital humanities transition. All relevant data will be converted from preexisting media into a digitized research infrastructure. Fulfilling latest open-access requirements, the new database will allow for active contributions by all interested scholars worldwide. Conceived to be easily updated and expanded, the database will remain operative for decades to come.

The focus of CSSPI will be expanded to wider regional concerns by removing modern borders from historical consideration. Although the designation "southern Levant" typically refers to the territories of present-day Israel, Jordan and Palestine, CSSL will enable the integration of additional data from sites lying beyond those confines, for example central and northern Levant, the Egyptian Delta, or the Arabian Peninsula.

One particular aim of the project is to increase the value of the data through interdisciplinary cooperation involving the specialized expertise of an international network of scholars and institutions. Up-to-date and thorough documentation will facilitate innovative studies in archaeology, biblical studies and history of religion by senior scholars, post-doctorates and Ph.D. candidates from the University of Bern, Tel Aviv University and the University of Zurich. They will investigate seal designs and their iconography in religio-historical context; issues of social archaeology, political history, economic history,

biblical studies and gender will intersect in a study of seal use by women. We will endeavor to draw upon the full potential of the glyptic material to develop new approaches to the history of ancient Levantine society, culture and religion and to the study of biblical texts. Last but not least, a crucial aim of the project is to bring the study of ancient glyptics into dialogue with scientists. An overall objective is to transmit established expertise and to encourage a new generation of scholars to pursue, consolidate and renew the study of ancient glyptics as a key medium for understanding historical entanglements in the southern Levant.

CSSPI's development over almost 50 years reflects tremendous changes in scholarship, in terms of technology, methods, theoretical models and academic paradigms. Adding a self-reflective dimension to the project should allow us to historicize our own research, to critically reflect how historical knowledge is framed by the conditions of its production, and to evaluate how much our research is embedded in and impacted by changing concerns of society at large.

This Sinergia project, funded by the Swiss National Science Foundation (CRSIIS_La6426), is jointly led by Prof. Dr. Christoph Uehlinger of the Department of Religious Studies at the University of Zurich, Prof. Dr. Stefan Münger of the Institute of Jewish Studies at the University of Bern, Prof. Dr. Silvia Schroer of the Institute of Old Testament Studies at the University of Bern, and Dr. Ido Koch of the Department of Archaeology and Ancient Near Eastern Cultures at Tel Aviv University. The project began in January 2020 and will continue until December 2023.



New Kingdom scarab from Tel Azekah (courtesy of Oded Lipschits)

Tomorrow Never Knows: An Investigation of the Technical Terminology of Babylonian Divination

Yoram Cohen

The aim of my research project is to investigate the technical language of Babylonian divination, which spread throughout the ancient Near East and was practiced in Canaan. While considerable progress has been made over the course of the past two decades, several crucial terms used in divination literature still evade our understanding and therefore require further investigation. Additionally, the recent publication of several texts, some of which were previously unknown to most scholars, makes it possible to embark upon an innovative study of the technical terms employed by this textual genre.

My research makes use of a novel approach to interpreting several previously unknown or misunderstood technical terms: a system of metonymy or metaphor between the technical terms of the omen sentence, which sees a negotiation between tenor and vehicle. The research project will provide new paths to explore the language of written divination, a textual genre of the utmost importance in the social and cultural life of Mesopotamia

and the greater cuneiform world for a period of over one thousand years.

It is expected that a full review of these technical terms will elucidate fundamental principles that underlie the interpretation of signs, thus significantly progressing our knowledge of the interpretative techniques used by the diviner. By explaining what remains obscure, my research will not only contribute to the study of extispicy (liver omens), but will open the door for explaining additional poorly understood terms in other divinatory fields, such as astrology.

The research (ISF Grant No. 1801/20) will proceed with the following steps: 1) assemble data for a gazetteer of the topography of the liver; 2) analyze the results in order to place the various terms on an imaginary map of the liver; and 3) build a 3D model of the liver with its parts fully marked and linked to fuller explanations, diagrams and primary and secondary sources. This model, along with the gazetteer, will be made available online for the academic community.



KUB 37.223, a 3D imaging of a clay liver model from Boğazköy (courtesy of the Hittite Portal)

Cult and State Formation in the Region of Judah: Moza as a Case Study

Shua Kisilevitz and Oded Lipschits

The discovery of a monumental temple complex at Tel Moza in 2012 and the subsequent analysis of its finds served as the impetus for the Moza Expedition Project in the spring of 2019 on behalf of the Sonia and marco Nadler Institute of Archaeology at Tel Aviv University. The unique complex, which included at least four stages of development within the Iron II (late 10th to early 6th centuries BCE), was constructed directly above an earlier Iron IIA cult structure that was partially exposed and tentatively dated to the 10th century BCE. Both the cultic remains at Moza and their continuity are unparalleled in the southern Levant during this period, and they provide a case study for the formation of Judahite cult during the period in which the kingdom was established. These temples afford an opportunity to approach the study of cult in Judah from a new perspective that is rooted in tangible remains and set within the framework of both the ancient Near East and the biblical narrative.

Accordingly, the current project has two goals: 1) to fully expose the temple complex, including its immediate surroundings, and to provide a final publication of its finds, and 2) to reconstruct the development of cult in the Kingdom of Judah from its inception in the Iron IIA to its demise in the Iron IIC, analyzing it from archaeological, historical, economic, social and geographic perspectives. To achieve these goals, the project will combine the results

of seasonal excavations, supported by the Gerda Henkel Stiftung in Germany (Grant Nos. AZ 65/V/19 and AZ 24/F/20), with a comprehensive study of the architectural and material remains uncovered during the six seasons of salvage excavation conducted at the site by the Israel Antiquities Authority between 1993 and 2013, supported by the Israel National Science Fund (ISF Grant No. 252/20).

The study of the temple's finds, together with the clarification of its phases and the sequence of the site's development, will serve as the basis for a comparative analysis of the Moza temples with contemporaneous cultic remains throughout the region. The conclusions derived from this study will be further examined against the historical backdrop of Iron Age Judah, and a discussion of the portrayal of Judahite cult in the biblical narratives will be presented. Ultimately, the study aims to provide an overview of the continuities and changes in cultic traditions in the region of Judah during the entire Iron II and to consider the social, economic and religious processes they may reflect. The study proceeds from the premise that any discussion of cult in Judah should be based first and foremost on the archaeological and historical evidence and only then should the heavily debated biblical narratives be considered. It is hoped that the results will constitute a foundation for future discussion of Judahite cult and the formation of the so-called "Israelite religion" in both scholarly discourse and popular debates.



Aerial view of the temple complex at the end of the 2013 excavation season (photo by Pascal Partouche, Skyview)

A Corpus of Samarian Coinage (ca. 4th Century BCE)

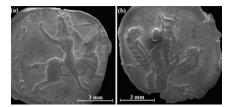
Oren Tal

Since they were introduced some 2,650 years ago, coins have become an integral part of daily life, reflecting in their own way some of humanity's deepest aspirations. From generation to generation, kings, rulers, cities and states have issued countless coins, which offer a wealth of insights into the actions of individuals and societies. Although diminutive in size, coins are significant historical documents. Their symbols and inscriptions make it possible to trace the unwritten history of states and cities and to confirm obscure accounts from other sources. Most importantly, because coins constitute direct physical evidence of a period, they have a certain advantage over information from literary sources—especially since ancient historians often copied their material from other writers, and most did not witness firsthand the events they wrote about. Deciphering the language of coins—their vocabulary of symbols and abbreviated inscriptions—uncovers a treasure trove of information about the societies that minted them.

The two centuries of Achaemenid dominion in the Near East, from 538 until 332 BCE, comprise a crucial period in the history of the southern portion of the Fifth Persian Satrapy—"Beyond the River." This period is marked by a profound transformation in the economic, political and

cultural life of the region. From the mid-5th century BCE, we witness a transition in the means of payment, from the use of weighed metal to that of foreign coinage and, subsequently, local issues.

The current research program (ISF Grant No. 2883/20) aims to study the typology, circulation, quantification and metallurgical composition of the coinage of Samaria—one of the first mints to strike coins in the southern Levant, which, along with the mints of Philistia, Judah and possibly Edom, advanced the use of coins in the southern Levant. The goal of this endeavor is not only to present the entire corpus of Samarian coins from this period, but also to put forward a new typology of these coins, given the fact that we are dealing with some 250 coin types, representing some of the more diverse mints of the Levant in particular and of the Old World in general. The quantification aspect of the project will make use of die links between the coins, as well as provide a statistical model. The archaeo-metallurgical aspect of the project will involve trace-element analysis of the chemical composition of the coins in order to determine the source of their constituent metals and enhance our understanding of the processes involved in their manufacture.





SEM images of Samarian coins in the Nablus Hoard



The Samaria Hoard (CH 9.413 Samaria, before 1990) (photo by David Harris, Israel Museum, Jerusalem)

Contextualizing the Dead from PPNB Naḥal Yarmuth 38: A Novel Histotaphonomical and Archaeothanatological Approach

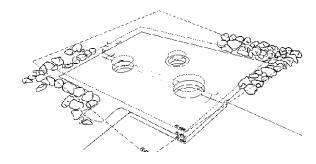
Avi Gopher

This proposal focuses on the Pre-Pottery Neolithic B (PPNB) site of Nahal Yarmuth 38 with the intent to address two objectives. The first aim is to contextualize the dead unearthed at the site by reconstructing post-mortem processes (biographies) of the dead from the moment of demise to their being placed in their final resting place. This will be achieved by combined histotaphonomical and archaeothanatological (as well as C, N, Sr isotope) analyses carried out on site during the excavation and later in the lab, using the designated protocols of sound innovative methodologies developed in recent years. The second aim is to carry out a full analysis of the architectural features and find assemblages unearthed at Yarmuth 38 in order to design a list of criteria that may help determine whether the PPNB Yarmuth 38 should be viewed as a funerary site. Beyond meticulously analyzing the entire array of finds and records collected at the site during the intensive 2017–2018 excavation season, a simulation intended to evaluate what may be expected from a funerary site, as opposed to an occupation site, will be developed based on our own finds at the site and on the entire body of evidence from Levantine PPNB burial contexts to date. Preliminary observations of finds have already given indications that Yarmuth 38 may be considered a PPNB funerary site, particularly its square lime-plastered stone-built structures that have shown no potential roofing, or common residential features, and the high density of human skeletons concentrated within those structures (primarily under their plastered floors). Additional finds may provide further relevant data. These include: faunal assemblages; lithic assemblages containing a significant component of complete high-quality PPNB flint tools; an outstandingly rich assemblage of both marine and fresh-water shells (some found within the burials); a

collection of body ornaments (mainly beads and pendants) and single imagery (art) items.

This study will be based on the hypothesis that an in-depth study of Nahal Yarmuth 38's architectural features and spatial organization, a thorough analysis of the aforementioned find assemblages, and continued small-scale high-resolution excavations will provide enough reliable data to conclude that the site should be defined as a funerary site. Our results will be compared to the list of defining criteria constructed for the PPNB burial site at Kfar HaHoresh—the only PPNB site interpreted as a burial site in the southern Levant. If Yarmuth 38 is defined as a funerary site, our proposed investigation may provide a refined definition of such PPNB sites, which would strongly support the assessment that PPNB burial sites existed, and the proposition that they reflect one of the many perceptual and socio-economic changes characterizing the dynamic time of the agricultural revolution. This will likewise open new paths to a wider long-term interpretation of the circumstances and context of the social development vis-àvis the practice of separating the dead from the living. This is a long process that may have started in the late Epipaleolithic Natufian and fully crystalized in the Chalcolithic Ghassulian, thousands of years later. Indeed, our research may inform the long and multi-faceted discourse on the relationships between the living and the dead and the role of the dead in the perceptual and social systems, as well as in the daily life, of Levantine PPNB communities.

The excavation was carried out in 2017–2018 by the Israeli Institute of Archaeology under the auspices of the Sonia and Marco Nadler Institute of Archaeology, Tel Aviv University, and was directed by a joint Tel Aviv University and Israel Antiquities Authority team: Avi Gopher, Anna Eirikh-Rose, Hai Ashkenazi and Katia Zutovski.



A view of Structure V (looking southeast) and an isometric scheme of some of the floors; note the slight change in wall orientation, the pits and the raised feature in the lower floor (photo by Eyal Marco; graphics by Gil Haklay)

Determining Geomagnetic Intensity in the Neolithic: A High-Resolution Study in Southern Jordan

Erez Ben-Yosef and Lisa Tauxe

The archaeologically-rich and well-studied region of the southern Levant constitutes an invaluable source of information for the study of the Earth's magnetic field during various archaeological time periods. Multiple excavations have provided excellent materials, including well-dated pottery and other heat-impacted artifacts, for reconstructing ancient geomagnetic field properties. While in recent years, emphasis has been placed on the period between ~5000–2000 BP, very little has been done on earlier periods.

Consequently, there is a scarcity of data for the Neolithic (~9000-6500 BP). Our aim in this project is to extend the geomagnetic record by conducting archaeomagnetic experiments on well-dated materials from the Neolithic, enabling the reconstruction of geomagnetic intensities. This new data will significantly enhance our understanding of regional geomagnetic field variations and will provide new and much needed constraints for geomagnetic field behavior during an elusive period. Moreover, extending the timeframe of Levantine intensity variations to earlier periods will help contextualize previous observations of the field's behavior, including comparing its behavior to the short intervals of extremely high field values around 1000 BCE (>160 ZAM2 VADM, the "Iron Age Spikes") and studying the field in a period when it was considerably lower than it is today. This project, supported by the U.S-Israel Binational Science Foundation (Grant No. 2018305), will provide partial support for two graduate students: an archaeologist under the supervision of Prof. Erez Ben-Yosef at Tel Aviv University and a paleomagnetist under the supervision of Prof. Lisa Tauxe at Scripps Institution of Oceanography, University of California, San Diego. Such cooperation has worked well in the past.

The archaeological materials that will be used for this project are from the Wadi Faynan region, Jordan, which is rich in sites from the Neolithic period. These artifacts were excavated by Prof. Thomas Levy and Dr. Mohammad Najjar during the 1990s and the early 2000s.

The aim of the project is to gain a better understanding of geomagnetic field behavior. This is of interest to the broader scholarly community for several reasons. First, field strength is a key observable feature that can be compared with predictions based on numerical models of the geomagnetic field. These predictions are not yet "Earth-

like" in their parameterization, yet some exhibit features that are reminiscent of the Earth's actual magnetic field. Most models predict field strengths that are lower than the Earth's current geomagnetic intensity, yet they would have to be capable of generating fields as high as those observed in our artifactual studies to be truly "Earth-like." Second, the production of cosmogenic nuclides like ¹⁴C, ¹⁰Be and ³⁶Cl is modulated by the strength of the Earth's magnetic field; hence, variations in the strength of the field observed in this study are of interest to those analyzing such isotopes and/or their application in various geophysical research (including research aimed at improving the calibration of the radiocarbon time scale). Third, archaeointensity results can play an important role in addressing archaeological questions, in particular concerning chronology. This research focuses on providing new data points for the earliest periods with suitable archaeological materials (based on pottery and baked clay), which are periods that have no archaeomagnetic data from the southern Levant and have very limited geomagnetic information from other locations globally. This study will thus improve our geomagnetic field models, which are an essential instrument for all the aforementioned modes of inquiry.



The excavations of Thomas Levy and Mohammad Najjar at Tel Tifdan, which yielded suitable samples for the study of the Earth's magnetic field in the Pre-Pottery Neolithic (photo by Erez Ben-Yosef)

Anatolia Excursion (September 22–25, 2019): The Tel Aviv–Ankara Cooperation

Amir Gilan

As part of the Sonia and Marco Nadler Institute of Archaeology's ongoing partnership with the Department of Protohistory and Near Eastern Archaeology at Ankara University, Prof. Yuval Gadot, Dr. Lidar Sapir-Hen, Linoy Namdar, Avital Romach and I participated in a short excursion to central Anatolia during September 2019 as guests of our friends and colleagues at Ankara University. The aim of the visit was to bolster scientific collaboration and joint research. We launched that venture with a tour of ongoing excavations in Anatolia and concluded our excursion with the signing of a joint declaration of cooperation between the two institutes.

Our short trip began at Kültepe, ancient Kaneš, the most prominent political and economic center in Anatolia before the rise of the Hittites. We explored the mound and the kārum as the guests of Prof. Fikri Kulakoğlu, director of the Kültepe-Kaneš excavations, who generously discussed his recent findings with us, before we headed northeast to the province of Corum. There, Prof. Tunc Sipahi guided us through the site of Eskiyapar, where he is currently excavating. Eskiyapar, potentially the site of ancient Tahurpa, was a provincial Hittite town of some religious significance, located northeast of Hattuša. The Hittite capital was our next destination. We were joined there by Prof. Tayfun Yıldırım, who remained our guide throughout the remainder of the trip. After exploring Hattuša, nearby Yazılıkaya, and the Boğazköy Museum dedicated to the display of artefacts from older excavations of Hattuša, we continued to Alacahöyük. Alacahöyük, most likely the site of ancient Arinna, holy town of the Sun-Goddess, has likewise been excavated by Ankara University's Department of Protohistory and Near Eastern Archaeology. We spent the night as guests of Prof. Tunç Sipahi, enjoying his generous hospitality and his wife's excellent cooking.

We began the next day at the magnificent archaeological Museum of Çorum, which showcases finds from the sites of Alacahöyük, Boğazköy, Ortaköy, Eskiyapar and Alişar Höyük, among many others. From there we continued to the town of Ortaköy, where we met Prof. Aygul Süel, who kindly gave us a tour of Šapinuwa, the ancient capital of the Hittite king Tudhaliya III, and showed us some of her excavation's spectacular finds.

We spent the next day in Ankara, as guests of Ankara University. We visited the archaeology department, located in the impressive modernist building of the Faculty of Languages and History-Geography at the city's center. After this, our colleagues guided us through the world-renowned Museum of Anatolian Civilizations. The day ended with a festive reception at the office of the rector of Ankara University, where the rector, Prof. Erkan İbiş, and Prof. Yuval Gadot signed a declaration of cooperation, cementing the ties between the two universities and institutes.

Several joint projects were planned during the excursion, in the fields of zooarchaeology, Hittite iconography and Hittite religion, among others. We would like to thank our colleagues and friends for their exceptionally warm and generous hospitality, and we look forward to manifold and fruitful cooperation between our two institutes. We particularly look forward to hosting members of Ankara University's Department of Protohistory and Near Eastern Archaeology in an archaeological expedition in Israel as soon as the COVID-19 situation permits.



The Tel Aviv team at the site of Šapinuwa, admiring a stone carved figure of a god/king (photo courtesy of Amir Gilan)



The rector of Ankara University, Prof. Erkan İbiş, signing the declaration of cooperation between the two institutes of archaeology; to the right of the rector: our hosts, Prof. Fikri Kulakoğlu and Prof. Tayfun Yıldırım (photo courtesy of Amir Gilan)

Ceramics of the Eastern Mediterranean in the Late Bronze and Iron Ages

Paula Waiman-Barak

A symposium titled "The Power of Ceramics: Transformations and Interactions in the Eastern Mediterranean during the Late Bronze and Iron Ages" will be held at Tel Aviv University's Institute of Archaeology on February 22–24, 2022. The Minerva-Gentner symposium, organized by Dr. Paula Waiman-Barak and Prof. Oded Lipschits, both of Tel Aviv University, and by Dr. Sabine Kleiman of Eberhard Karls Universität Tübingen, aims to bring together European and Israeli archaeologists and scientists working in the field of Eastern Mediterranean ceramic studies.

In recent years, numerous analytical studies have produced increasingly accurate information regarding pottery production, style and movement. These efforts echo patterns of exchange rooted in chronological trajectories, which enable detailed reconstructions of ancient economies and their connections across the Mediterranean. The periods in focus are characterized by profound changes in the general social, political and economic organization, from the downfall of the major trading centers of the Late Bronze Age to the gradual development of new polities in the early Iron Age.

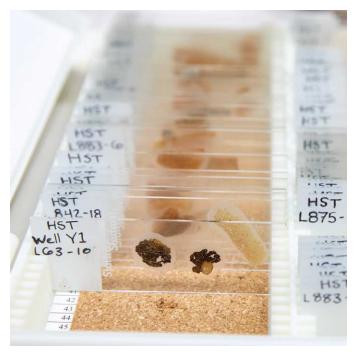
The symposium will allow researchers, often of different schools of thought and from diverse countries, to exchange data from well-contextualized ceramic assemblages excavated at key archaeological sites in the Aegean, Cyprus,

Anatolia, the Levant and Egypt. It will offer scholars of all levels—with a focus on researchers making their first steps in their academic careers—the chance to present and explore various methodologies and ways of investigating archaeological ceramics.

Particular attention will be given to a discussion of methodology, focusing on the strengths and weaknesses of each type of analysis and identifying the methods with the most potential. Alongside papers that provide a synthesis, we plan to present results from various archaeological projects, which applied primarily ceramic petrography combined with other mineralogical or chemical analyses. Typological studies that have not integrated data from archaeometric studies will also be presented. Additional discussions will be dedicated to innovative works that employ 3D-computerized models to standardize analyses of volume and the production methods of ceramic vessels, and organic residue analyses to reconstruct the transportation of organic goods in ceramic vessels and to identify pigments for decoration of wares. Pioneering methods of applying algorithms of artificial intelligence (AI) to petrographic results will also be introduced; it is hoped that these will lead to objective and accurate insights regarding production, style and movements of pottery.



A student at the Ceramic Petrography Laboratory reading a thin section (photo by Sasha Flit)



Petrographic thin sections of ceramics from Hala Sultan Tekke, Cyprus (photo by Sasha Flit)



Romina Della Casa



s a post-doctoral fellow at the Sonia and Marco Nadler Institute of Archaeology (2019–2021), my project, under the supervision of Prof. Amir Gilan, focuses on the interactions between the ancient inhabitants of Anatolia and non-human animals with which they shared their lives. This topic stems from my interest in the distinctive features of what makes us human and the belief that our entanglement with other animals constitutes one of those features. This research is also inspired by my interests in the interfaces between humans and nature and their various expressions in Hittite myths and rituals. These texts reveal the meaning attributed to river shores and subterranean waters, the symbolism of meadows, steppes, valleys and high mountains, among others; they also provide us with precious material with which to approach Hittite ways of thinking and behaving.

I first became interested in Hittite materials in Buenos Aires, where Hittitology has no tradition at all. During my studies of history at the Catholic University of Argentina, the Hittites were only briefly mentioned in the curricula. Noticing my enthusiasm, Prof. Roxana Flammini introduced me to Prof. Itamar Singer of Tel Aviv University and his wife Dr. Graciela Gestoso Singer, who generously started sending me references on the still mysterious Hittites, paving the way for me to embark on Hittite studies.

I wrote my Ph.D. dissertation at the University of Buenos Aires (titled "Symbolic Landscapes in the Invocation Rituals (*mugawar*) of Ancient Anatolia," defended in 2018), under the supervision of Prof. Stefano de Martino of the University of Turin. When I began my Ph.D., it became clear to me that I needed to travel abroad in order to receive proper training in Hittitology. As a result, I ended up spending more than half of the six years of my Ph.D. program abroad, with the privilege of studying at the University of Turin, at the Institute for Assyriology and Hittitology at the Ludwig-

Maximilians-Universität München (LMU), at Koç University's Research Center for Anatolian Civilizations, and at Istanbul University.

Being a fellow at the Sonia and Marco Nadler Institute of Archaeology of Tel Aviv University gave me the opportunity to make progress with my own investigations, as well as to broaden my perspective on other fields of research. such as working as a volunteer at the archaeological excavation of Timna. I also worked on articles dealing with literary commonplaces that present scenes of disrupted landscapes, with notions of performance and human speech in texts known as *mugawar* and on editing my dissertation for publication. I collaborated with Prof. Gilan on a paper about emotions within the Hittite royal family and on his project "The Religious World of King Hattušili III as Reflected in his Autobiography." In addition, I shared my investigations at the 23rd Annual Conference of the Israel Society for Assyriology and Ancient Near Eastern Studies.

For my current research on non-human animals, I am examining a Hittite textual corpus known as magic rituals to find out what their agency in these practices tell us about its impact on Hittite society. Overall, some of the

avenues in this research explore whether there was any understanding of a collective "animal world" as opposed to a "human" one, whether there are traceable identifications between humans and non-human animals during ritualistic procedures, and how non-human animals were conceived so that they would take part in a specific magic ritual.

Silver Hittite vessel with gold inlay, terminating in the forepart of a stag (Metropolitan Museum of Art, New York)

Zachary Thomas



y name is Zachary Thomas, though most just call me Zac. I came to Tel Aviv University from my home country of Australia, a long trip at the best of times, let alone in these days of pandemic. I received my B.A. in my hometown of Canberra, where I had first become interested in biblical Israel and Near Eastern archaeology, and then completed a research M.A. in the U.K. I completed my Ph.D. at Macquarie University in Sydney in 2019, with a dissertation that presented a new historical and archaeological reconstruction of the early monarchy in ancient Israel (the Iron I–IIA) as a patrimonial kingdom. We see this in Near Eastern kingdoms particularly during the Late Bronze Age, and though some scholars before me had argued that the monarchy under the biblical kings David and Solomon could be understood this way, no one had yet devoted a full-length study to it.

My first excavation experiences were with Tel Aviv University in the City of David and at Tel Azekah, and I have long valued the connections I made there early in my career. Since the beginning of my Ph.D. I have had the pleasure of serving as a supervisor at the joint Azusa Pacific University–Hebrew University excavations at Tel Abel Beth Maacah in the Hula Valley, and I have also served on the staff of Macquarie University's excavations with the Hebrew University of Jerusalem and the Israel Antiquities Authority at Khirbet er-Raʿi. After the disruptions of 2020, one of the things I most look forward to in Israel is getting

back out into the field with the Central Timna Valley Project and at Tel Abel Beth Maacah.

During my postdoctoral fellowship I will be working with Prof. Erez Ben-Yosef on the subject of nomadic groups during the biblical period in the southern Levant. Prof. Ben-Yosef's research in the Arabah has put nomads back on the map, so to speak, with the excavation of vast copper-mining and smelting activities, as well as associated lifeways dating from the early Iron Age. Archaeological remains of nomadic groups have proven rare beyond the Arabah, and these groups have not received much attention from those studying Israel and its neighbors during the Iron Age, typically being overlooked as a component of society and polity in this period.

Our work will seek to correct this by looking into how nomads could have been important, or even dominant, components of an early kingdom of Edom in the Arabah and in monarchic Israel. A major part of this will be looking at how political complexity works among nomads, which connects to my Ph.D. research. We will also look at cases from the broader ancient Near East such as the Middle Bronze Kingdom of Mari, which had a large and quite influential population of nomads. In addition, I will be working on revising my Ph.D. for publication, especially with an eye towards incorporating more evidence of nomads during the early monarchic period.

Francesca Manclossi



fter completing my B.A. degree in Near Eastern Archaeology at the University of Pisa, Italy, I moved to France and I received my M.A. degree in Prehistory at the University of Paris-Nanterre. I obtained my Ph.D. degree at Ben-Gurion University of the Negev with a joint program with the University of Paris Ouest Nanterre-La Défense. After a year at the Centre de Recherche Français in Jerusalem, I was a post-doctoral fellow at Ben-Gurion University, working on an Israel Science Foundation project.

My primary research interest focuses on one of the most important technological changes in the history of mankind: the shift from stone to metal. Lithics and metallurgy are concurrent technologies, and comparing the two can clarify processes explaining the disappearance of flint industries and the development of metallurgy.

For studying the flint-metal replacement process, I have developed an interdisciplinary approach on multiple levels. My training in Italy, France and Israel has allowed me to combine different archaeological schools and traditions and has given me a broad methodological and theoretical background. From a chronological point of view, my interest extends from prehistory to the historic periods and covering a long time-frame, from the Chalcolithic to the Iron Age. My expertise is not limited to lithic technologies alone, but extends to metallurgy as well. I have integrated archaeological records and historical processes with theories on innovation and technological change.

Given the increasing importance that technological evolution is gaining in archaeological and anthropological debates, the research I will conduct at the Sonia and Marco Nadler Institute of Archaeology, under the supervision of Prof. Ran Barkai, will employ an interdisciplinary approach that will permit me to analyze the dynamics and mechanisms relating technological changes with the social, economic, political and ideological transformations that characterized the development of ancient civilizations. My project "Technological Change: In the Search of Cross-Cultural Regularities in Explaining Innovation, Adoption, Adaptation and Decline of Objects and Technologies" focuses on the study of anthropological and historical cases in which it is possible to analyze the relationship between "antagonist" technologies, when one "rises" at the expense of the other. Proceeding from the assumption that technological changes constitute discrete historical developments, the aim is to identify regularities that may be considered "evolutionary laws." Building upon my previous research, the main focus will be the stonemetal replacement process. However, the recognition of any recurrent cross-cultural patterns might offer new and important insights into other moments of human evolution.

Ancillary to my research, I will organize a conference, "Stones, Pots and Swords: New Technologies, History, and Culture in the Ancient Near East," with the aim of infoeming the debate on the processes underlying technological transformations. By using specific archaeological case-studies referring to different materials (e.g., lithics, pottery, metals) and chronological periods (from the Paleolithic to the Iron Age), its goal is to stimulate methodological and theoretical approaches to understand how and why technological changes occurred and how they interacted with the development of Near Eastern civilizations.

Giulia Tucci



t is with great pleasure that I hold the position of an international post-doctoral fellow at the Department of Archaeology and Ancient Near Eastern Cultures at Tel Aviv University for the 2020–2021 academic year under the direction of Dr. Ido Koch.

My research at the Institute deals with "Political, Social and Economic History of Stamp Seals and Interconnections" within the "Stamp Seals from the Southern Levant" SINERGIA research project, funded by the Swiss National Science Foundation. The project involves Tel Aviv University, the University of Zurich (Prof. Dr. Christoph Uehlinger) and the University of Bern (Prof. Dr. Silvia Schroer and Prof. Dr. Stefan Münger), with multidisciplinary methods and interdisciplinary cooperation involving archaeology, biblical studies and history of religions.

The ultimate goals of the project are to create an online open-access, collaborative and expandable database, building upon O. Keel's *Corpus der Stempelsiegel-Amulette aus Palästina/Israel: Von den Anfängen bis zur Perserzeit: Katalog* Vols. I–V (Orbis Biblicus et Orientalis), while articulating new research on seal design and iconography, social archaeology and gender history. My participation in this project has given me the opportunity to collaborate with colleagues of multiple nationalities from a variety of academic backgrounds, which has resulted in abundant and fruitful exchanges of knowledge.

The combined study of material culture and cultural interconnections has always been my area of focus. I obtained my B.A. and M.A. in archaeology and art history of the Near East at the University of Rome "La Sapienza," and concluded my Ph.D. in 2017 at the same university, with a focus on jewelry in the southern Levant during the Late Bronze Age.

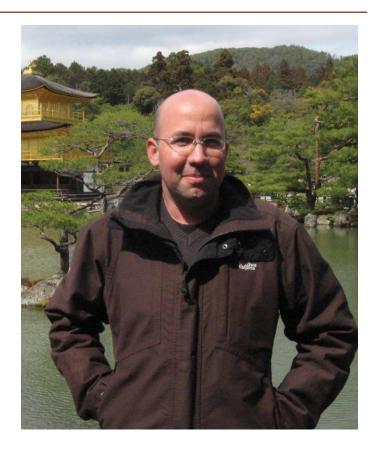
While working towards my Ph.D. I was able to develop the theme of my research in an original way and through a multi-disciplinary approach. By considering typological and technological features, diachronic developments, function and style, while carefully analyzing archaeological contexts, I was able to offer a systematic presentation as well as a thorough and updated evaluation of the materials.

During my Ph.D. work, I benefited from various studyperiods abroad, where I was able to exchange opinions and take advantage of the suggestions of specialists. I have also had the opportunity to present the results of my research at several conferences and symposia, establishing fruitful relationships with international scholars and publishing articles.

In the past ten years I have been an active member of the Departments of Antiquities Sciences in Rome, first as a student and then as a Ph.D. candidate. Over the course of my B.A. and M.A. I became familiar with archaeological materials and contexts thanks to my field work experiences. I took part in several archaeological expeditions in the Mediterranean and the Near East, where I was in charge of the architectural drawing, pottery and small finds drawing and registration.

My research interests have found their natural environment in the active and productive academic world of the Sonia and Marco Nadler Institute of Archaeology. My participation in the "Stamp Seals from the Southern Levant" project has granted me the opportunity to interact daily with scholars and colleagues, helping me to broaden my areas of expertise, improve my methods of investigation and increase my cooperative skills.

Ido Wachtel



uring 2018–2020, I was a post-doctoral fellow at the Zvi Yavetz School of History at Tel Aviv University in collaboration with the Sonia and Marco Nadler Institute of Archaeology, as part of an interdisciplinary research group led by Prof. Yuval Gadot and Dr. Amos Nadan ("Peasants in the Past: A Look at a Local Society and Economy"). My research and publications revolve around the archaeology of the Levant in the Bronze and Iron Ages. In particular, I study the development of socio-political hierarchies and the evolution and formation of settlement patterns and the intricate relations between cities and villages. Alongside my foundation in traditional archaeology, I have integrated advanced digital tools and interdisciplinary approaches into my research, such as GIS and the use of ethnographic data for interpreting the archaeological record.

The "Peasants in the Past" research group primarily deals with different aspects of social integration within peasant societies. This includes aspects such as economic corporation, crop sharing, rituals and institutions of social cohesion, as well as the influence of new technologies and ideas on social and economic structures. We combine a variety of sources (archaeology, ethnography, oral history, archives and official data) in order to reconstruct peasant life, as well as social and economic interactions between households, extended families and the village community as a whole. Our case study is the 19th–20th-century village of Qālūnyā (6 km west of Jerusalem). The village was destroyed in the 1948 War, but a wealth of evidence of material culture, texts and oral evidence is available. Our

research demonstrates the potential of interdisciplinary joint research for a better understanding of peasant societies in the Levant during a period of rapid change.

I wrote my Ph.D. dissertation at the Hebrew University of Jerusalem under the supervision of Prof. Ilan Sharon and Prof. Gideon Shelach (The Upper Galilee in the Bronze and Iron Ages: Settlement Patterns, Economy and Society, 2018). One of the major contributions of my Ph.D. research was charting and analyzing the settlement history of the Upper Galilee from incipient urbanization during the Early Bronze Age to the development of regional and supraregional states during the Middle Bronze, Late Bronze and Iron Ages. This research includes archaeological field work (systematic surveys and excavations), advanced locational modeling to analyze archaeological data across multiple scales, and comparative historical and ethno-archeological study of villages from the Ottoman and British Mandate period, with archaeological data on village life during the Bronze and Iron Ages. This part of my research has led me to the interdisciplinary research lab at Tel Aviv University where I have gained a solid theoretical and methodological perspectives for the study of peasant societies in the Levant.

As of October 2020, I am a Martin Buber post-doctoral fellow at the Hebrew University of Jerusalem. I plan to further develop the field of comparative historical and ethnographic study of peasant communities, as well as continue to cooperate with the "Peasants in the Past" research lab.

Ella Assaf



conducted my Ph.D. research at the Department of Archeology and Near Eastern Studies of Tel Aviv University under the supervision of Prof. Ran Barkai and Prof. Avi Gopher, after completing both my undergraduate and M.A. studies in the Department. I am currently a post-doctoral researcher at the University of South Florida under the supervision of Prof. Kathryn Weedman Arthur.

My research seeks to analyze the dynamics of social learning in pre-Sapiens humans. In the course of my study I developed interpretative models related to the nature of social learning traits practiced by prehistoric societies, with a "close-up" look at a specific archaeological site—Qesem Cave (inhabited between ca. 420,000-200,000 years ago). The characterization of knowledge transmission practiced at this site is based on evolutionary anthropological models as well as technological analyses of stone tools. The results suggested that Qesem Cave inhabitants regularly spent time teaching knapping skills to others. These activities involved several forms of learning, including trial-anderror mechanisms and sharing of knowledge between group members. The study indicates that learning was an inseparable part of the everyday life of prehistoric humans, and indirectly reveals the role of children as active agents in these very ancient human societies. Currently, I am conducting techno-typological analyses for lithic assemblages originating from the Acheulian site of Jaljulia, in the aim of further developing a methodology for identifying learning and knowledge transmission mechanisms in Lower Paleolithic contexts.

In the framework of my post-doctoral studies, I am in the process of investigating intriguing prehistoric toolsshaped stone balls—found in many prehistoric Lower Paleolithic sites worldwide. Together with ten researchers from Tel Aviv University, the Geological Survey of Israel and the Universities of Rome, Madrid and Tarragona (Spain), we are studying this enigmatic tool through a multidisciplinary approach, focusing on technological, functional, geological and socio-cultural aspects. Currently, a thorough technological investigation conducted together with Prof. Baena (University of Madrid) is in its final stages and includes a full technological reconstruction of these items through experimental means. A further investigation in which I am involved concerns the function of these tools: a joint project with Prof. Guil Guerrero (Universidad de Almeria), which investigates the nutritional potential of horse jaws and the use of these lithic macro-tools for the breaking of these bones, with consideration to the wider socio-cultural aspects of human-animal relations in prehistory.

My future research endeavors include an interdisciplinary collaboration with Prof. Kathryn Arthur of the Department of Anthropology at the University of South Florida. This proposed research is meant to explore the influence of socio-cultural aspects such as gender and ontology on learning processes and the transmission of knowledge with regard to stone-tool technology in prehistoric periods. A living example of these behavioral patterns was observed by Prof. Arthur among one of the last groups in the world to produce stone tools—the Konso women of southern Ethiopia. This study will entail an investigation of historic scrapers made by the Konso and prehistoric scrapers from Qesem Cave as agents reflecting socio-cultural perceptions of ancient humans.

Ian W.N. Jones



received my Ph.D. in anthropology from the University of California, San Diego in 2018. In a very general sense, I am interested in the ways people interact with their environments, and the social and political-economic aspects of industry and agriculture. More specifically, though, I tend to approach these issues through the lens of Islamic archaeology, looking mostly at the Early and Middle Islamic periods (roughly the 7th–15th centuries CE) in Israel and Jordan.

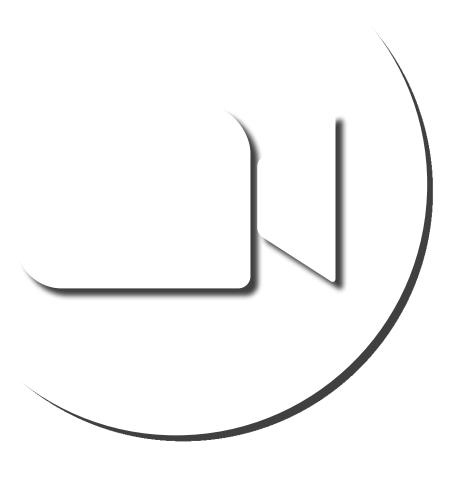
During my dissertation research, conducted as part of the UC San Diego Edom Lowlands Regional Archaeology Project, I investigated an interesting episode of copper production in the early 13th century CE (i.e., the Ayyubid period) in the Faynan region of southern Jordan. This short production phase, beginning more than six centuries after the end of Roman production and lasting perhaps no more than 50 years, seems to have been connected to the expansion of the sugar industry in the Jordan Valley and Dead Sea lowlands, as well as to the rather brief autonomy of the Ayyubid emirate of Karak, in central Jordan.

As part of this research, I also had the opportunity to collaborate with Prof. Erez Ben-Yosef on the analysis and publication of a copper-smelting site much farther to the south called Khirbat al-Manaʿiyya. This site, dating to the Early Islamic period (late 8th–9th century CE), represents a production phase that is absent in Faynan. Instead,

sites associated with this industry are concentrated in the southern Arabah Valley, associated with the Early Islamic port of Ayla. To date, Khirbat al-Manaʻiyya is the only site associated with this industry known in the southeastern Arabah. The majority are instead found in the southwestern Arabah, within the modern borders of Israel.

At Tel Aviv University, I plan to work with Prof. Ben-Yosef to investigate these sites. Our work at Khirbat al-Mana'iyya raised a number of questions that at present are difficult to answer. The most notable of these concerns the chronology of this industry. While our previous work, and indeed much of the previous work on the industry, suggests that the late 8th century was its most active phase, the question of how long many of the smelting camps were active remains open. Likewise, the question of whether this production began in the mid-8th century, i.e., during the early 'Abbasid period, or earlier at some point during the Umayyad period, has important bearing on the political economy of the industry and its relationship to larger-scale mining of copper and precious metals in the Hijaz and Najd. Likewise, many questions remain about how the industry was organized locally, particularly with regard to its relationship to Ayla's evolution as a port and the involvement of pastoral nomadic groups. These are just a few of the questions that we hope to answer through further investigation and excavation of these sites.

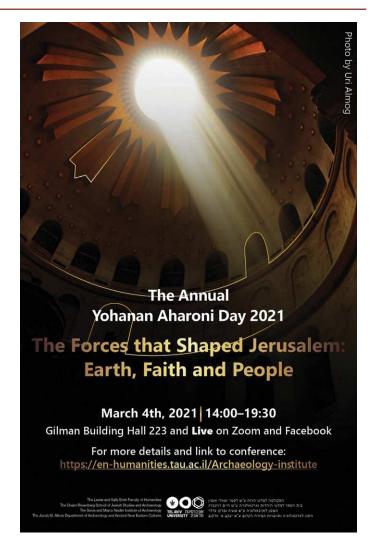
Events



The Annual Yohanan Aharoni Day: 2020 and 2021

In 2020, the Annual Aharoni Day symposium was held on March 5, at the very beginning of the outbreak of the COVID-19 pandemic in Israel. After some deliberation, the event was held live with an audience, although some of the presenters had to lecture via Skype. The symposium dealt with the "Archaeology of Religion" from a global perspective, covering Paleolithic ontologies from across the globe, proto-historic Chinese religious encounters, methodological issues in the study of ancient Levantine religion(s), and Maya and Gamo (Ethiopia) cosmologies.

The 2021 symposium will focus on Jerusalem. With ample new and tantalizing finds uncovered in ongoing excavations in the city and its environs, we are still trying to fathom what it is that has turned Jerusalem into what it is today. Eighteen speakers from around the globe will present their perspectives on the forces that shaped Jerusalem: the environment, human faith and spirit, and charismatic leaders. Delving into diverse periods and subjects, the symposium promises to be a hub for interdisciplinary research.



News from the Trenches

The much anticipated "News from the Trenches" conference is always a highlight in the events schedule. The conference allows scholars to share the results of their various archaeological projects from the past year.

This conference exemplifies the broad range of research and scholarship within the Department and presents an unparalleled opportunity for scholars and students alike to hear about the most up-to-date research of the Institute of Archaeology of Tel Aviv University.

This year the conference was broadcast online due to COVID-19 pandemic restrictions. It featured two sessions. In the first, faculty members and researchers presented studies conducted at the Institute's labs, including the newly-established Ceramic Petrography, Conservation of Metallic Artifacts and Computational Archaeology Laboratories (see pp. 14–21). The second session was dedicated to presentations on fieldwork conducted, in the shadow of the pandemic, at Apollonia-Arsuf, Tell Izṭabba, Tel Azekah, Tel Hadid, Jerusalem and Masada.

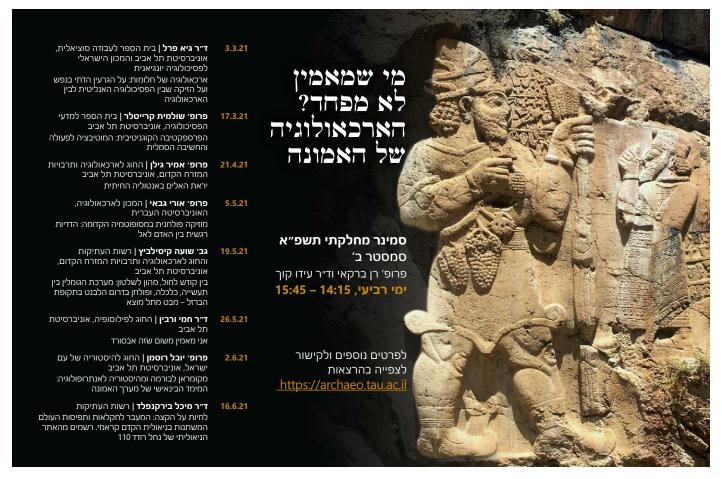


The 2020–2021 Departmental Seminar: The Archaeology of Faith

Humans are not rational beings. The actions and decisions of people—present and past—are derived not only from utilitarian and practical considerations but also from considerations concerning faith and relations with various agents in the world. Human beings act within the framework of a worldview and theory about the world, which guides their actions and relationships with the various elements of the world. Such a premise may explain the many phenomena that are most commonly included in the terms "ritual," "symbol," "worship," and so on, but it touches on the many daily behaviors of human beings since time immemorial. The archaeological record is replete with findings that teach about "ritual" conduct of ancient human beings, but generally speaking, no attempts are made to decipher these people's belief systems or investigate what underlies them. In other words, what did humans really believe in before?

In the 2020–2021 departmental seminar we attempt to discuss these unexplained phenomena, which are

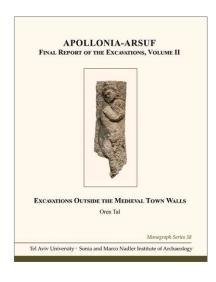
typically contained under the definition of an ancient "religion" or an enigmatic symbolic activity, in a broad chronological and geographical perspective. We aim to present the theoretical and methodological foundations for the study of human-non-human interactions, as well as to discuss ontologies (how the world is perceived by man and how man perceives his place in the world) and cosmologies (a collection of basic conceptions and beliefs dealing with the origin, structure and rules of action of the universe on the special parts and laws) of ancient societies. Our guest lectures will emphasize the relevance of these issues to select archaeological questions, such as the birth of religion and faith, burial practices, the use of caves, mind-altering materials, dance and music, astronomy, relationships with animals, the use of jewelry, and more, and will consider the place of these phenomena in ancient Near Eastern cultures and their documentation in ancient texts.



Rock relief from İvriz, Turkey, 8th century BCE (www.Hittitemonuments.com)



Monograph Series



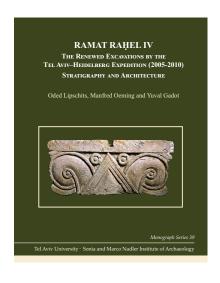
Apollonia-Arsuf

Final Report of the Excavations, Volume II Excavations Outside the Medieval Town Walls

Monograph Series No. 38

Oren Tal

This is the second in a series of final publications of the Apollonia-Arsuf excavations (Volume I dealt with the Persian and Hellenistic periods). The present volume, titled *Apollonia-Arsuf. Final Report of the Excavations, II: Excavations Outside the Medieval Town Walls*, reports the finds from the 1996, 2002, 2009 and 2012–2013 seasons. The main topics dealt with are: the excavation of areas to the east of Apollonia National Park (Area TT8); the final report of the excavations outside the walled medieval town (Areas AA, CC, DD and their derivatives); the excavations carried out within and just outside the perimeter of Apollonia National Park (Areas N, N1, M and O); skeletal remains; faunal remains; and a variety of finds, including pottery, coins, glass and stone, metal and bone objects.



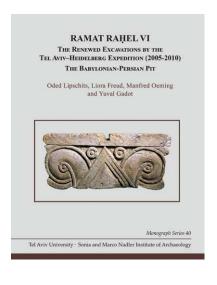
Ramat Rahel IV

The Renewed Excavations by the Tel Aviv–Heidelberg Expedition (2005–2010) Stratigraphy and Architecture

Monograph Series No. 39

Oded Lipschits, Manfred Oeming and Yuval Gadot

Ramat Raḥel IV is the first of a three-volume final report of the Tel Aviv—Heidelberg Renewed Excavations at Ramat Raḥel, conducted between 2005–2010. The volume presents the stratigraphy and architecture of the excavation areas (including portions of the palatial compound, the subterranean columbarium complex and the Late Roman cemetery); site formation of the tell; 20th-century fortifications at the site; and the ancient garden and its water installations.



Ramat Raḥel VI

The Renewed Excavations by the Tel Aviv–Heidelberg Expedition (2005–2010) The Babylonian-Persian Pit

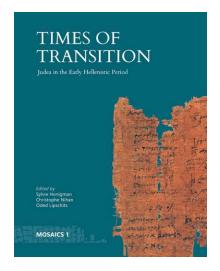
Monograph Series No. 40

Oded Lipschits, Liora Freud, Manfred Oeming and Yuval Gadot

This volume presents the finds from the Babylonian-Persian Pit, one of the most dramatic find-spots at Ramat Raḥel. The pit yielded a rich assemblage of pottery vessels and *yhwd*, lion and 6th-century "private" stamp impressions, including, for the first time, complete restored stamped jars, jars bearing two handles stamped with different *yhwd* impressions, and jars bearing both lion and "private" stamp impressions on their bodies. Residue analysis was conducted on many vessels excavated from the pit in an effort to analyze their contents, yielding surprising results. The finds contribute to our understanding of the pottery of the Babylonian and the early Persian periods (6th-5th centuries BCE) and to the study of the stamped-jar administration in the province of Yehud.

Mosaics: Studies on Ancient Israel

The Sonia and Marco Nadler Institute of Archaeology is pleased to announce the launch of a new book series, titled "Mosaics: Studies on Ancient Israel." The series, a joint endeavor with Eisenbrauns, an imprint of Penn State University Press, provides a scholarly forum for biblical, archaeological and historical research about Israel and its environs, spanning a broad chronological range. It includes thematic studies and collections of articles with a common focus written by leading scholars in their respective fields. It is our hope that Mosaics will make a significant contribution in the dissemination of knowledge to the scholarly community.



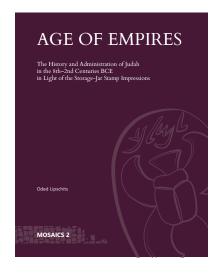
Times of Transition

Judea in the Early Hellenistic Period

Mosaics No. 1

Sylvie Honigman, Christophe Nihan and Oded Lipschits

This multidisciplinary volume, the proceedings of an international conference held at the Institute in 2014, takes a fresh look at a period of transition from Persian to early Hellenistic times in Judah, long neglected in research. Until recently, the period from Alexander's conquest in 332 BCE to the early years of Seleucid domination following Antiochus III's conquest in 198 BCE was reputed to be poorly documented in material evidence and textual production, buttressing the view that the period from late Persian to Hasmonean times was one of seamless continuity. Recent archaeological and literary studies have begun to reveal that this is a period in which critical changes took place. At the same time, historians of the Hellenistic East have shed new light on the nature of the Hellenistic empires and the relationship between the central power and local entities in ancient imperial settings. The re-dating of several biblical texts to the 3rd century BCE is another major thread explored in this volume, challenging the traditional periodization of Judean history.



Age of Empires

The History and Administration of Judah in the 8th–2nd Centuries BCE in Light of the Storage-Jar Stamp Impressions

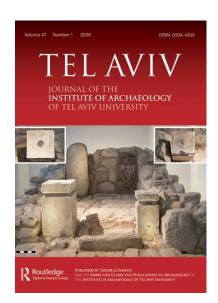
Mosaics No. 2

Oded Lipschits

Storage jars of many shapes and sizes were in widespread use in the ancient world, transporting and storing agricultural products such as wine and oil. From the late 8th to the 2nd century BCE, oval storage jars typical of Judah were often stamped or otherwise marked: in the late 8th and early 7th century BCE with *lmlk* stamp impressions, later in the 7th century with concentric circle incisions or rosette stamp impressions, in the 6th century, after the fall of Jerusalem, with lion stamp impressions, and in the Persian, Ptolemaic and Seleucid periods with *yhwd* stamp impressions. Several *ad hoc* systems of stamp impressions also appeared: "private" stamp impressions were used on the eve of Sennacherib's campaign, *mwṣh* stamp impressions after the destruction of Jerusalem, and *yršlm* impressions after the establishment of the Hasmonean state.

In Judah this administrative phenomenon is unparalleled in scale, variety and continuity. This is the first attempt to develop a unified theory to explain the function of these stamp impressions and shed new light on the history of Judah during six centuries of subjugation to the empires that ruled the region.

Tel Aviv



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Journal of the Institute of Archaeology of Tel Aviv University

Volume 47, Number 1, 2020

In Memoriam, Dr. Nili Liphschitz Simcha Lev-Yadun and Dafna Langgut

Cannabis and Frankincense at the Judahite Shrine in Arad

Eran Arie, Baruch Rosen and Dvory Namdar

Egyptian Centres and the Distribution of the Alphabet in the Levant Nadav Na'aman

The Iron IIB Gate Shrine at Lachish: An Alternative Interpretation Sabine Kleiman

Ḥorvat Tov: A Late Iron Age Fortress in the Northeastern Negev Eli Itkin

The Wrath of the Lion: Evidence of a Mass-Burial in Hasmonean Jerusalem Tehillah Lieberman, Kfir Arbiv and Yossi Nagar

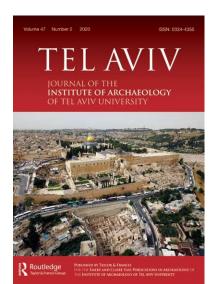
The Name Jerusalem in a Late Second Temple Period Jewish Inscription Yuval Baruch, Danit Levi and Ronny Reich

The Geometry of King Herod's *Opus Sectile* Floors

Frankie Snyder

Abbreviations

Tel Aviv is available online at: www.tandfonline.com/loi/ytav



Tel Aviv:

Journal of the Institute of Archaeology of Tel Aviv University

Volume 47, Number 2, 2020

In Memoriam, Raphael (Rafi) Ventura

Deborah Sweeney

New Evidence on the Location and Nature of Iron Age, Persian and Early Hellenistic Period legusalem

Yiftah Shalev, Nitsan Shalom, Efrat Bocher and Yuval Gadot

Building 7050 at the Acropolis of Late Bronze Hazor: A Palace After All

Amnon Ben-Tor

Forging an Empire: The Borders of the Land of Karkemiš According to the Treaty between Šuppiluliuma and Šattiwaza

Yoram Cohen and Eduardo Torrecilla

An Iron IIA Iron and Bronze Workshop in the Lower City of Tell es-Safi/Gath

Vanessa Workman, Aren M. Maeir, Amit Dagan, Johanna Regev, Elisabetta Boaretto and Adi Eliyahu-Behar

A Figurine with a Possible Early Aramaic Inscription

Madadh Richey

The 'Solomonic', Six-chambered Gate 2156 at Megiddo Once Again

David Ussishkin

Microarchaeological Study of the Achaemenid Throne Legs from the Israel Museum Collection

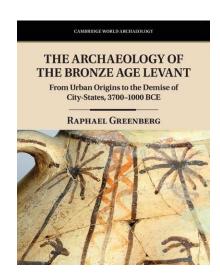
Yarden Pagelson, Eran Arie and Yuval Goren

The Enigma of the High-Level Aqueduct to Jerusalem and the Mamilla Water System David Gurevich

Abbreviations

Tel Aviv is available online at: www.tandfonline.com/loi/vtav

Other Publications by Faculty Members



The Archaeology of the Bronze Age Levant

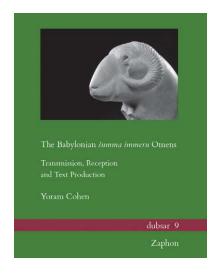
From Urban Origins to the Demise of City-States, 3700–1000 BCE

Cambridge University Press

Raphael Greenberg

The Levant—modern-day Lebanon, southern Syria, Jordan, Israel and Palestine—is one of the most intensively excavated regions of the world. This richly documented and illustrated survey offers a state-of-the-art description of the formative phase of Levantine societies, as they perfected the Mediterranean village economy and began to interact with neighboring civilizations in Egypt and Syria, on the way to establishing their first towns and city-state polities. Citing numerous finds and interpretive approaches, Raphael Greenberg offers a new narrative of social and cultural development, emulation, resistance and change, illustrating how Levantine communities translated broader movements of the Near Eastern and Mediterranean Bronze Age—the emergence of states, international trade, elite networks and imperial ambitions—into a uniquely Levantine idiom.

The Institute of Archaeology congratulates Raphael Greenberg on receiving ASOR's G. Ernest Wright award for *The Archaeology of the Bronze Age Levant: From Urban Origins to the Demise of City-States, 3700–1000 BCE.* ASOR's Honors and Awards Committee commended this "coherent and brilliantly written volume" that provides "a remarkable synthesis of the social and cultural development of the southern and central Levant during the Bronze Age." It further notes that "Greenberg's decades of experience as a field archaeologist are evident in this work, where he not only masters discussion of material culture, but artfully interweaves contributions from social archaeology, critically analyzing the strengths and weaknesses of various theories and interpretations."



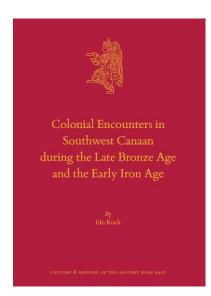
The Babylonian šumma immeru Omens

Transmission, Reception and Text Production

Dubsar 9 | Published by Zaphon

Yoram Cohen

The Babylonian *šumma immeru* ("If the Sheep") omens are concerned with ominous signs drawn from the behavior of sacrificial sheep at the time of sacrifice. They are part of the diviner's craft of divination and are related to the technique of extispicy (i.e., examination of the entrails). The literary history and the transmission of the *šumma immeru* omens are long and convoluted. The omens are attested from the Old Babylonian period to almost the very end of cuneiform civilization at Seleucid Uruk. Manuscripts of the omens and of their commentaries arrive from Babylonia, Assyria, Anatolia and northern Syria. This book is the first comprehensive study of this omen genre, offering complete text editions and commentaries of the omens, some previously unpublished. It places the *šumma immeru* omens within the context of Babylonian divination and investigates how texts reached a "canonical" status that had become immune from changes during millennia of textual production, transmission and reception.



Colonial Encounters in Southwest Canaan during the Late Bronze Age and the Early Iron Age (Forthcoming)

Published by Brill Culture & History of the Ancient Near East 119

Ido Koch

In *Colonial Encounters in Southwest Canaan during the Late Bronze Age and the Early Iron Age* Ido Koch offers a detailed analysis of local responses to colonial rule and to its collapse. The book focuses on colonial encounters between local groups in southwest Canaan (between the modern-day metropolitan areas of Tel Aviv and Gaza) and agents of the Egyptian Empire during the Late Bronze Age (16th–12th centuries BCE). This new perspective presents the multi-faceted aspects of Egyptian colonialism, the role of local agency, and the reshaping of local practices and ideas. The book then examines local responses to the collapse of the empire, mechanisms of societal regeneration during the Iron Age I (12th–10th centuries BCE), the remnants of the Egyptian–Canaanite colonial order, and changes in local ideology and religion.

TAU Archaeology

The Jacob M. Alkow Department of Archaeology and Ancient Near Eastern Cultures
The Sonia and Marco Nadler Institute of Archaeology
The Lester and Sally Entin Faculty of Humanities
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