



La Sierra Digs

Newsletter of the Center for Near Eastern Archaeology | HMS Richards Divinity School | La Sierra University | Vol. 8:2 Spring 2020

“Oh, the places you’ll go...”: Journey of a Cosmetic Palette

The journey of object #701, a cosmetic palette fragment from Tall al-‘Umayri, through the organic residue analysis process

By Betty Adams (Quote from Dr. Seuss)

It’s summer 1987. Larry Herr is the Chief Archaeologist, and Denise Herr is supervising Field F, Square 6L98 at Tall al-‘Umayri, Jordan. In Locus 1, the topsoil is filled with finds from the Iron IIC and Persian periods (6th–5th centuries BC) due to erosion and 1,400 years of plowing at the site. It’s unknown whether cosmetic palette fragment #701 was found in the sift or pottery washing. With the earth brushed off of this white limestone fragment the incised decoration emerges on the rim.

Herr notes that it is “probably” a cosmetic palette on the object card, which is confirmed when it is examined more carefully back at the Horn Archaeological Museum at Andrews University in Michigan. Fragment #701 eventually makes its way to Walla Walla University in Washington, where it is recorded in the digital archive and added to “Open Dig (opendig.org).” In 2009 it made its way to La Sierra University, where it is placed in a drawer in the lab to slumber for nearly nine years.

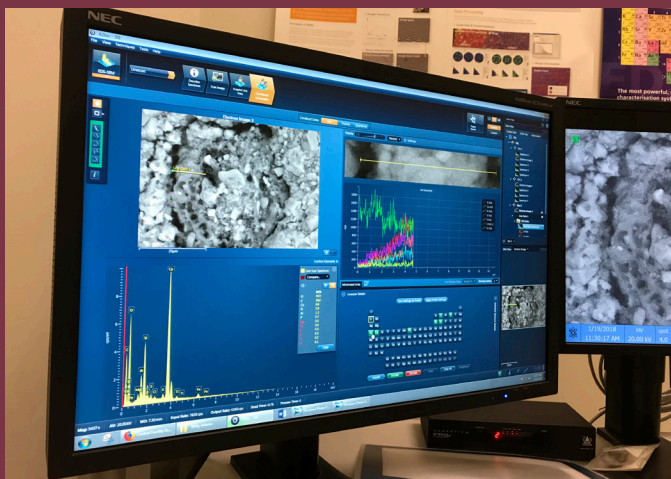
During the years, residue analysis for ceramic artifacts gains popularity and refinement as technology improves and enables molecular particles trapped inside pottery sherds to be “read” by a variety of ever-evolving methods of analyses. Richard P. Evershed was the pioneer in this field, with his groundbreaking

work on the use of lipids as biomarkers in archaeological residue analysis. Others quickly followed his lead, as the value of the data retrieved by the studies sheds light on archaeological issues such as trade, production, household archaeology, and anthropology.

In 2018, fragment #701 was selected as part of a group of potential cosmetic tools to begin the journey of organic residue analyses. The first stop was the University of Riverside, California, in the Chemical Analysis Facility, for SEM-EDS (scanning electronic microscope, with electronic dispersive spectrometry). The scan determines whether or not there is material that appears separate from the background reading of the stone and to give a starting point for those data. In the case of #701, the SEM-EDS clearly showed a high concentration of Carbon, which we felt could be fat of some sort that would’ve been used in a cosmetic compound. Subsequent testing with additional methods confirmed this suspicion. Fragment #701 makes a trip back across town to the La Sierra University Chemistry lab, where it will undergo GCMS (gas chromatography with mass spectrometry) analysis by Dr. Jennifer Helbley and chemistry student Amanda Oronoz. This time the results show a number of fatty acids, steroids, and other likely elements of animal fat.



Cosmetic Palette #701



UCR SEM-EDS

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BERNARD BRANDSTATER (1929–2020)

By Lawrence Geraty

La Sierra University's archaeology community, including those who have worked in Jordan over the last fifty years, have lost a dear friend and supporter at the passing of Bernard Brandstater, MD.

Bernard was born in Perth, Australia on February 23, 1929 to Roy, a Seventh-day Adventist pastor, and Frances Brandstater. In 1945, aged just 16 years, Bernard was accepted into the Adelaide medical school on a full academic scholarship. Following graduation Bernard was awarded a Fulbright scholarship in 1952 for postgraduate study in anesthesiology at the University of Pennsylvania in Philadelphia and continued his post-residency training at St. Thomas' Hospital and Eastman Dental Hospital in London, plus a year of research at U.C. San Francisco. In 1956 Bernard was recruited to join the faculty of the American University of Beirut in Lebanon and eighteen months later, at the age of 29, he was appointed Chairman of the Department of Anesthesiology. During his 13 years at the AUB he started a residency program and the department grew, becoming influential throughout the Middle East. Bernard organized the first international anesthesiology conference in Beirut in addition to inaugurating and editing the Middle East Journal of Anesthesiology.

It was during those years, living in Beirut, that Bernard traveled widely in the Middle East and began his collection of significant archaeological artifacts from the world of the ancient Near East, some of which he later donated to La Sierra's Center for Near Eastern Archaeology. These included a major Roman-period stone pillar capital from Syria and a Palmyrene funerary inscription. Anyone who has visited Bernard's lovely home will have seen other objects that help to tell the story of the Bible. He regularly attended annual Archaeology Discovery Weekend activities, and for one such weekend, allowed the archaeology center to display a broad collection of Roman-period medical instruments. And at another of those weekends he was the featured banquet speaker regarding his own archaeological journeys.



By 1969 Bernard had accepted a position at Loma Linda University as chairman of a newly created Department of Anesthesiology where he successfully recruited faculty and built a strong department. During these years Bernard was fully engaged with other faculty in promoting and renewing the spiritual vision of Loma Linda University. He had an active family life and was proud of his four children (three of whom dug with us in the Holy Land) and eventually his seven grandchildren.

Bernard pursued many interests outside of medicine, some passionately. These included mountain climbing and sailing the high seas. He studied and wrote on the earth sciences. But he enjoyed especially archaeology and one year (1989) joined our dig Tall al-'Umayri, Jordan not only as camp physician but as camp director! Bernard was an intellectual, a student of history, an avid reader of literature and poetry. He loved music, played the trumpet well and entertained family, friends, and field archaeologists at the piano.

Because of his great interest in the biblical Exodus, Bernard made friends with an independent scholar, Brad Sparks, who was making a study of the Egyptian background of the Exodus. Bernard funded his research trip to the Middle East and continued to encourage his writing right up to the month of Bernard's death. Likewise, he ran into an independent Australian scholar, Deborah Hurn, who wanted to write a dissertation on the Israelite wilderness wanderings but couldn't find an Australian university to take her on—so he arranged for the Old Testament scholar at Avondale College, David Tasker, and Larry Geraty at La Sierra to supervise her work. Bernard and his wife Bev hosted her at their home just this last November when she presented at the annual meetings of the American Schools of Oriental Research and Society of Biblical Literature in San Diego.

Bernard was a hard-working, resourceful, innovative and committed leader, and a bold visionary. But much of his success in life was due to his personal qualities of warmth, compassion and his constant cheerful and positive disposition. Bernard had an outgoing personality and loved engaging with people in conversation and storytelling. He was generous with his affection and showed genuine interest in everyone he met. He was an articulate and impressive public speaker and a gifted storyteller. Those who were fortunate to know him simply loved him. Bernard's big heart, love for life, sense of humor and sharp Australian wit will be greatly missed. But mostly, his life so joyfully lived will be warmly remembered by his friends at La Sierra's Center for Near Eastern Archaeology.

Bramlett Advanced to Full Professorship

By Friedbert Ninow

During its last meeting, the University Council of La Sierra University voted to grant Dr. Kent Bramlett promotion to the rank of "Professor of Archaeology and History of Antiquity." Kent is the chair of the Department of Biblical Studies and Archaeology at the HMS Richards Divinity School as well as Associate Director of the Center for Near Eastern Archaeology (CNEA) and Co-director of the Balua' Regional Archaeological Project in Jordan. He completed his PhD in Near Eastern Archaeology



(Syro-Palestinian) Magna cum laude at the University of Toronto and has two Master of Arts degrees. He has been active in archaeological research at the Madaba Plains Project in Jordan since 1994 where he served in several capacities, leading to his role as one of the co-directors of the Tall al-'Umayri excavations.

On campus Dr. Bramlett has been involved in the research committee and has coordinated student research during our Research Emphasis Week which has enhanced the involvement of students doing research work and sharing their findings to the campus at large. Together with Doug Clark and Larry Geraty, he has participated in various fund-raising activities to promote the cause of Archaeology at La Sierra and CNEA. His faithful participation in providing good experiences at CNEA during La Sierra University's Homecoming Weekends as well as during University Experience Days (when prospective students from academies around La Sierra visit the university) has created a sense of excitement and anticipation for further studies here at La Sierra University. He has led various Study Tours to the Middle East, especially one for the Central California Conference that helped transform the lives and work of numerous pastors; it has also helped gain an incredible appreciation for scholarship in general and La Sierra University in particular.

We congratulate Kent on his promotion to Professor of Archaeology and History of Antiquity.

Display Case

By Dawn Acevedo and Betty Adams

A look into the creativity of ancient peoples regarding the forms, functions, and materials used for their everyday tools never ceases to spark wonder for those of us who are archaeologically inclined. For example, bone often proved to be a useful material for the ancients in a number of areas, in particular weaving and cosmetics. Betty Adams, graduate of La Sierra's MA Near Eastern Archaeology program, noted in her thesis work on cosmetic palettes in the Iron Age Near East, that spatulas were excavated frequently along with other cosmetic items. Finds from Tall al-'Umayri have included as many as 30 fragmentary and complete bone spatulas, not to mention their bronze counterparts! In numerous experimental archaeology sessions for her thesis, participants utilized a variety of replica instruments for mixing and applying ancient cosmetic recipes. The consensus was that the spatula was the superior tool for cosmetic mixing and application. Morphologically, these ancient

(continued from Front Page)

The next stop for #701 was the Institute of Biological Chemistry at Washington State University (WSU) in Pullman, Washington. The fragment is run through a series of experimental protocols with additional artifacts, to determine if a variety of cosmetic palettes/fragments can be grouped according to the chemical residue returned from individual analyses. The residue extractions on the palettes and fragments used non-destructive solvents (for example pentane, and tartaric acid). The residue collected was then processed by LCMS (liquid chromatography and mass spectrometry) and the results put through a program developed by WSU Research Associate, Anna Berim, which utilized partial component analysis (PCA) and partial least squares analysis (PLSDA) which calculated which artifacts were most similar based on the results. The computer model further analyzed the data based on our designations of each object morphologically, such as a cosmetic palette, flat palette, or "perfume pot." The results from these analyses indicate that certain morphological constructs shared chemical signatures, making them more like some cosmetic items than others.

Our exhausted palette fragment #701 is now taking a well-deserved break back at the Center for Near Eastern Archaeology in Riverside, CA. The efforts put forth in analyzing #701 paved the way for developing the protocols followed in

the summer of 2019 in the field at Khirbat al-Balu'a, Jordan. In the meantime, the work of analyzing the residue collected from objects excavated continues. We intend to continue sharing residue analysis results with you, through *La Sierra Digs*. For a blog report on Betty's most recent research, visit: https://www.acorjordan.org/2020/04/30/adams_bikai_2020/



bone spatulas seem to appear in varied thicknesses. Adams hypothesizes that the thicker spatulas would have been best for cosmetic mixing and application while the thinner spatulas were better used as weaving instruments. The rounded ends easily crushed minerals such as mica, malachite and quartz in tests, whereas the pointed ends of the spatula made eye makeup application easy.



Cosmetic palettes and tools from Tall al-'Umayri, 1984 season.



Visiting Fulbright Scholar: Dr. Ziad Al-Saad from Jordan

By Douglas Clark

The Center for Near Eastern Archaeology and La Sierra University are privileged during the 2020–2021 academic year to have on campus an internationally known, respected, and distinguished archaeologist, professor, and university administrator: Dr. Ziad Mohammad Kayed Al-Saad from Yarmouk University in Irbid, Jordan. Dr. Saad earned his bachelor's and master's degrees in chemistry at Yarmouk University and his PhD in conservation and management of cultural heritage at the University of London (1992).

A professor and administrator with experience at Camberwell College (London) and Yarmouk University, Al-Hussein bin Talal University, and German-Jordan University in Jordan, Dr. Saad also served as Director General of the Department of Antiquities of Jordan (DoA), overseeing scores of archaeological projects and myriad archaeological events and responsibilities. In 2010, we were honored to have him officially onsite at the Madaba Plains Project excavations at Tall al-'Umayri. Dr. Saad helped finalize a strategic plan for the DoA which he announced in San Diego just before visiting the La Sierra University campus to deliver a lecture.

While the Fulbright Fellowship is primarily for research into his area of expertise, the conservation of archaeological sites, he will also provide for students of many disciplines and faculty at La Sierra, as well as members of the community numerous presentations and course lectures (watch for further information). This area of research matches well the American Schools of Oriental Research Lawrence T. Geraty Endowment, established last year to provide funds for conserving archaeological sites.



We are looking forward to having Dr. Saad, his wife, and his daughter at La Sierra next school year, assuming the current virus crisis will be resolved by then; he will have an office at the Center for Near Eastern Archaeology.

Near Eastern Archaeology under COVID-19

By Douglas Clark

As we all know, the coronavirus which causes COVID-19 has affected everything and everyone in one way or another around the world, for some with deadly consequences. Orders to shelter in place, maintain social and physical distancing practices, endure total lock-downs, avoid groups of people larger in number than ten, forget about most travel especially international travel, these have all placed stringent limitations on archaeological research in the Middle East.

Fortunately for our work at CNEA, the country of Jordan has reported the lowest number of cases in the region (just over

400), while other states like Israel, Egypt, Saudi Arabia, Iran, and other neighbors have high rates of infection. The reason has to do with the stringent, even brutal and often total curfew the Jordanian government imposed on its citizens, which seems to be working well and is accepted by citizens as a necessary step toward returning to normalcy.

In any case, most excavation projects have either been cancelled for 2020 or plans are still in limbo. Projects connected with CNEA have varied intentions. With the Madaba Regional Archaeological Museum Project (MRAMP), we had to postpone a May excavation season, possibly returning to the field in September and our US Ambassador's grant for our work in Madaba is currently on hiatus; at the same time we have recently signed a new grant cycle with USAID/ACOR/SCHEP, effective through September and based entirely on benchmarks achievable online. The Balu'a Regional Archaeological Project (BRAP) is not scheduled to excavate again until 2021, but the Ataruz project is still scheduled for June and July.

Because any decision to excavate depends not only on dig directors but on their staffs, students (and parents of students), university liability clauses, available finances in a time of market volatility and diminished endowments, local governments, national and international travel, and general regional health conditions, very few are taking the risk. Archaeological research in the Middle East is to a large degree on hold for now.

COVID-19 and CNEA

By Dawn Acevedo

Many of you may be relating to Charles Dickens' famous words, "It was the best of times, it was the worst of times." Indeed, such seems to be the case for us here at La Sierra University and CNEA! While we are all trying our hardest to cherish this newfound abundance of time with our families and pets, we would be remiss not to acknowledge the difficulty of these days spent sheltering-in-place, the fear of the unknown that seems to be the new normal, the pain and heartache that is felt by so many of our friends and colleagues around the world, and even the homesickness we feel being away from our collections, research, and public outreach right now. But I would like to emphasize the "right now" at the end of that statement. We know that this will not last forever. We trust that life will return to normal, even if that normal is not the same as it was before, and that the fear and uncertainty will eventually dissipate.

As we acknowledge these widespread emotions and experiences, we want to take a moment to share with you, our friends and archaeology family, how CNEA has specifically been affected by COVID-19:

La Sierra University closed its doors on March 16 according to orders issued by the Riverside County Public Health Officer on the evening of March 13. This closure resulted in the transition of all applicable Faculty and Staff to work from home for the remainder of the closures. Unfortunately, this means that jobs requiring campus access such as that of our incredible student worker, Kacey, had to be discontinued until further notice. Volunteers had been asked to forego their work the week before the official orders came through. Now, Dr. Bramlett is

adjusting to fully online teaching, including his Archaeological Methods and Theory course which is most effective in a hands-on environment. Dr. Clark has had to cancel his trips to Jordan for work on the Madaba Regional Archaeological Museum Project and only barely made it home before Jordan closed its borders to incoming and outgoing air traffic. Our Homecoming Lecture and Open House were, of course, postponed until 2021. Students have returned home, one graduate student having to travel all the way back to Canada. Artifact inventory and research has come to a halt, as well. And I, personally, am doing all I can from home while deeply missing the labs, artifacts, and interaction with our students and volunteers.

Financially, the university as a whole is taking a significant hit during this time as enrollment is down for the spring quarter, tuition has been necessarily discounted, and typical on-campus sources of revenue are closed. Included in these hardships is fundraising for CNEA as our operating costs have not changed during this time. We believe it is crucial for us to retain as many staff and faculty as possible for the sake of our operations. Additionally, temperature control in our buildings has to be maintained for the sake of our artifacts. We are also continuing to plan for our annual Archaeology Discovery Weekend in November, which we still hope to keep as a free event open to the public. We know that in the midst of economic decline, layoffs, potential job loss, and constant policy changes, financial stability is a hope shared by many, and our wish for all of you is that you are affected by COVID-19 as minimally as possible, that you all stay healthy, that we will see you all again soon, and that we continue the good works prepared for us to do.

Homecoming 2020 Cancelled

By Dawn Acevedo

Homecoming 2020, featuring a lecture on the La Sierra coins by Terri Shaw, the 2nd annual conferring of the CNEA Archaeology Awards, CNEA Open House and Displays, and Bedouin Tent Reception, has been cancelled due to the COVID-19 crisis. We

12th Annual Archaeology Discovery Weekend • Nov 14-15, 2020

Southwest Turkey

Famous Cities, Churches, and Synagogues

Lecture Topics

Southwest Turkey (part of ancient Anatolia and Asia Minor) has long been an important region in the Mediterranean world, known for its dynamic cultural, political, and religious landscapes. It is home to the Seven Churches of the Apocalypse, ancient synagogues, monumental cities of antiquity, philosophical movement toward scientific thought, rich religious artistic traditions. Presenters include internationally known and respected archaeologists from Turkey, Austria, and around the US.

Locations

Center for Near Eastern Archaeology & Zappala School of Business at La Sierra University
4500 Riverwalk Parkway
Riverside, CA 92505

Find out more at
lasierra.edu/archaeology

p: 951 785-2632 (CNEA)
e: archaeology@lasierra.edu

Schedule

Saturday, November 14

Illustrated presentations and discussions, Bedouin Hospitality Tent, Authentic Mediterranean Banquet, and more!

Sunday, November 15

Illustrated presentations and discussions, Kids Dig, hands-on displays and activities, and more!

Photograph: Library of Celsus, Ephesus (wikimedia)



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will reschedule some of these events at a later time, including the lecture and CNEA awards to be presented to our honored recipients, Gary and Suha Huffaker and Vera Kopecky. We hope to see you all at our 12th Annual Archaeology Discovery Weekend in November, as well as Homecoming 2021 next April!

WHAT'S IN A NAME?

A lot, it turns out! Names matter. Names add substance and significance to something. And we ask you to consider adding your name to one or more components of the Center for Near Eastern Archaeology's funding structure for 2020–2021. In order to sustain CNEA and its campus, community, and global archaeological activities and outreach until our new museum is established, and then in modified configuration beyond that, we would love to have you support in part or in whole one of the following named budget components:

- **[YOUR NAME]** Archaeology Discovery Weekend 2020 – Funding for travel and expenses of world-class archaeologists to present cutting-edge results about the latest archaeological discoveries from around the eastern Mediterranean and the Middle East at what has become an internationally known and respected annual event (\$15,000)
- **[YOUR NAME]** CNEA Publications Office Fund – Financial support for our CNEA Publications Manager (part time)

who produces camera-ready print materials for published CNEA-sponsored archaeological reports and layout for *La Sierra Digs* (\$10,000)

- **[YOUR NAME]** *La Sierra Digs* Publication Grant – Support for printing and mailing our quarterly CNEA newsletter (\$5,000)
- **[YOUR NAME]** CNEA Student Research Fellowships – Support for student research at CNEA which enables CNEA to publish its findings (\$5,000)
- **[YOUR NAME]** CNEA Student Excavation Scholarships – Travel fellowships to support students in meeting fieldwork requirements in Jordan for their archaeology major or minor (\$5,000)

THANK YOU for letting us know which of these special CNEA opportunities you would like to support by emailing us at archaeology@lasierra.edu or visit lasierra.edu/donate.



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ARCHAEOLOGY

LA SIERRA UNIVERSITY

2020 Calendar of Events

May 2020

MRAMP project in Madaba - CANCELLED

22 June–14 July 2020

Ataruz Excavations

14–15 November 2020

Archaeology Discovery Weekend 2020:
Southwest Turkey: Famous Cities, Church-
es, and Synagogues

SUPPORT CNEA!

As this issue of *La Sierra Digs* makes clear, the Center for Near Eastern Archaeology at La Sierra University is still on the move! And it needs your support for student travel scholarships, the new university museum, and ongoing operations. Please go online at <https://lasierra.edu/donate> and click on “Center for Near Eastern Archaeology” to make your contribution. Or contact the Office of University Advancement at (951) 785-2500. Thank you!

Recent Discoveries

Assembled by Dawn Acevedo

A New Technique for Dating Ancient Pottery

A new technique involving the radiocarbon dating of lipid compounds isolated from ancient, unglazed pottery is providing revolutionary new dating options for archaeologists. While the new technique requires the destruction of artifacts to obtain results, pottery is often the most prevalent resource from an archaeological site and much of it is kept for research and analysis rather than display. <https://www.sciencedaily.com/releases/2003/09/03093005244.htm>

Canaanite Temple Discovered at Lachish

2019 excavations at the ancient citadel of Lachish in Israel under the direction of Yosef Garfinkel revealed a Canaanite temple which has yielded numerous artifacts including gold, silver, bronze, pottery and stone! Professor Garfinkel stated, “I’ve never found so much gold in my life!” While previous seasons have offered slim information regarding the site’s history, this find offers a wealth of information regarding Canaanite culture and religion. <https://popular-archaeology.com/article/new-revelations-at-lachish/>

Roman Forum’s Ode to Founder?

An underground chamber dating to circa the 6th century BC may have been dedicated to Rome’s mythological founder, Romulus. The “shrine” contains an empty sarcophagus and what appears to be an altar. Some researchers believe this was deliberately built above “the spot where ancient Romans believed Romulus was buried,” according to information from ancient sources. <https://www.smithsonianmag.com/smart-news/possible-shrine-romulus-uneearthed-roman-forum-180974240/>