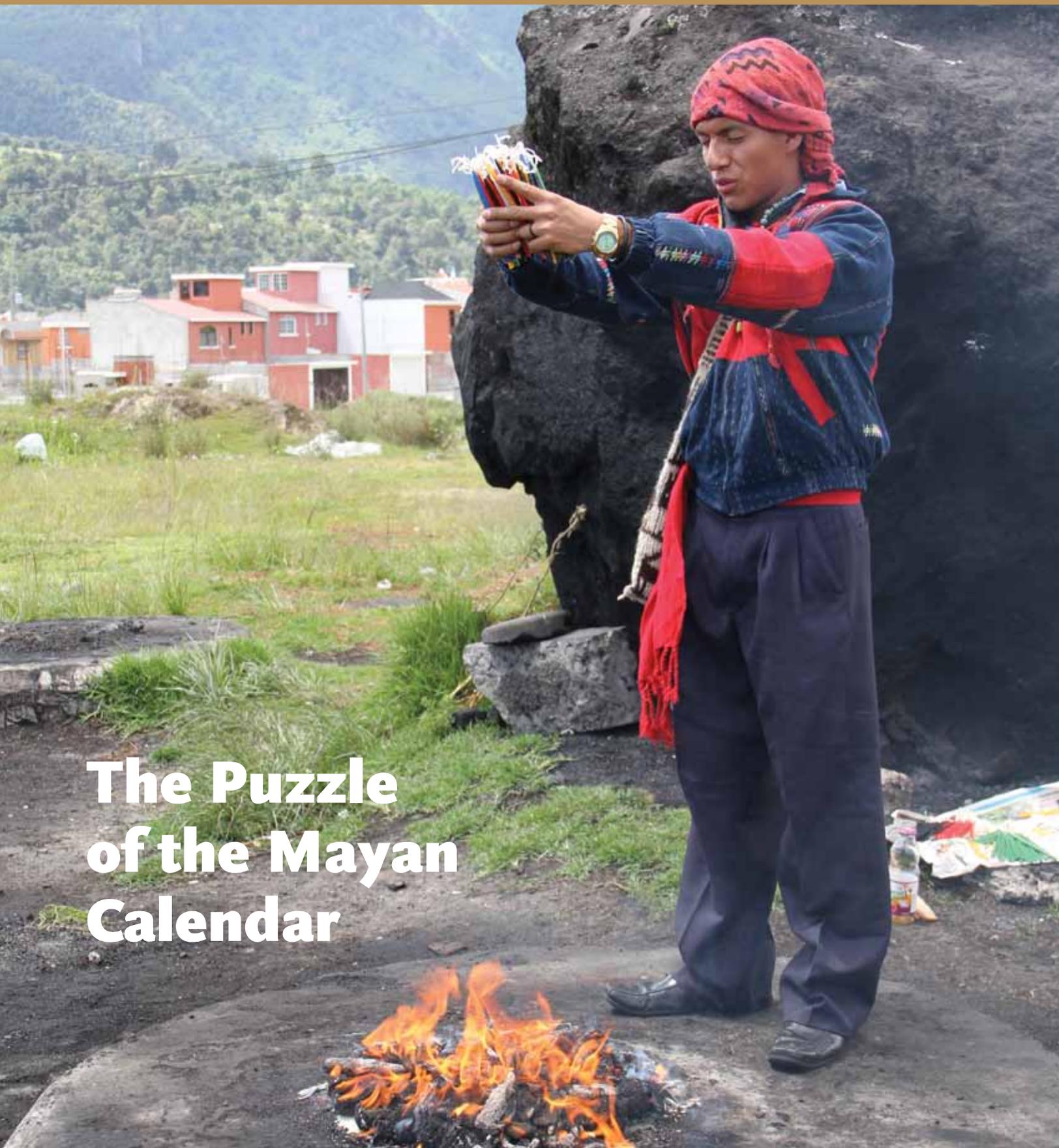


BACKDIRT

2012

ANNUAL REVIEW OF THE COTSEN INSTITUTE OF ARCHAEOLOGY AT UCLA

The Puzzle of the Mayan Calendar



BACKDIRT

ANNUAL REVIEW OF THE COTSEN INSTITUTE OF ARCHAEOLOGY AT UCLA

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Front cover: Daykeeper Carlos Quiiej performing a ceremony on the outskirts of Quetzaltenango, Guatemala, 22 July 2012. Photo: Rhonda Taube.

Back cover: Medieval memorial stela, Armenia. Photo: Patty Civalieri.

SPECIAL THANKS

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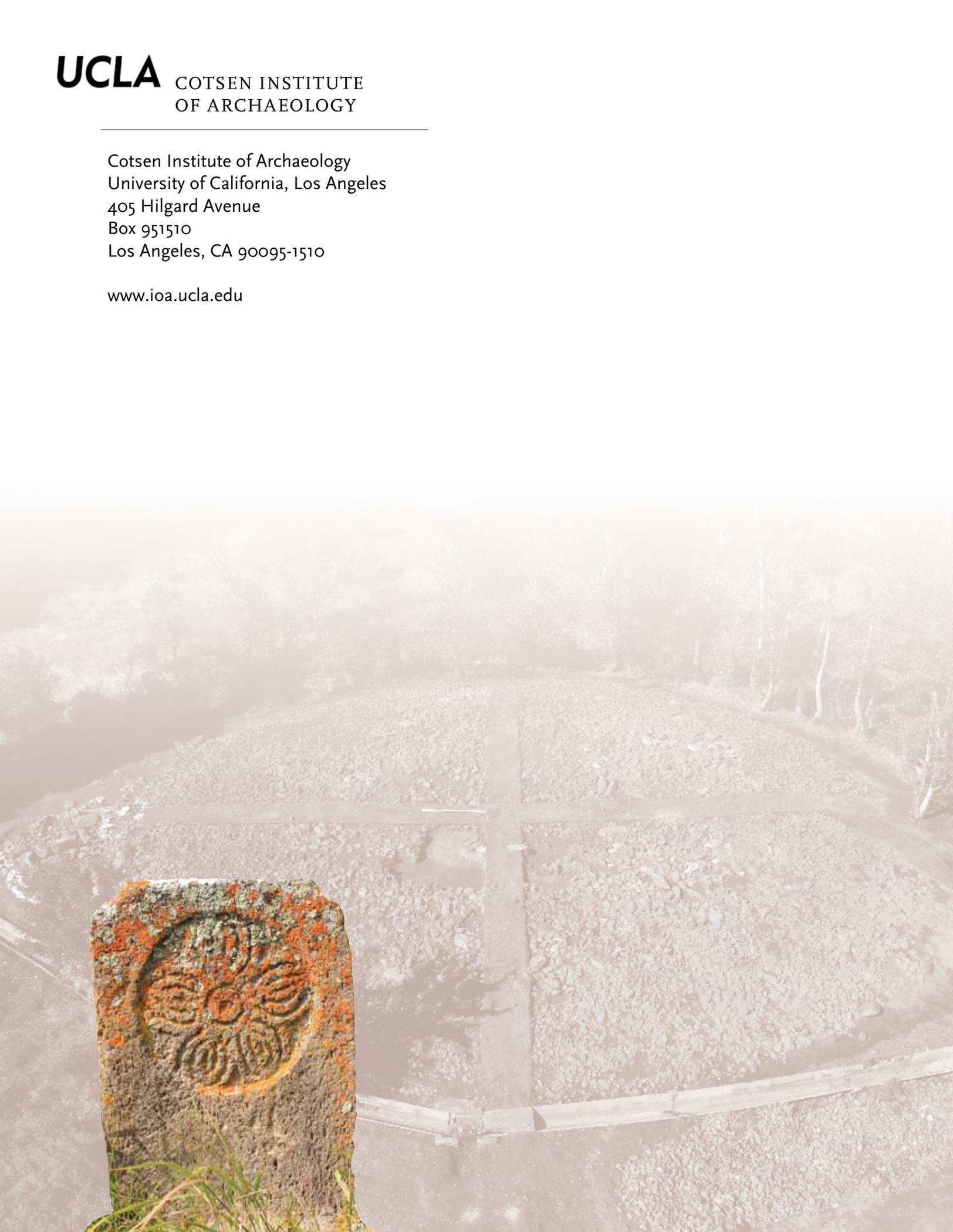
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Message from the Director of the Institute



I am pleased to report that 2012 has been a banner year for the Cotsen Institute. As many of you know, I came on as Director more than ten years ago. I still remain amazed at the growth of the Institute over these years thanks to our faculty, researchers, students, and awesome staff. I have occasionally mentioned that recently we were ranked best in the country among graduate programs in archaeology by the gold standard of such rankings, the National Research Council, a ranking that is done once every ten years. We now have one of the best archaeological presses in the world thanks to the leadership of Willeke Wendrich and Gregory Areshian. I am pleased to announce that we have just hired a new Publications Manager, Astrid Virding, who has an outstanding professional track record, and we have signed a new distribution contract for our books with the University of New Mexico Press. We became an award-winning press when Lothar von Falkenhausen's book on ancient China received the Best Book of the Year Award from the Society for American Archaeology. Soon after Martin Peilstöcker and Aaron Burke's *History and Archaeology of Jaffa* was awarded the 2011 G. Ernest Wright Publication Award by the American Schools of Oriental Research. We publish about ten books a year and look forward to expanding this in the future. One of the recently published books, *Life at Home in the Twenty-First Century* by Jeanne Arnold, Anthony Graesch, Enzo Ragazzini, and Elinor Ochs, has become a mini sensation outside the academic community. We have ambitious plans for digital and hybrid publications in the future as well.

The year 2012 saw substantial expansion of fieldwork. The Institute initiated or co-sponsored three new projects, including new excavations and field studies of previously excavated materials, in Greece (Ancient Methone Archaeological Project lead by Manthos Bessios, Sarah Morris, and

John Papadopoulos), Peru (the Chincha Archaeological Project co-directed by Charles Stanish and Henry Tantaléan), and Armenia (the Masis-Blur Archaeological Project co-directed by Gregory Areshian, Pavel Avetisyan, and Charles Stanish).

The list of individual faculty members and students who were recognized this year is long and impressive. Professor Jeanne Arnold was elected Honorary Fellow of the California Academy of Sciences. National Geographic Radio interviewed Professor Monica Smith about her research at Sisupalgarh. In May, President Barack Obama's office announced the appointment of Professor von Falkenhausen as a member of the Cultural Property Advisory Committee. Jo Anne van Tilburg was featured on the cover of the Portuguese *Revista de Arqueologia*, and she was commended by the Archaeological Institute of America's President, Elizabeth Bartman, in *Archaeology* magazine. Professors Richard Lesure and Aaron Burke won two out of only five long-term research grants awarded in archaeology by the National Endowment for the Humanities for next year. Three out of eleven seed grants created by the Office of the Vice Chancellor for Research "to provide resources for new transdisciplinary research and scholarship" were awarded in the spring of 2012 to the faculty, researchers, and graduate students of the Cotsen Institute, followed by two more awarded in the fall. And, finally, our recently graduated Ph.D. student Abigail Levine and I had our research named one of the top ten discoveries last year by *Archaeology* magazine.

Our lecture series continues to be vibrant and popular, thanks to Helle Girey and Jill Siltan. We believe that archaeology should be both intellectually exciting and a lot of fun, and these events that reach a large public are central to that goal.

Finally, we are deeply grateful for the generous support of so many of our friends, which enables us to maintain our standing as a leader in our field at one of the most prestigious research universities in the world. I extend my best wishes for the new year, and I hope to see you at one of our many upcoming events.

CHARLES STANISH
Director, Cotsen Institute of Archaeology
Professor of Anthropology, UCLA

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How Archaeology Is Made: The *Backdirt* Perspective

GREGORY E. ARESHIAN¹

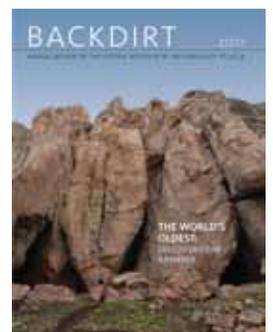
The 2011 issue of *Backdirt* evoked many excited and reflective comments and sometimes suggestions from readers. Especially welcome was the feedback concerning the changes introduced in the structure and the expansion of the content; above all, readers noticed that the new *Backdirt* is beginning to occupy a unique position among institutional archaeological periodicals published worldwide—somewhere between a peer-reviewed academic journal and a magazine designed for the general public. This leads to a more general and fundamentally important matter concerning the mission of *Backdirt*.

As mentioned in the introduction to the preceding issue (*Backdirt* 2011, p. 4), this redesigned annual presents the view of one of the largest archaeological communities of the United States on world archaeology and tells the story of that community's creation and dissemination of archaeological knowledge. The process of creation of scientific knowledge, including archaeology, is a result of concerted efforts of researchers, educators, students, administrators, funders, sponsors, and public supporters, all of whom must be deeply committed to and qualified for their tasks. Yet no major and, especially, no long-term enterprise can become truly successful without a balanced coordination of those efforts, their mobilization and focus on major goals, and the completion of interim stages.

Amazingly, there is no contemporary periodical in the world specifically devoted to the presentation and analysis of the current process of formation of archaeological knowledge. Thus, presenting and representing the Cotsen archaeological community, *Backdirt* has gradually come to formulate its mission as one that tells the story of how archaeology is made. Today *Backdirt* reflects the enormous diversity of the intellectual experience of the Cotsen community accumulated through decades of painstaking and inspirational work.

This issue presents the broadest possible array of topics connected by the interrelated practices of the Cotsen archaeological community. With articles ranging from personal memoirs about Louis and Mary Leakey, the discoverers of the remains of the oldest ancestors of humankind; to the reflections of one of the distinguished doctoral alumni on the early institutionalization of archaeology at UCLA; to the exciting intellectual, emotional, and cross-cultural experiences of the Cotsen graduate students who, a few months ago, switched their fieldwork season between Peru and Egypt—*Backdirt* presents this collective experience in the transformation of previously accumulated knowledge that determines the makeup of contemporary archaeology. The future will tell if *Backdirt* should and will be able to expand this perspective beyond the scope of the Cotsen archaeological community.

¹ Editor, *Backdirt*.





Presidential Appointment of Lothar von Falkenhausen

The Cotson Institute celebrates the presidential appointment of Lothar von Falkenhausen, Associate Director of the Cotson Institute and Professor of Chinese Archaeology and Art History at UCLA, to a key administrative post. In May 2012, President Barack Obama announced, via the White House's Office of the Press Secretary, the appointment of Professor von Falkenhausen to the Cultural Property Advisory Committee. While describing von Falkenhausen, along with a number of other presidential appointees, President Obama said "these individuals have demonstrated knowledge and dedication throughout their careers. I am grateful they have chosen to take on these important roles, and I look forward to working with them in the months and years to come."

The Cultural Property Advisory Committee informs "the president (or his designee) on appropriate U.S. action . . . in protecting . . . cultural heritage. . . The Department of State—specifically the Assistant Secretary of State for Educational and Cultural Affairs—exercises the president's decision-making responsibilities under the Act."

War and State Formation: Charles Stanish's Excavations Ranked Among the "Top Ten Discoveries of 2011" by *Archaeology Magazine*

Cotson Institute Director and Professor of Anthropology Charles Stanish and Abigail Levine, recent Ph.D. in Anthropology, led a team in excavating the first-century-C.E. site of Taraco situated near the northern end of Lake Titicaca in Peru. Following a site-wide burnt destruction layer at Taraco, the neighboring rival settlement of Pukara begins to show signs of increased urbanization and social stratification. Rather than impeding growth, Stanish and Levine's work demonstrates that warfare, in such circumstances, can be understood as a key factor fostering cultural evolutionary changes.



Sunken court complex at the site of Pukara.

Cotsen Institute Announces the Inaugural Triennial International Competition for the Lloyd Cotsen Prize for Lifetime Achievement in World Archaeology

Funded from a special permanent endowment established by Mr. Lloyd Cotsen, a prize of \$40,000 will be awarded every three years to a distinguished senior archaeologist from any country who actively continues contributing to the creation of archaeological knowledge and meets other criteria of accomplishments as decided by a jury. Another \$10,000 will be granted to a former Ph.D. student of the senior awardee who is also currently engaged full-time in archaeology. Potential candidates can be nominated based upon information found on the website www.cotsenprize.org.

**THE COTSEN INSTITUTE OF ARCHAEOLOGY
OF THE UNIVERSITY OF CALIFORNIA, LOS ANGELES**

ANNOUNCES

THE INAUGURAL TRIENNIAL INTERNATIONAL COMPETITION FOR

**THE LLOYD COTSEN PRIZE
FOR LIFE-TIME ACHIEVEMENT
IN WORLD ARCHAEOLOGY**

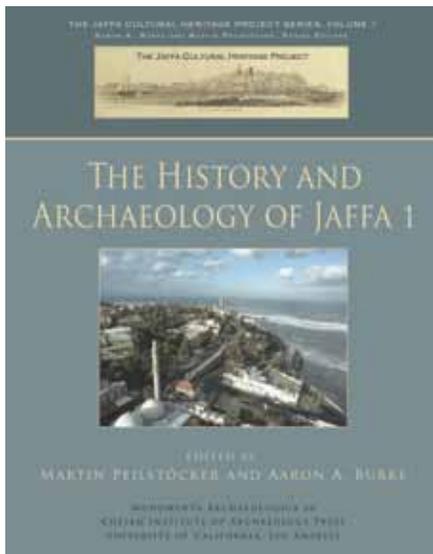
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ESTABLISHED BY MR. LLOYD COTSEN as a permanent endowment at UCLA, this prize will be awarded every three years to an active senior archaeologist for lifetime achievement in archaeological research and mentorship. The prize includes an unrestricted cash award of US \$40,000 to the senior laureate and US \$10,000 to one of his or her former Ph.D. students who is currently engaged in full-time research and teaching in the field of archaeology.

Nominations may be submitted by individual distinguished scholars and/or by established research institutions from any country. Nominations will be accepted up to January 31, 2013. A jury formed by the Cotsen Institute of Archaeology at UCLA will select the awardees. The decision will be announced in March, 2013. The awardees will receive their prize and deliver one lecture each at a ceremony to be held at UCLA in 2013.



**Nomination forms and additional information about the
Lloyd Cotsen Prize for Life-Time Achievement in World Archaeology
are available at www.cotsenprize.org**



Aaron A. Burke Receives G. Ernest Wright Award for Best Archaeological Publication

The most prestigious book award of the American Schools of Oriental Research (ASOR) was given to Aaron A. Burke, Associate Professor of the Archaeology of the Levant and Ancient Israel (Department of Near Eastern Languages and Cultures, and Cotsen Institute of Archaeology, UCLA), for the first volume of a monograph presenting the results of the Jaffa Cultural Heritage Project's research in Israel. This honor was awarded to Professor Burke, and to his co-director and co-editor Martin Peilstöcker, during ASOR's Annual Meeting in 2011. Concerning the award, the following statement was provided describing the volume's significance:

Martin Peilstöcker and Aaron Burke's work, *The History and Archaeology of Jaffa*, represents a significant contribution to our knowledge and understanding of the eastern Mediterranean. The volume includes a collection of essays on the material remains of Jaffa from the Middle Bronze Age to the Crusader Period, representing the basic framework for research on Jaffa, past, present, and future.

Along with the recent explorations of Jaffa, the re-analysis and publication of materials excavated by the late Jacob Kaplan provide a research model for further works in larger projects of urban archaeology. The book richly deserves this year's G. Ernest Wright Award.

Multiple News Outlets Cover Jo Anne Van Tilburg's Continuing Work on Easter Island

In addition to being showcased in a featured article and cover image of the Portuguese *Revista de arqueologia*, Dr. Jo Anne van Tilburg's (Visiting Assistant Professor, Cotsen Institute of Archaeology, UCLA) ongoing conservation and excavation efforts on famous Easter Island (Rapa Nui) was also commended by the Archaeological Institute of America's (AIA) President Elizabeth Bartman in *Archaeology* magazine. Recently collaborating with Professor Christian Fischer from the UCLA/Getty Conservation Program, Professor van Tilburg has worked on the island for thirty years, during which time she has ceaselessly strived to prevent deterioration of the *moai* (colossal statues) from weathering, vandalism, tourism, and development, all while continuing academic research.

President Bartman visited the island this past spring and lauded the achievements of van Tilburg in the wake of the AIA's awarding a Site Preservation grant to her in 2008.



Richard Lesure and Aaron A. Burke Awarded National Endowment for the Humanities (NEH) Grants

Two long-term research grants were awarded by the NEH. One went to Aaron A. Burke, Associate Professor of the Archaeology of the Levant and Ancient Israel (Department of Near Eastern Languages and Cultures, and Cotsen Institute of Archaeology, UCLA), for his Jaffa Cultural Heritage Project (JCHP) work in Jaffa, Israel. Professor's Burke research in Jaffa will deal with excavation and analysis of a New Kingdom (fifteenth century B.C.E.) Egyptian fortress in the Canaanite city, under the project title "Insurgency, Resistance, and Interaction: Archaeological Inquiry into New Kingdom Egyptian Rule in Jaffa." He was awarded a grant of \$200,000 for 36 months.

Richard Lesure, Professor of Anthropology (Department of Anthropology and Cotsen Institute of Archaeology, UCLA), likewise received a grant for his research into the Early Formative period of Mexico. Professor Lesure will be writing two monographs on pre-Olmec and Olmec archaeology (1900–900 B.C.E.) of the Soconusco region of Mexico, including one titled *The Origins of Ancient Mesoamerican Art*. He was awarded a grant of \$185,000 for 30 months.

Cotsen Institute Leads UCLA in Interdisciplinary and Transdisciplinary Research

Of eleven Transdisciplinary Seed Grant Awards across the UCLA campus in the spring of 2012, three were received by researchers of the Cotsen Institute. The seed grants were created by the Office of the Vice Chancellor for Research (OVCR) and the Academic Senate Council on Research (COR) in order "to provide resources to UCLA faculty from the Humanities, Arts, and Social Science disciplines in furtherance of new transdisciplinary research and scholarship with the notion that the collaboration between different areas of study would open the

door to new areas of inquiry and possibilities that otherwise could not have been explored within the confines of a single disciplines."

The funded teams from the Cotsen Institute include 1) Professors Hans Barnard and Willeke Wendrich, in collaboration with Professor Kym Faull of Psychiatry and Biobehavioral Sciences, and including Archaeology IDP graduate student Ben Nigra (project title "Chemical Evidence for Alcoholic Beverages in the Ancient and Modern Vitor Valley [Arequipa, Peru]"); 2) Professors Ioanna Kakoulli and Christian Fischer, along with Professor Mark Harrison of Earth and Space Sciences (project title "Hyalos-Vitrum-Glass: Tracing the Provenance of Sands Plant Ashes and Natron Salts"); and 3) Professor Charles Stanish, working with Professors Kym Faull and Edward Young of Earth and Space Sciences, along with Archaeology IDP graduate student Laura Griffin (project title "Integrating a 87Sr/86Sr Isotopic Map with Archaeological Research in the Chincha Valley, Peru").

This Fall, two other Transdisciplinary Seed Grants were awarded: 1) to Professor Aaron Burke, along with scholars from Cornell University, University of Minnesota, and Professor Felix Höflmayer, UCLA Visiting Scholar from the Deutsches Archäologisches Institut, (project title "Radiocarbon Chronology and the Late Bronze Age Eastern Mediterranean"); 2) to Professor Ellen Pearlstein of the Cotsen Conservation Program along with co-PIs Professor Miguel García Garibay, UCLA Department of Chemistry and Biochemistry, and Associate Professor Kevin McGraw, School of Life Sciences, Arizona State University (project title "Identification and Measurement of Chemical and Microstructural Changes in Bird Feathers as Early Markers of Light Induced Degradation").

Grants Awarded to the UCLA/Getty Masters Degree Program in the Conservation of Archaeological and Ethnographic Materials

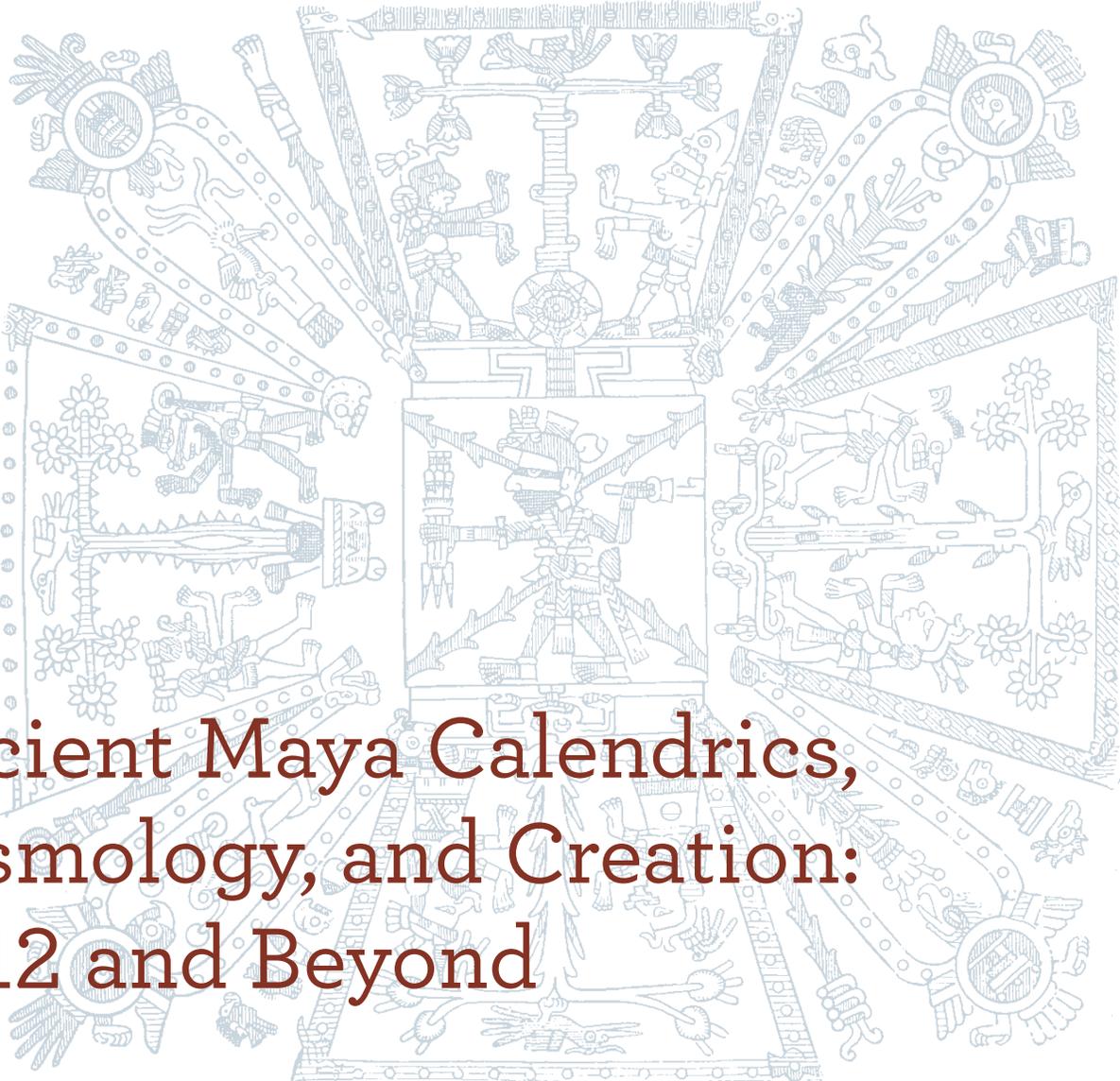
Other grants were awarded to the UCLA/Getty Masters Program in the Conservation of Archaeological and Ethnographic Materials, including a major endowment matching challenge grant of one million dollars by the Andrew W. Mellon Foundation and a grant of \$15,000 over three years by the Samy Yukuan Lee Foundation. In addition, Professor Ioanna Kakoulli, in partnership with Professor Gaurav Sant from the Department of Civil and Environmental Engineering, and Professor Ben Wu from the Department of Bioengineering, were awarded a National Science Foundation grant of \$420,000 from the Division of Materials Research (DMR) for their project “Biomimetic Methods Based on Soluble Ammonium Phosphate Precursors for the Consolidation of Wall Paints.” In collaboration with Dr. Sergey Prikhodko from the Materials Science and Engineering Department and Professor Christian Fischer from the UCLA/Getty Conservation IDP, Professor Kakoulli has also received an instrumentation award of \$200,000 from the Shared Recourses Consortium (SRC) at UCLA for the purchase of a Raman spectrometer to be coupled with the variable pressure scanning electron microscope at the Molecular and Nano Archaeology Laboratory.



Jeanne E. Arnold Elected Honorary Fellow of the California Academy of Sciences

Out of ten newly inducted members this year, Professor Jeanne E. Arnold (Department of Anthropology and Cotsen Institute of Archaeology, UCLA) is the only social scientist to hold the distinction of being elected to this prestigious society. Professor Arnold’s decades of work on California archaeology and hunter-gatherer complexity, in addition to her excellent publication record, were cited for her election.

—Brett Kaufman, Cotsen Institute of Archaeology, UCLA



Ancient Maya Calendrics, Cosmology, and Creation: 2012 and Beyond

KARL TAUBE¹

FOR OVER A HUNDRED YEARS, calendrics have dominated our perceptions of the ancient Maya. Thanks to the brilliant epigraphic insights by the German scholar Ernst Förstemann concerning calendric tables in the pre-Hispanic Codex Dresden, by the late nineteenth century we understood almanacs concerning the 260-day calendar, tables pertaining to eclipses as well as the 584-day Venus cycle, and last but not least, the Long Count. Although the Codex Dresden is Late Postclassic (1250–1521 C.E.), the

Long Count is pervasive in monumental inscriptions dating to the earlier Classic period (250–900 C.E.). A. P. Maudslay's *Archaeology* volumes in *Biologia Centrali-Americana* was the first comprehensive publication of Classic Maya monuments (Maudslay 1889–1902). As an appendix to these volumes, Joseph Goodman noted the presence of the Long Count first elucidated by Förstemann, and in 1905 provided a correlation of Long Count dates to the Christian calendar; with minor emendations this correlation continues to be widely used by researchers today (see Coe 1992: 111–14). As will be noted

¹ Department of Anthropology, University of California, Riverside.

below, the Long Count is a remarkably sophisticated and complex calendric system that concerns massive periods of time and, for that reason, the Long Count was central to Maya epigraphic research for much of the twentieth century.

J. Eric S. Thompson, one of the preeminent archaeologists of the last century, dominated the field of Maya epigraphic research for many years. In his popular and influential work, *The Rise and Fall of Maya Civilization*, Thompson had this to say concerning the content of Classic Maya inscriptions: “These texts, to the best of our knowledge, contain no glorifications of ruler or recital of conquest, such as are customary on the monuments of other peoples. Instead, they are an important record of steps in search of truth, as the Maya saw it, that is, the whole philosophy of time with its interlocking cycles of divine influence” (Thompson 1954: 265).

However, our perceptions of the content of Classic Maya texts began to change radically in the 1960s thanks to epigraphic research by Heinrich Berlin, Tatiana Proskouriakoff, and others, which demonstrated that, like “other peoples,” the Classic Maya did indeed record significant historical events, including battles, royal accession, and marriage. In his second edition of *The Rise and Fall of Maya Civilization*, Thompson revised his statements substantially and noted: “I once saw stela texts as purely calendric and astronomical. It is now clear that there was no such abnegation of glory; rulers did leave memorials of their accessions” (Thompson 1966: 303). Due to great advancements in epigraphic decipherment in the past fifty years, we now have an extensive and detailed understanding of Classic Maya history (e.g., Martin and Grube 2008). Having said that, Maya calendrics along with mysticism and myth has returned once again to the forefront with a great cycle of thirteen Bak’tuns ending this very year on December 21, the winter solstice, making this a very timely topic indeed. For the following discussion, I will address Maya calendrics in the broader context of ancient Mesoamerica, including what traits were shared by other peoples and what were specific to the Maya region. In addition, many Maya calendric traditions continue to the present in highland Guatemala, with contemporary Maya ceremonialists contemplating and commenting on the completion of the current Bak’tun cycle.

Although the Formative period Olmec (ca. 1150–500 B.C.E.) are often regarded as the “Mother

Culture” of ancient Mesoamerica, we currently have no evidence that they used calendric notation. The first evidence of this is for the nearby Zapotec of highland Oaxaca. San Jose Mogote Monument 3, dating to roughly 600 B.C.E., features a slain figure

Maya calendrics along with mysticism and myth has returned once again to the forefront with a great cycle of thirteen Bak’tuns ending this very year on December 21, the winter solstice.

with a date with the numeral 1 and a day name in the Zapotec system of the 260-day calendar, one of the basic traits of the cultural region of Mesoamerica. A permutable system, the 260-day calendar is based on the combination of the numbers 1 to 13 combined with 20 consecutive day names, much like our named seven-day week. However, unlike Monday, Tuesday, Wednesday, and so on, the 20 days must be accompanied with a number, such as 1 Monday, 2 Tuesday, 3 Wednesday. However, since there are 13 numbers rather than 20, the combination of numerals and day names only partially overlap and create a combination that only repeats after 260 days ($13 \times 20 = 260$). In the case of San Jose Mogote Monument 3, and with the later Classic and Postclassic Zapotec and Mixtec of Oaxaca, this 260-day date probably refers to the name of the person depicted. In contrast, the 260-day calendar was not used to name individuals among the ancient Maya. However, as in the rest of Mesoamerica, this calendar was closely tied into one’s personal fate. Among the contemporary K’iche’ of highland Guatemala, the 260-day cycle is believed to be based on the time of human gestation, as this is roughly nine months (Tedlock 1982: 93; Earle and Snow 1985). That is,



Figure 1. Day names and sacrifice in ancient Mesoamerica. a) Severed head with triple blood scroll, detail of Chocola Monument 1, Late Preclassic Maya. b) Day name with triple blood scroll, detail of Stela 10, Kaminaljuyu, Late Preclassic Maya. c) Day name with cartouche and triple blood scroll painted red. Detail of West Wall mural from Pinturas Sub-1A, San Bartolo, Late Preclassic Maya. d) Day name Ajaw with triple blood scroll below, detail of text from Copan Stela 63. e) Day name Dog with blood spurting from neck, Codex Cospi, Late Postclassic highland Mexico. f) Day name Deer with severed neck, Codex Cospi. g) Day name Dog with severed neck, carved panel from Tlatelolco, Late Postclassic Aztec. Drawings by Karl Taube.

one is born on the same date as one's original conception, with the entire series of the sacred 260 days carried through in the mother's womb. Thompson explicitly dismissed this explanation: "there is no logical explanation as to why the period of pregnancy should be considered in establishing a divinatory almanac" (Thompson 1950: 98). I, however, cannot think of anything more personal and relevant to one's fate and individuality than a person developing during gestation.

For the ancient Maya, the first examples of the 260-calendar appear during the first century BC at such sites as Izapa, Takalik Abaj, and Kaminaljuyu. Although these are located primarily in the southern piedmont and highlands of the Maya area, there is also Loltun Cave far to the north in Yucatan, where at the entry of a major and quite impressive cave system one faces a huge bas-relief of a Maya king and a text with the date of 3 Chuen, or 3 Monkey. Begin-

ning during the Late Preclassic period and continuing to the Late Classic Maya, day signs appear in cartouches with a triple-scroll motif at the bottom (Fig. 1b–d). For the ancient Maya, this triple scroll denotes blood, much as if all of the sacred 20 day names were freshly severed heads, as can be seen in the case of a trophy head appearing on a Late Preclassic monument from Chocola (Fig. 1a). In addition, the roughly contemporaneous West Wall mural at San Bartolo bears the date 3 Ik' or 3 Wind with the dripping cartouche painted blood-red (Fig. 1c). Considering that most day names are based on animals, this virtually constitutes an act of cosmic butchery. In fact, if one looks at the twenty day names in the contact period codices from highland Mexico, they can appear as freshly severed heads with blood scrolls emerging from the neck (Fig. 1e–g).

As in the ancient Babylonian myth of Marduk slaying the sea monster-goddess to make the earth

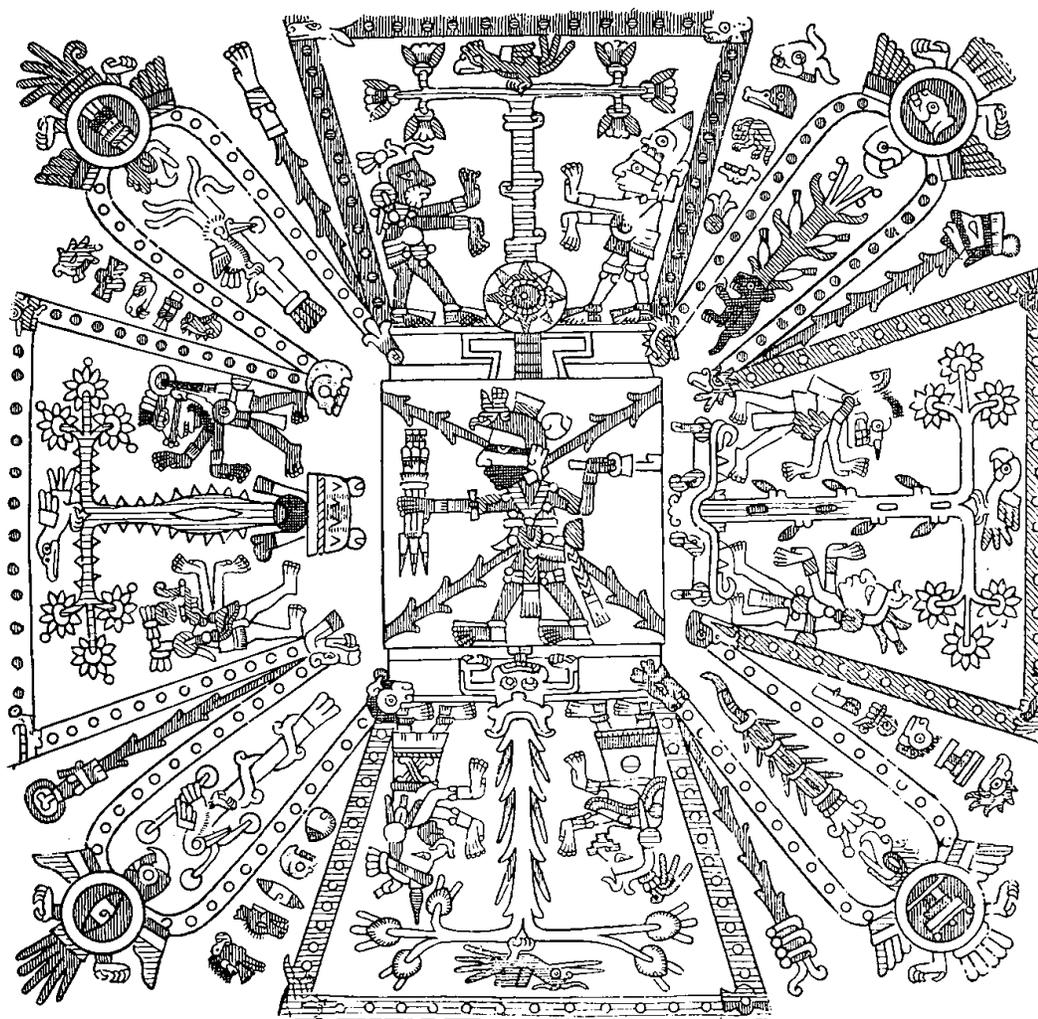


Figure 2. Sacrifice and the creation of the calendar with the dismembered body of the Central Mexican god Tezcatlipoca cast to the four directions, Fejervary-Mayer codex, page 1.

and sky, one of the basic acts of creation in ancient Mesoamerica is the killing of the primordial being of the earth and world chaos, thereby creating an ordered place and, by extension, the calendar as well. To peoples of ancient Mesoamerica, this great creature was a supernatural crocodile floating on the sea, and for the Aztec (or Mexica) of sixteenth-century highland Mexico, this primordial being was dismembered to create the earth and heavens. Thus it is no surprise that the first day name in the 260-day calendar corresponds to this creature, denoted as Cipactli for the Aztec and Imix for then-contemporaneous Yukatek Maya of the northern Maya lowlands. (In Maya studies the terms for the day names are presented in Yukatek.) There is increasing evidence that a version of this myth was also present among the Classic as well as Postclassic Maya (Stuart 2005; Houston et al. 2006: 89–97). In a Late Postclassic Maya mural from Coba, Quintana Roo, the series

of day names appears on the body of the mythic crocodile, recalling earlier Classic Maya conventions of placing name glyphs of defeated captives on their bodies (see Taube 1989, fig. 5). If this comparison holds true, the cosmic crocodile appears as a personified embodiment of the calendar.

Page 1 of the highland Mexican Fejervary-Mayer codex constitutes one of the most important depictions of calendrics and cosmology known for ancient Mesoamerica (Fig. 2). In the center of this cosmic plan and calendar stands Xiuhtecuhtli, the god of fire and time as a victorious warrior, with the dismembered body of Tezcatlipoca—the embodiment of physical earthly phenomena and chaos—literally cast to the four corners of the world, including his head, rib cage, arm, and diagnostic mirror foot. In addition, eight cosmic world trees appear at and between the cardinal points along with four sets of five day names to orient them to the four world

directions. As with the Maya, in Central Mexico each of the twenty day names denotes a cardinal point, with the first day name, Cipactli or Imix, beginning in the east, the second to the north, the third west, and fourth south in a continuous counterclockwise motion. Whereas in the Central Mexican Borgia Group of Late Postclassic codices these four groups of day names denoted the world directions, the ancient Maya also had specific glyphs for the cardinal points. Murals from the Early Classic Tomb 1 from Rio Azul, Guatemala, portrays the directional glyphs correctly oriented in the center of all four walls; additionally, the calendar round date of 8 Ben 16 K'ayab, referring to the death of the king, appears on the east wall (Ben being an eastern day name). Classic Maya inscriptions pertaining to the 819-day calendric cycle also demonstrate the same orientation of the twenty day names to world directions, and also the same directional colors known for the Yucatek Maya at contact period (with red for east, white for north, black for west, and yellow for south; Berlin and Kelley 1961).

Along with the 260-day cycle, the 365-day calendar is also first known for the Zapotec of Oaxaca, appearing first at Monte Alban circa 500 B.C.E. Much like our solar year, the 365-day calendar is based on named “months,” however in this case there are eighteen months of twenty days, with a final five-day period at the end ($18 \times 20 + 5 = 365$). For the ancient Zapotec, named years are marked by a specific sign denoting a headdress, which may signify that each year is related to the concept of a public office; this is still the case today in native communities where ceremonial offices or *cargos* are typically for one year. Since the 365-day calendar is a vague solar year, it pertains to down-to-earth topics (such as the growth and harvesting of crops, rain rituals, hunting and beekeeping) in contrast to the 260-day calendar, which was primarily used to determine auguries as well as one’s fate. In addition, early colonial Aztec tribute lists denote particular months during which taxes were collected and this may also have been the case for the ancient Maya as well.

In ancient Mesoamerica the 260-day and 365-day calendars form a larger permutable calendar system known as the calendar round. Any given day will have a number and day name in the 260-day system and an additional numbered position in the month series of the 365-calendar. This combination (such

as the calendar round date at Rio Azul, 8 Ben 16 K'ayab, mentioned above) will not complete again until fifty-two vague solar years have finished—the next day being 9 Ix 17 K'ayab. Remarkably, two 52-year cycles, or 104 vague solar years integrate perfectly with the 584-day Venus year—equivalent to the very day for sixty-five Venus years. This remarkable concordance is surely one of the reasons that leap days were not added to the 365-day solar year.

Three of the pre-Hispanic Maya screenfold books (the Dresden, Madrid, and Paris codices) contain almanacs pertaining to the fifty-two 365-day years and correspond closely to Diego de Landa’s sixteenth-century account describing the annual Yucatek new year ceremonies (Tozzer 1941: 135–49). Performed during the five final Wayeb days of the year, the Yucatek new year celebrations prominently featured world directional symbolism that included associated gods as well as colors; similarly, the three pre-Hispanic almanacs also divide the fifty-two years into four sections corresponding to the cardinal points. Just as each of the twenty day names corresponded to a world direction and color in a counterclockwise procession, so too did the succession of years. For the contact period Maya of Yucatan, years were named by the 260-day date that happened to occur on the first day of the year, 1 Pop, roughly equivalent to our January first. Since there are twenty day names, the day 360 of the year will have the same day name as the first of the year. However, due to the following five Wayeb days, the day name must move five positions forward for the next new year, which then corresponds to the next cardinal direction with its own associated meanings and auguries. When a series of four years has passed, the fifth year will return to the same day again ($4 \times 5 = 20$). Because the day names are all five positions apart, there can only be four day names to name the years, and to the Yucatek Maya they were termed *ah kuch ha'ab*, meaning “yearbearer” (*kuch* being the Mayan term for burden, or *cargo* in Spanish).

In the Codex Dresden new year pages, four gods present offerings before the four world trees, each denoted by a world directional glyph and associated color. Each tree receives a distinct offering: the first is incense, the second a turkey, the third a fish, and the fourth a deer haunch. Excavated in 2004 by William Saturno, the West Wall mural from Pinturas Sub-1A chamber at San Bartolo, Guatemala,



Figure 3. One of a series of four youths letting blood before directional world trees, detail of West Wall mural, Pinturas Sub 1-A, San Bartolo, Guatemala. Photograph by Karl Taube, 2004.

depicts a remarkable series of world trees dating to the first century B.C.E. (Fig. 3; Taube et al. 2010). Four youths let blood through their phalli before the trees, which again relates creation to blood sacrifice. Although they are not in the same order, virtually these same offerings found in the Codex Dresden also appear at the base of the San Bartolo (a fish, a deer, a turkey, and aromatic flowers rather than incense; Taube et al. 2010). The verb beginning the

texts pertaining to the Dresden directional trees can be read as *tz'apaj*, or “is erected,” and suggests the original act of raising the world trees. In addition, many have interpreted the introductory page preceding the Dresden new year pages as a mythic portrayal of the flood, with two deities below a crocodilian creature spouting water from its mouth and body (Fig. 4a). A roughly contemporaneous

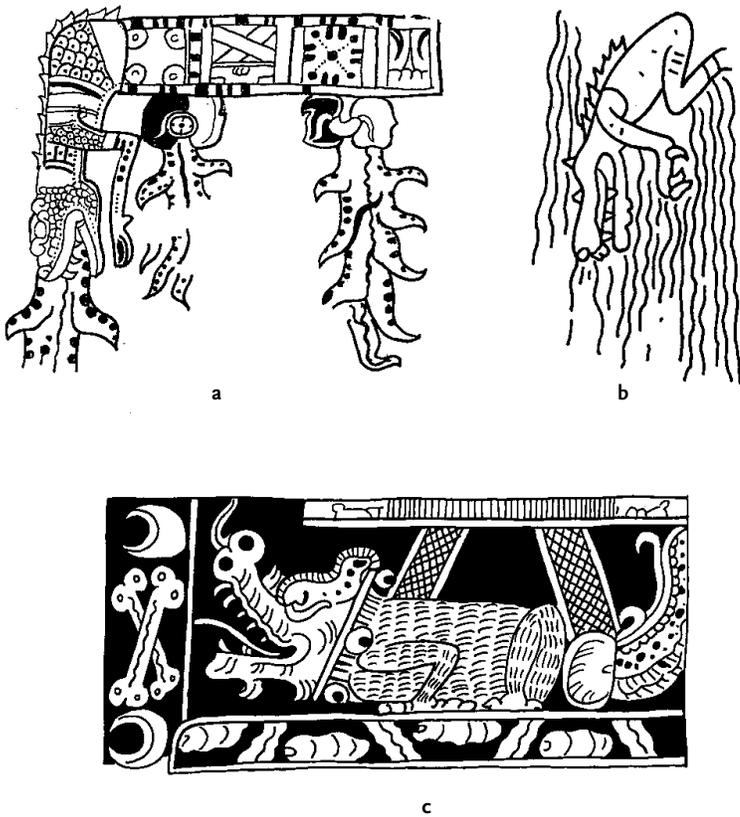


Figure 4. Flood crocodiles in ancient Maya art. a) Late Postclassic celestial crocodile with sky band body with cascades of water, Codex Dresden page 74. b) Crocodile in torrent of water, detail of Late Postclassic mural from Tulum, Quintana Roo. c) Celestial crocodile with death signs atop water band, detail of the Vase of the Seven Gods, Late Classic Maya. Drawings by Karl Taube.

mural from Tulum also shows a crocodile spewing water, and, as will be subsequently noted, a Yukatek Maya myth of creation mentions a world flood with the killing of the earth crocodile and the setting up of the world trees (Fig. 4b); it is likely that these five pages of the Codex Dresden pertain to this same cosmogonic episode (see Taube 1993: 69–73).

For the Dresden and Paris codices, the four yearbearer day names were Ben (east), Etz'nab (north), Ak'bal (west), and Lamat (south), equivalent to the yearbearer sequence known for the Aztec, Mixtec, and other contact period peoples of highland Mexico. However, David Stuart has convincingly shown that for the Classic Maya, new year was not celebrated on 1 Pop but instead on 0 Pop, one day earlier, thus providing the yearbearer series of Eb, Kaban, Ik',

and Manik—the same series that is currently used by contemporary Maya peoples of highland Guatemala and the ancient Zapotec as well (Stuart 2004). In Classic Maya epigraphic studies, the initial 0 position of the month, including the first month of Pop, is typically referred to as its “seating” because the glyph is a human rear and thigh in profile. It is noteworthy that this same sign is used to designate the accession of Maya kings, similar to the “enthronement” of Classic Maya months and years into “office,” which recalls the headbands of Zapotec yearbearers. Stuart notes that the Early Classic Tomb 2 at Rio Azul features murals of zoomorphic mountains with the yearbearer dates 4 Kaban and 4 Ik' on the east and north walls respectively—the correct directional orientation of these day names (Stuart 2004). Since both have the same number, it is likely that corresponding west and south directions would be 4 Manik and 4 Eb, thereby quartering the fifty-two-year cycle into four thirteen-year periods oriented to the world directions. Just as cosmic trees can be identified with world directions, the same is true for sacred mountains. Dating roughly to the first century B.C.E., a mural fragment from the Ixim temple at San Bartolo bears a text with the numeral 4 rendered by four dots, the glyph for a year, or *ha'ab*, and finally the sign for mountain. As Stephen Houston pointed out to me, this might refer to four directional yearbearer mountains, a tradition present today in highland Guatemala. Among the contemporary K'iche' of Momostenango, the four yearbearers are the Mam (meaning “grandfather”), each embodying a specific mountain (Tedlock 1982: 99–100, 147–48). The Mam Maya of Todos Santos also relate the directional yearbearers with specific mountains, and refer to them as “the lords of the mountain” (Oakes 1951: 71).

For the Aztec and other peoples of ancient highland Mexico, the fifty-two-year cycle served as the basic chronology for historical events, with Hernan Cortés arriving in the year of Ce Acatl, or 1 Reed, corresponding to 1519 C.E. For the Aztec, the completion of the fifty-two-year cycle was a major world-renewal event of cosmic proportions. Last performed in 1507 (the year 2 Reed), the rites involved the cleansing of the entire city of Tenochtitlan, including casting away the three hearthstones of the household, and extinguishing all fire (Sahagún 1950–1982, bk. VII: 25–32). During this major

ceremony, new fire was drilled at night on the abdomen of a victim atop a hill south of Tenochtitlan; the flames were then brought back to rekindle the fires and hearths of the city. However, if new fire were not drawn, the fearsome *tzitzimime* star demons of darkness would descend to destroy the world. Clearly, for the Aztec the ending of this major calendric cycle had cataclysmic implications.

From the Late Postclassic and early colonial codices, much of what we understand of Aztec and Mixtec histories is based on annals that chronicle a series of consecutive years extending at times into the mid-sixteenth century. However, when there is only a single year rather than a sequence, which is the usual situation with pre-Hispanic Aztec monuments, one is presented with the vexing problem of which fifty-two-year cycle. A similar situation might confound a future scholar if he or she had to ponder only seventy-six, rather than 1776. The fifty-two-year cycle is even more problematic, however, as it repeats roughly every half-century. For the Aztec, this is actually not much of a problem, thanks to the historic annals and our current understanding of the stylistic development of Aztec monumental sculpture; but for earlier Classic sites, such as Xochicalco or Monte Alban, correlating any historical event to the Gregorian calendar remains impossible.

In contrast to highland Mexico, a markedly different and independent calendric system developed in southeastern Mesoamerica in southern Veracruz and the Maya region. This is the Long Count, which is a constant count of days beginning from a mythical event that occurred on August 11, 3114 B.C.E. An entirely distinct system, the Classic Maya Long Count texts incorporate the 260-day and 365-day calendars, lunar cycles, and other calendric information. The Long Count is based on five units of time, the first being the K'in, or "sun," which corresponds to days. Twenty K'ins constitute a Winal, the next unit of time. Since the lowest cyclical calendric unit above a single day is the Winal of twenty days—the same number as the day names in the 260-day calendar—the Winal and higher periods always begin on Imix and end on Ajaw, the first and last of the twenty day names of the 260-day calendar. The next highest time unit is the Tun, composed of eighteen rather than twenty Winals. The reason for this is fairly clear; because eighteen twenty-day periods equals 360 days or close to a vague solar

year, the Long Count relates to human years and history. Twenty Tuns create the K'atun of roughly twenty years with highest unit being the Bak'tun of four hundred 360-day Tuns. In Maya studies, Long Count dates are typically presented with the Bak'tun first and the K'in position at the end, followed by the Calendar Round (e.g., 9.15.0.0.0 4 Ajaw 13 Yax, which corresponds to 20 August in the Gregorian year of 731 C.E.). Although rare, much higher units of the Long Count appear in Classic Maya texts, with perhaps the most impressive being Coba Stela 1, which has twenty units *above* the Bak'tun (Stuart 2011: 233–39). It is also noteworthy that, unlike our Gregorian years, Long Count dates are specific to the very day. In contrast, it is no easy feat for us to know how many days into the year 2012 my birthday on September 14 is. Just try it in your head!

It is likely that the Long Count first developed in the southern Gulf Coast region—the former “heartland” of the Olmec—for there are a number of especially early dates documented in this region. One of the earliest Long Count dates known occurs on Stela C of Tres Zapotes, corresponding to 31 B.C.E. Although the face on the front of the monument has Olmec features, it was carved almost five hundred years after their demise. In the nearby Maya region, the Long Count was probably adopted soon after in the piedmont region of southern Guatemala at Takalik Abaj and other sites. For the central Maya lowlands of the Peten—often regarded as the center of Classic Maya civilization—the first Long Count date is substantially later and appears on Tikal Stela 29, with a date of 292 C.E. As noted by Michael Coe some years ago but still true today, the earliest Long Count dates do not refer to period endings, that is, the completion of the larger Long Count positions such as the ending of the 15th K'atun in Bak'tun 9 (9.15.0.0.0 Ajaw 13 Yax), which suggests that these dates concern historical events rather than calendric celebrations (Coe 1957). However, this changes radically by the end of the Early Classic, when most stelae texts begin with Long Count period ending dates. Nonetheless, the epigraphic content following the presentation of cosmic time largely concerns major historical events concerning the ruler who commissioned the monument before the stated Long Count date, with the dominant image on the stela being the same ruler. As David Stuart notes, in later Classic Maya stelae texts, there is a strong but

also subtle overlap with the historic rulers and the Long Count, including that the twentieth day name appearing with period endings is Ajaw (meaning “king” in Mayan languages; Stuart 1996). In many cases, including Tonina, Tikal, and Copan, rulers appear as “kings of stone”—to coin a phrase by Stuart—performing offerings in front of round altars, as if frozen in time commemorating the completion of a period ending. According to Stuart, “rulers were themselves embodiments of time and passage—a role that was fundamental to the cosmological underpinnings of divine kingship.” Indeed, one of the common titles of Maya kings was “K’atun Ajaw,” which meant how many K’atun ending celebrations a ruler participated in. Remarkably, the twelfth ruler of the Copan dynasty is named as the 5 K’atun Ajaw on the king list appearing on Copan Altar Q.

A number of Classic Maya texts and scenes describe at least some of the mythic events pertaining to the beginning of the present Bak’tun cycle on 13.0.0.0 4 Ajaw 8 Kumk’u, which corresponds to August 11, 3114 B.C.E. The Late Classic Vase of the Seven Gods illustrates this episode with the god of merchants, God L, seated in a structure facing six other deities. The roof of this building is in the form of a crocodile atop a water band, recalling the flood page appearing in the Codex Dresden. In Classic Maya texts, a principal theme of the 4 Ajaw 8 Kumk’u episode is the three-stone hearth place, the burning center of the four-sided cosmic house (Freidel et al. 1993; Taube 1998; Stuart 2011; Taube 1998; Van Stone 2010). Stela C at Quirigua provides the most detailed description of this event, but it is also mentioned at other sites, including Palenque, Dos Pilas, and Piedras Negras, indicating that it was widely observed throughout the Classic Maya lowlands. Of pivotal importance, the hearth sign appears as three piled up rocks, prefixed by the sign yax, meaning “first” or “green,” the color for the world center. During the Late Classic Maya period, kings at the site of Seibal had their own royal title or “emblem glyph,” which was the “king of the three stone hearths.” Perhaps the most striking temple at this site is Structure A-3, a Late Classic radial pyramid with four stairways, each with a stela and an altar at its base (Smith 1982: 12–19; Schele and Mathews 1998: 179–82). In addition, a

fifth stela occupies the center of the temple superstructure, creating a monumental cosmic plan of the four directions and world center. Cached under this central stela were three jade boulders, clearly relating to the three hearthstones denoting the royal title of Seibal (Smith 1982, figs. 18a, 187; Schele and Mathews 1998: 182; Taube 1998: 441).

To summarize, the creation event that occurred on 13.0.0.0 4 Ajaw 8 Kumk’u concerned the creation of a three-stone hearth, probably as the world center. One could infer that this relates to the widespread Mesoamerican metaphor of the cosmos as a four-sided house. In addition, as a hearth the three stones could also relate to the creation of light at the first dawning.

THE 2012 PHENOMENON

What do we know about what the Classic Maya had to say concerning what will occur at the end of 2012? Actually, there is very little indeed. One of the first to publish and popularize the potential significance of 2012 in relation to the Bak’tun cycle event was the art historian José Argüelles in his book, *The Mayan Factor* (1987). Argüelles also called attention to what he described as the “Harmonic Convergence” event during August of 1987, when there was to be a major alignment of planets with the sun. In a study published last year, John Hoopes noted that there were “already a thousand books in print that address the 2012 phenomenon,” and surely the number has increased since then (Hoopes 2011). Until recently, there was only one known Classic Maya monument that alluded to the completion of this Bak’tun cycle in 2012 on the Calendar Round date of 4 Ajaw 3 K’ank’in (Tortuguero Monument 6). Although some have argued that this is prophecy, others have noted that it is simply anchoring historical events of the Classic period into cosmic time (see Van Stone 2010: 28–29, 58–61; Stuart 2011: 311–15).

In his recent volume devoted to Maya calendrics and 2012, David Stuart, provides a strong and reasoned critique of purported prophecies concerning the end of the Bak’tun cycle, including the epigraphic content of Tortuguero Monument 6 (Stuart 2011). Remarkably, earlier this year (2012) Stuart saw the discovery of a second monument concerning 2012 at La Corona, Guatemala, a site that he has been studying since 1997 (Fig. 5). In excavations directed by Marcello Canuto and Tomás



Figure 5. The 2012 discovery of Block V from Hieroglyphic Stairway 2, La Corona, Guatemala. Seated from front to back: Marcello Canuto, David Stuart, Martin Asturias, and Jocelyn Ponce. Photo courtesy of David Stuart.

Barriento Quezada, a stairway block was discovered which also bore the 13.0.0.0.0 4 Ajaw 4 K'ank'in date at the end (Stuart 2012). That Stuart, who just published on 2012 the year before, and who then could study the second monument concerning 2012 found this very same year (2012) at the moment of discovery is in my mind a true example of a “harmonic convergence.” Stuart notes that, as in the case of the Tortuguero monument, Block V of La Corona Hieroglyphic Stairway 2 has no specific reference to any future mythical event but simply ties Late Classic political events into a greater cycle of time.

One of the most striking traits of the Maya Collapse at the end of the Classic period was the almost immediate cessation of Long Count dates on monuments, and it is especially noteworthy that the collapse occurred close to the end of Bak'tun 9, with very few Long Count monuments bearing the date of the tenth Bak'tun. Classic Maya rulers were truly kings of time and stone and in the central and northern Maya lowlands where this system continued, historical events and even the names of kings were

virtually unmentioned in monumental texts during the Postclassic period. In addition, the Bak'tun position of roughly four hundred years was very rarely employed and instead there was a truncated version we refer to as the “Short Count” that continued in Yucatan well into the colonial period. In this case, it is the roughly twenty-year K'atun rather than the Bak'tun that is used for history as well as prophesy, with the final day of the period, inevitably Ajaw, used to name a specific K'atun. Since there are only thirteen numerals in the 260-day calendar, the Short Count is named by a series of thirteen K'atuns, producing a cycle of roughly 256 years, beginning with Katun 11 Ajaw and ending with Katun 13 Ajaw. Of course the next day following 13 Ajaw is 1 Imix, the beginning of the 260-day calendar. The Late Postclassic Codex Paris features a series of K'atun pages, each portraying the “accession” of the Lord of the K'atun. Tellingly, all these K'atun Lords are

gods rather than actual kings, despite the fact that the earlier examples of these scenes of accession atop platforms can be readily dated to Classic period stelae at Piedras Negras and the still earlier murals at San Bartolo (Taube et al. 2010).

The most important corpus of colonial Yukatek information concerning the auguries of the K'atun cycle appears in the Books of the Chilam Balam, a Maya prophet credited for auguring the coming of the Spanish in K'atun 13 Ajaw. Each is named for the town in which they were composed, including those of Chumayel, Mani, and Tizimin, major towns in the state of Yucatan today. All three mention the mythic episode of the flood in relation to the world crocodile in K'atun 13 Ajaw and the setting up of the world trees in the following period of K'atun 11 Ajaw (Taube 1993). Clearly enough, in the case of the K'atun Cycle, prophesies of cosmic destruction and renewal are very much present. In fact, if we read what occurs during the final K'atun 13 Ajaw, it is not very good news at all, as can be seen in the following account in the *Book of the Chilam Balam of Chumayel*: "It is Katun 13 Ahau according to the count . . . There is the universal judgment of our Lord God. Blood shall descend from the tree and stone. Heaven and earth shall burn" (Roys 1933: 162). As in the case of the new year pages in the Dresden Codex, as well as the Aztec New Fire ceremonies, the colonial Yukatek may well have thought of the ending of great cycles as a potential time of world destruction and renewal.

By the mid-eighteenth century the Short Count was no longer widely observed in Yucatan, and any native Maya reference to it and the Long Count is today a readopted tradition. However, this is by no means the case with the 260-day and 365-day calendars, which are still widely observed in highland Guatemala among the K'iche', Ixil, and other Mayan-speaking peoples. Thanks to the Peace Accord of 1996, Guatemalan Maya are currently allowed to publically engage in calendric ceremonies, including both local sacred places as well as at Classic Maya sites such as Tikal. While preparing this essay, my wife Rhonda Taube was engaged in ethnographic research in the K'iche' region, and on July 22, 2012, she witnessed a ceremony performed by the daykeeper Carlos Quiej on the K'iche' date of Wajxaqib Q'anil, (meaning 8 Seed) at a sacred rock on the outskirts of Quetzaltenango (Fig. 6). The rock



Figure 6. Daykeeper Carlos Quiej performing a ceremony on the outskirts of Quetzaltenango, Guatemala, 22 July 2012. Photo by Rhonda Taube.

is framed by four low circular altars oriented to the four directions, recalling the four altars and stelae at the four sides of Structure A-3 at Seibal. One of the most important and sacred shrines among the K'iche' is Pa' Sabal (meaning "little offering place") in the town of Momostenango. During the day Wajxaqib Batz', or 8 Monkey, new daykeepers are initiated into their public office. Among the most sacred items kept by daykeepers are their small divinatory pouches that contain, among other things, quartz crystals and the brilliant red seeds of the *Erythrina* tree. When a daykeeper dies, the bundle is taken back to Pa' Sabal; there it gradually decomposes, releasing the seeds to create new *Erythrina* with seeds that will be collected by living diviners. Thus the sacred calendar continues and will continue for generations to come. ✱

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Coffin Reuse in the Twenty-First Dynasty

The Demands of Ritual Transformation

KATHLYN M. COONEY¹

THEBAN TOMB 1 [TT1] is the only known example of an intact tomb from the Ramesside Period (1295–1069 B.C.E.). Located in the necropolis of the craftsmen’s village of Deir el Medina, it included the nesting coffins of the patriarch Sennedjem, his son Khonsu, and their female family members (Bruyère 1959; Sanjaume 2006; Shedid and Shedit 1994; Toda and Daressy 1920). The objects inform on funerary behaviors, ritual, and social status, particularly within the reign of King Ramses II (1279–1213 B.C.E.). Because this tomb somehow escaped the ravages of tomb robbers and treasure hunters, when it was found by Egyptologists it was considered “intact,” that is, it was thought to represent the end result of burial activity during the Nineteenth Dynasty (1295–1186 B.C.E.), which was the date of the coffins found inside.

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² However, Näser suggests that while Theban Tomb 1 was used over a few generations, only the outer sarcophagi of Khonsu and Sennedjem might have been reused in other burials. The sarcophagi were not redecorated or re-inscribed, but were both found dismantled in a corner of the tomb. Näser argues that the un-coffined bodies in Theban Tomb 1 belonged to poorer family members who benefited from burial with richer family members (Näser 2008).

TT1 contained twenty bodies, but only nine of them were enclosed in coffins. Many Egyptologists, including myself, have assumed that the individuals buried without coffins in TT1 simply could not afford them in life and were thus placed in this tomb to share in the prosperity and materiality of their wealthier family members and connections (Cooney 2007: 278). However, I now think that enough circumstantial evidence exists to suggest that the “intact” tomb of Sennedjem was not an untouched picture of Nineteenth-Dynasty depositions at all, but rather a Twentieth-Dynasty end result (1186–1069 B.C.E.), one that followed the clearance and reuse of many of the grave goods inside by family members over generations at the end of the New Kingdom (1550–1069 B.C.E.) and perhaps into the Third Intermediate Period (1069–664 B.C.E.). For instance, Andreas Dorn has found a text that indicates that Theban Tomb 1 was open during the late New Kingdom and that it was used to store the pyramidia of Sennedjem and Khonsu (Dorn 2011). In other words, I suggest that many of the bodies found without coffins in TT1 may *originally* have been buried in such containers but that they have since been removed from them by family members who reused or “re-commodified” them.²



Inscription of Ikhy.
Photo: Remy Hiramoto.
See figure 1a.

This hypothesis is quite conjectural, of course—not only because it is based on the *absence* of objects from a tomb space, but particularly because TT1's discovery in 1886 and subsequent clearance was far from “scientific,” limiting how we might be able to test it (Reeves 2000: 69–71). Many of the coffins originally found in this tomb are lost.³ To make matters worse, most of the bodies are no longer stored with the TT1 coffins that once contained them (Reeves 2000: 70).⁴ In fact, most of the mummies once in TT1 are lost, limiting how much we can say about any coffins that may have once belonged to them.

3 The coffins belonged to Sennedjem and his wife Iy-neferty as well as additional family members, including Khonsu, Ta-maket, Prehotep, Ta-ashsen, Ramose, Isis, and Hathor. The Egyptian Museum, Cairo is home to the sarcophagi and coffins of Sennedjem, the sarcophagus of Khonsu, and the coffin of Isis. The Metropolitan Museum of Art owns the coffins of Khonsu and Iy-neferty. The coffin of Ta-maket, once in Berlin, was destroyed in an Allied bombing raid during World War II. The coffins of Prehotep, Ta-ashsen, Ramose and Hathor have been lost, either to private collections, storage in Egypt, or some other more unfavorable location, and we can only hope that they will resurface someday.

4 For example, in the Egyptian Museum, Cairo, the mummy of Sennedjem seems to be in the coffin of Iset because the body is male, while the mummy of Iset is in Sennedjem's coffin (personal communication, Salima Ikram 2000). As for the coffins in the Metropolitan Museum of Art, those bodies were shipped off to the Peabody Museum at Harvard, where they are in very poor condition. If the mummy of Ta-maket was in her coffin, it no longer exists, for both mummy and coffin were destroyed in the Allied bombing raid (personal communication, Hannelore Kischkewitz 2000). As for the eleven bodies not found in coffins, strangely, only the heads reached their final destination from the archaeologist's steamer ship.

So why do I still think that most of the mummies found in TT1 were originally contained in coffins? Economic and political circumstances disintegrated after the reign of Ramses III (1184–1153 B.C.E.), pushing many Thebans to reuse what they had formerly imported or built from scratch. In some of my forthcoming research about tomb robbery and funerary arts reuse at the end of the Twentieth Dynasty, which cannot be discussed at length here, I build a circumstantial case—based on disputed texts about tombs and tomb goods, tomb inventories, and some Late Ramesside letters—that Deir el Medina families engaged in the regular reuse of funerary objects (Cooney 2011, 2012 forthcoming). The evidence suggests that West Theban families re-commodified many of the older funerary objects in their own family tombs.

Outright tomb robbery was a real threat, but I doubt this is how most funerary objects were re-commodified. I suggest that the greater danger to the dead in a time of economic recession was the legal re-appropriation and reuse of funerary objects in family burial chambers by the family members themselves, or the reuse of objects in older, unclaimed tombs by the administrative elite. Indeed, most such coffin and tomb reuse would have gone completely undocumented, unless there was a dispute or problem among those engaging in such activities that demanded a record.

In the village of Deir el Medina, people wrote something down in three basic instances: if they needed to communicate with someone far away; if they needed to make a claim on something contested and needed to initiate a legal suit; or if a matter was important enough for many in the village to witness. There would have been little incentive for a family to put in writing what it was doing in its own tomb, nor for the bureaucracy of the Amen priesthood to document how they appropriated wealth from older burials—again—unless they needed to tell someone far away or if they needed to document a contested situation in an official manner. In fact, social taboos would have encouraged people *not* to write any of their reuse activity down. Therefore, in the textual record, tomb robbery and funerary arts reuse was discussed either in a punitive context (as in the *Tomb Robbery Papyri*) when people were being interrogated and tried, or it was purposefully veiled (like in the Late Ramesside letters or the Deir el Medina inventory texts). To put the argument more bluntly: Why would anyone have written down that they took a family ancestor out of her coffin, moved her mummy to a corner of the tomb, took the coffin out of the tomb, redecorated it with appropriate and fashionable decoration, and used it for another relative? This was unseemly behavior, best kept disguised.

For most of its history, Egyptology has looked upon tomb robbery and funerary arts reuse as aberrant, regressive, and abnormal. Documents like the *Tomb Robbery Papyri* have reinforced that mindset (Peet 1930). In their literature, the Egyptians themselves repeatedly describe the ideal (meaning “normal”) burial situation as a stone house in which the ancestors reside for eternity, supported by income-producing lands set aside in an endowment to pay for priests and provisions in perpetuity.⁵ However, in the last two decades, many Egyptologists have looked to the entire “life cycle” of a tomb, pointing out that tomb robbery and reuse were not only a part of necropolis life, but that tomb robbery had been practiced since the beginnings of ancient Egyptian complex society, a reality of which the Egyptians themselves were well aware (Baines and Lacovara 2002; Näser 2002, 2008).

5 For example, see the instruction of Any: “Furnish your station in the valley, the grave that shall conceal your corpse; set it before you as your concern, a thing that matters in your eyes. Emulate the great departed, who are at rest within their tombs.” Translation from Lichtheim (1976).

Only about seventy Ramesside coffins survive (Cooney 2007). In comparison, over 800 Twenty-First-Dynasty (1069–945 B.C.E.) coffins survive—more than ten times the amount, and from a time of economic crisis (Niwinski 1988). It was Andrej Niwinski who first suggested that many Ramesside coffins were reused in the early Third Intermediate Period to create the mass of Twenty-First-Dynasty funerary objects, but he never followed up with a systematic study (Niwinski 1988: 13).

My current research on Twenty-First-Dynasty coffins attempts just that. I am investigating coffins in large collections to understand how many of them show signs of reuse. I also hope my research will normalize the interpretation of the re-commodification of funerary arts—at least during a time of crisis—as a creative negotiation that prioritized the coffin’s value of ritual over the value of perpetual use. In other words, people were reusing coffins because they wanted to *continue* materially driven funerary rituals, rather than discontinue them. If taking an ancestor’s coffin was the only way to participate in funerary materiality, then this is a testament to the perceived value of the coffin within short-term ritual display.

These body containers find their origins within arenas of intense elite social competition and religious-ritual display (Graeber 2001), but Twenty-First-Dynasty coffins also come from a time of profound social crisis when raw materials to build them were in short supply (O’Connor 1983). Twenty-First-Dynasty coffins create an ideal dataset to understand funerary reuse on its own functional terms and in the light of elite demands for public rituals of social competition using religiously charged funerary materiality. Niwinski noted that some of these coffins show obvious signs of reuse, particularly visible when a new owner’s name was inscribed over the old, but no one has systematically looked for different methods and gradients of reuse (Niwinski 1988). My research questions are: What were the different methods of reusing another person’s coffin? Who was reusing it? And perhaps most significant but difficult to answer: How did funerary arts reuse and theft impact the way ancient Egyptians approached funerary materiality and ritual action during times of social crisis?

THE EVIDENCE

Currently I am working my way through many of the eight hundred or so Twenty-First-Dynasty coffins spread about the globe. About three hundred are in Egypt and the rest are now found in European and North American museums. Thus far, I have found some startling examples of reuse.

In July of 2009, I studied some of the coffins in Copenhagen's Ny Carlsberg Glyptotek and in Nationalmuseet. I also visited Medelhavsmuseet in Stockholm. In June of 2011, I had access to forty-nine coffins in Italian collections, in storage and in vitrines (Museo Egizio in Turin, Museo Archeologico in Florence, the Museo dell'Accademia Etrusca e della Città in Cortona, and the Gregorian Egyptian Museum in the Vatican).⁶ In June of 2012, I visited the collections of the Louvre in Paris, the Kunsthistorisches Museum in Vienna, and the Rijksmuseum van Oudheden in Leiden, adding another fifty-one coffins to the study; I am now processing that material.

THE METHOD

Finding evidence for coffin reuse demands up-close and in-person examination of all available surfaces. Although this is usually not possible with coffins in vitrines, looking at both the inside and outside of a coffin housed in museum storage was frequently possible. This study cannot and does not treat every coffin the same. Circumstances of museum display, access, and past interventions (like restoration or repainting) always temper how far anyone's analysis can go.

When I examine a Twenty-First-Dynasty coffin for reuse, there are a number of things I look for, including:

- Older plaster and paint decoration underneath the current surface.
- Older style modeling visible under a broken plastered surface.

- Gender reassignment (beard hole covered, breasts added, fisted hands changed for flat hands, earrings added, etc.)
- Two or more personal names on a given coffin.
- Evidence of erased names.
- Different artisans' hands in text inscriptions, particularly around the name.
- Ramesside coffin markers, including Nineteenth- and Twentieth-Dynasty style decoration, arm modeling, black pitch interiors and undersides, lotus flowers on the head, etc.

The evidence for reuse is not black and white—partly because the ancient Egyptians themselves practiced it within a gradient. The reuse of funerary arts represented a spectrum of possible appropriative actions. Some coffin reusers inscribed a new name. Others put in a new name and redecorated parts of the coffin lid. Others went further and redecorated all surfaces over the old plaster and paint. Some went the extra step to scrub away old plaster and paint before starting new decoration, but they retained the old modeling in the wood. Some, I suspect, scrubbed the coffin down, dismantled it, and started a new coffin from scratch, using only the wood and thus giving no visible trace of an older coffin except by means of further scientific examination.

The more thoroughly a coffin was modified to fit with then-current styles, the harder it is to find evidence for that reuse. Another way of putting it is that the more comprehensive the reuse, the harder it is to see it. It is when the artisan attempted a shortcut—like leaving the old decoration underneath the new plaster or when only the name was changed but the old decoration was left intact—that there is clear evidence of reuse.

REUSE OF TWENTY-FIRST-DYNASTY COFFINS IN ITALIAN COLLECTIONS

In Italy I examined eighteen coffins in Turin, seventeen in Florence, and fourteen in Rome, and my analysis showed a reuse rate of 61.5 percent (Table 1). In other words, over 60 percent of the coffins

⁶ Thanks to Alessia Amenta at the Vatican, Eleni Vasilika in Turin, Maria-Christina Guidotti in Florence, Fredrik Helander in Stockholm, Anne Haslund-Hansen at Copenhagen's Nationalmuseum, and Mogens Jørgensen at Copenhagen's Ny Carlsberg Glyptotek. Thanks are due also to Yasmin el-Shazly in the Egyptian Museum, Cairo, who is helping us with preliminary research.

TABLE 1: Rate of Reuse for 21st Dynasty Coffins in Italian Collections
Turin = 18 coffin pieces
6 objects with no evidence of reuse
4 objects with circumstantial evidence of reuse
5 objects with good evidence of reuse
3 objects with strong evidence of reuse
Florence = 17 coffin pieces
3 objects with no evidence of reuse
4 objects with circumstantial evidence of reuse
3 objects with good evidence of reuse
7 objects with strong evidence of reuse
Rome = 14 coffin pieces
9 objects with no evidence of reuse
1 objects with circumstantial evidence of reuse
1 objects with good evidence of reuse
3 objects with strong evidence of reuse
Rate of Reuse 61.5%

showed some evidence that they were produced for a previous owner and had been modified for the latest owner in some way.

What were the different methods used by the ancient Egyptians to reuse a coffin? To begin with, it is possible—although very difficult to prove—that some Twenty-First-Dynasty coffins contained dead people for whom the coffin was not originally commissioned and for whom no changes in decoration were made. This means that many coffins were perhaps appropriated through no physical action to the coffin itself—beyond taking the previous owner



Figure 1a. Inscription of Ikhy. Photo: Remy Hiramoto.

Figure 1b. Side sema inscription of m-dydyt. Photo: Remy Hiramoto.

out of it and placing a new one inside. This kind of reuse is difficult, if not impossible, to demonstrate. If a poorly mummified body is found inside a high-quality coffin, for example, it provides a circumstantial marker for reuse. For example, the body inside the coffin Hennatawy F in Deir el Bahari tomb MMA 59 was not mummified. It was, however, interred with gold jewelry (Aston 2009: 198–99). If a museum has disposed of the mummies once inside their coffins (which is normally the case outside of Egypt), then the evidence of possible reuse is irrevocably lost.

If a reuser was willing to put *minimum* time and effort into modifications on the coffin, then the old name would have been scrubbed away, and a new name inscribed, without changing any of the other surface decoration at all. When the reuser did this, he might have applied a single color of ink—black or red or blue—instead of matching the original polychrome inscriptions. Most often, such a modification in name only would be accompanied by the titles of the previous coffin owner, something that is often seen with the common feminine title *nbt pr Smayt n imn*, “Mistress of the House, Chantress of Amen.” For example, a coffin in the Vatican (inv. no. 25035.3.1; Figs. 1a, b) shows the name of Ikhy applied in blue ink in the text on the

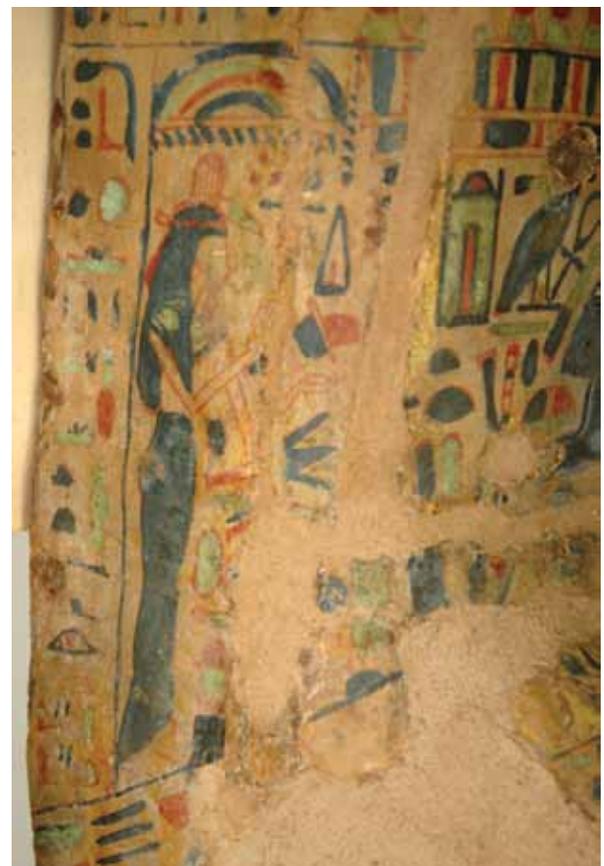




Figure 2a. Florence 2157. Photo: Remy Hiramoto.

top of the feet in a space where the name of the old occupant had previously been (Gasse 1996: 81–97). The titles of this previous owner were not touched, and one can only assume that leaving them served the purposes of the reusers. Ikhy's reusers did not touch other parts of the coffin. In fact, another name—M-dydyt—remains on the lower lid's seam

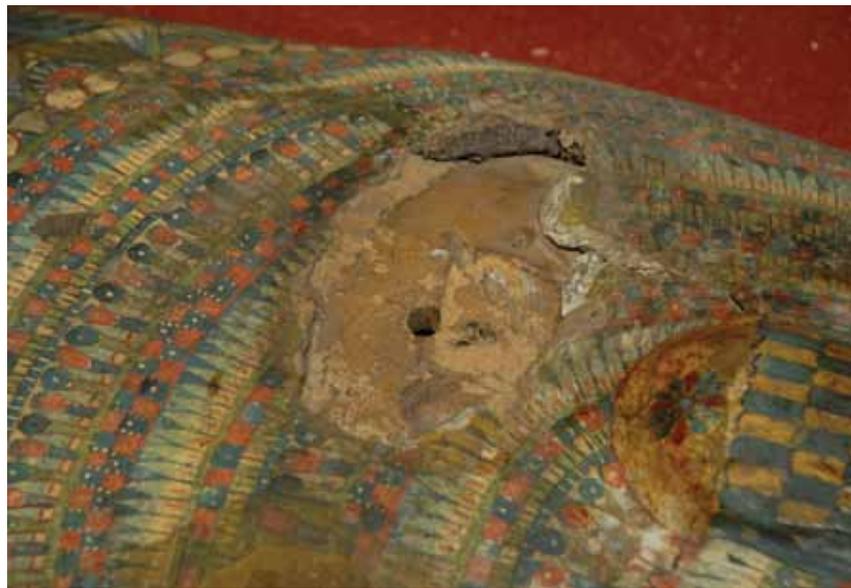


Figure 2b. Florence 2157. Photo: Remy Hiramoto.

inscription. Did the reusers not notice that this older name was still present on the coffin's surface when they re-inscribed it for Ikhy? Did they feel it would not be necessary to change it? Or was Ikhy related to M-dydyt, given that both of them had unusual Libyan names, thus linking both dead women in the afterlife by means of this coffin?

Modification of gender was another common action of reuse, and it required decorative changes on the upper body of the coffin lid. The shift from male to female is much more common than female to male. Having said that, the addition of earrings and breasts and the covering over of a beard hole is usually easier to spot than the removal of earrings and breasts, because the latter would have simply been knocked away and then covered with new plaster. Interestingly, a gender modification is not always accompanied by a complete name change, as there are many such reused coffins that retain a blank where the name should have been inscribed. For example, a coffin in Florence (Museo Archeologico 2157; Figs. 2a, b) has the clear addition of earrings and breasts in a second layer of plaster and the redecoration of the headdress in a checkerboard pattern (Niwinski 1988: 139). The reusers also changed the hands: one of the hands has broken off this coffin, revealing the outline of the previous fist of a masculine hand, before the flat, feminine hand was added to the piece. Although there is a blank for a new name, no such name was added.

Other coffins show a complete redecoration, covering over older plaster and paint with new. For example, a coffin in Florence (Museo Archeologico 8524; Fig. 3a) betrays its earlier origins with the remnants of a blue-and-white striped headdress about 1 cm underneath the current plaster layer at the back of the head on the coffin lid (Fig. 3b; Niwinski 1988: 139). There is no evidence of older paint anywhere else on this coffin, so it is likely the artisan scrubbed away the old decoration but did so roughly, leaving some remnants underneath the current headdress.

Other coffins were replastered and repainted, but old-fashioned surface modeling was retained. A coffin in Turin (Museo Egizio 2228; Fig. 4), for

instance, has been categorized as archaizing by Andrej Niwinski because it shows the hips and thighs of the female form modeled in the coffin wood (Niwinski 2004: 117–29). I suggest, however, that this is a reused Ramesside coffin. In the Nineteenth Dynasty, it was very popular for women’s coffin lids to show the undulations of the female body covered with the white pleated garment of purity (like the coffin of Iset from Theban Tomb 1; Fig. 5; Cooney 2007: 435–37; Figs. 459–62; Desroches-Noblecourt 1976: 170–71). The arms on such coffins are typically not crossed in the Osirian fashion, but were positioned holding one fist to the chest and the other flat on the thigh. To see a coffin with



Figure 3a. Florence 8524. Photo: Neil Crawford.

Figure 3b. Florence 8524, detail. Photo: Neil Crawford.

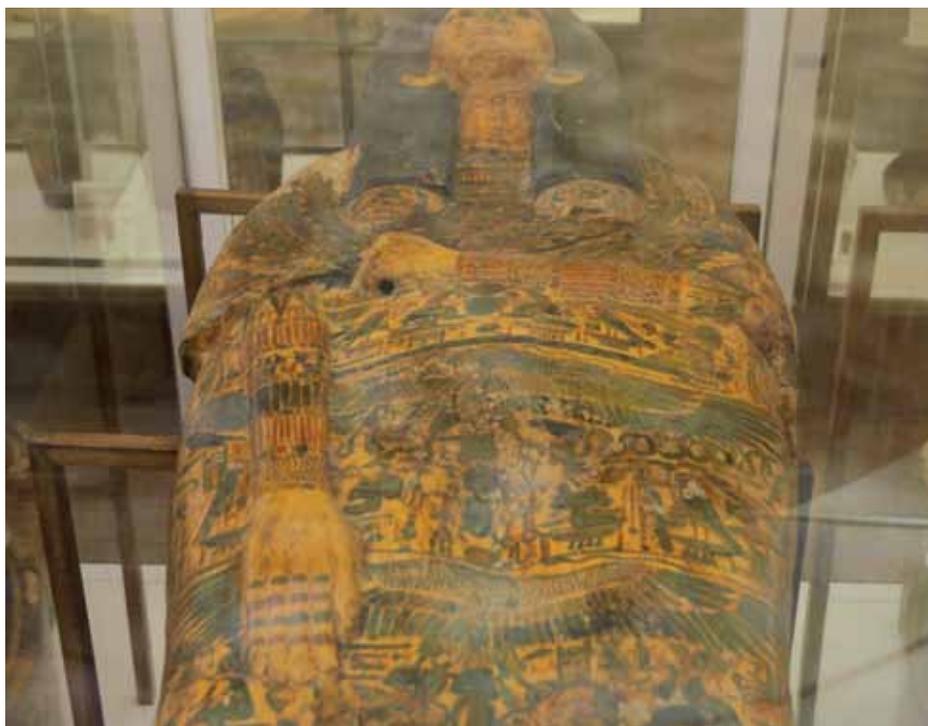


Figure 4. Turin 2228.
Photo: Remy Hiramoto.

feminine curves and arm positioning covered with Twenty-First-Dynasty solar/Osirian decoration is incongruous, and I believe that this coffin's strange styling is a remnant of reusing a Nineteenth-Dynasty coffin, rather than crafting a coffin in an archaizing fashion. Even the bare feet typically retained on such Nineteenth-Dynasty coffins were retained in this Twenty-First-Dynasty reuse, and the artisan modified them with the addition of sandal straps.

In other instances, a reuse involved the repainting of the lid only. A coffin in Florence (7450; Fig. 6), which has been erroneously dated to the Twenty-First Dynasty, shows clear Nineteenth-Dynasty features in the case, including the four sons of Horus, Anubis and Thoth in the traditional positions (Niwinski 1988: 139). The interior of the case is also painted with black pitch, rather than the polychrome decorations that were common during the Twenty-First Dynasty. Even though the reuser only repainted the lid, he still attempted to match the older paint and varnish of the case. He retained the old-fashioned relief work of the lotus flower on the forehead, which is clearly of Nineteenth-Dynasty style, indicating that he only partially reworked the lid, leaving the headdress and face as it was. One wonders if the audience at the funerary ceremony noticed the older decoration, and, if so, did it affect the social position of the coffin owner's family in any way.



Figure 5. Coffin of Iset.

Some coffins betray two reuses, meaning that at least three different mummies were placed within this one body container during its existence. The coffin from Florence mentioned above (8524; see Fig. 3b) has layers of the blue-and-white striped headdress underneath the current plaster surface. After this reuse, this same coffin seems to have been given a gender modification. Earrings and breasts



Figure 6. Florence 7450. Photo: Remy Hiramoto.

were added in plaster and paint that do not match the surface decoration; the hands were probably changed from fist to flat; the headdress may have been modified; and a beard was probably removed, necessitating the covering over of the beard hole. Other elements on the lid were changed, but the area for the name was left blank.

Interestingly, the inscription of the name was apparently not required for a successful reuse. Many coffins, including Florence 8524, show decorative changes, from male to female gender for example, but no inscription of a new name, or at least none that is visible. For Florence 8524, it seems that an old name was removed from the surface and new varnish was added, but no new name was ever placed in the gap. Indeed, it remains possible that a name was indeed written in black ink over the varnish and that it has since been worn away.

A blank space for the dead individual's name seems odd, given that the coffin is meant to link the deceased to Osiris by means of the name and the image of the deceased with crossed arms and *wesekh* collar. In fact, I suspect many such pieces may have functioned as what I call "parish coffins." I have argued elsewhere that the value of funerary materiality would have been so compelling that many ancient Egyptians, who could not afford to take that materiality out of economic exchange permanently and bury the burial equipment in a tomb, would have still

acquired it for short-term use, effectively renting a coffin. In *The Cost of Death*, I despaired of ever finding evidence for such a thing—because it seemed that multiple, short-term uses could not be archaeologically documented in any way. However, Florence 8524 was used for at least three different bodies, and the latest reuser did not fill in a name. I think I can make a circumstantial case for the parish-coffin practice based on such examples: a blank for the name covered with varnish would have provided the perfect short-term writing surface—for a village or even a family. The name of one individual could be added in black ink before funerary rituals and then quickly wiped away after the burial, ready for the next individual. This would suggest that many people were actually ritually transformed in a coffin that they did not personally own, one that they perhaps "rented" from a temple or priest. The fact that Florence 8524 was found in a burial space (probably Bab el Gassus) is interesting, because buying such a parish coffin, if indeed it is one, would have been like buying the floor model in an electronics store.

THE MEANING OF COFFIN REUSE

Examining how the ancient Egyptians reused coffins is one thing. But asking why they did it and how it actually worked in social and religious terms is another matter. Coffins are very special commodities. They depict the face and body of the deceased. They name the dead and link him or her to Osiris. The texts inscribed on the coffin's surface tell us that eternal protection was provided. Thus, when we are facing the reuse of funerary arts, it may represent a very troubling practice to us—morally and emotionally. We are left wondering if such activities were disconcerting for the ancient Egyptians as well. Examination of ancient funerary arts reuse therefore demands some theoretical examination in order to understand how and why human beings could be capable of taking from the dead to serve the living, how they could erase the names of ancestors so that the newly deceased's name could be put in its place, and how a coffin, which everyone could see was produced a generation before its time, could be displayed.

Funerary reuse essentially involves the re-appropriation of ideologically charged objects, and in the case of Twentieth- and Twenty-First-Dynasty coffins, this reuse occurred in the context of economic

and social crisis. It is always best to get an explanation from the source community itself, but the Egyptians did not directly communicate how they justified or negotiated monument reuse and appropriation. They only openly discuss the practice of reuse in very negative terms—like the *Tomb Robbery Papyri* that document the torture and interrogation of men accused of stealing coffins or reusing temple wood to make coffins, or as we see in tomb curses, which condemn to a horrible death anyone who harms a monument (Baines and Lacovara 2002).

A coffin was essentially meant to make a functional link between the thing and the person—to transform the dead into an eternal Osirian and solar version of him or herself. The coffin was believed to ritually activate the dead. Thus, the wood, paint, and plaster were meant to provide an inviolable, idealized, permanent depiction of the person inside. The Egyptian coffin is a particularly “fetishized” commodity, from the Marxist perspective (Graeber 2001: 65). This “fetishization” is why coffin reuse is so disturbing to us in the modern world. These objects have faces and hands and feet, and thus they seem to be human. The ritual spells inscribed on the surface imply that the human stakes were very high: nothing less than providing an eternal after-life for the dead. Thus, removing a body from the inside and redecorating the coffin for another seems profoundly wrong to us—because we have created an inherent value for that object.

Profoundly, during the Twenty-First Dynasty (and probably during many other time periods), the Egyptians were able to “de-fetishize” these objects. They were able to separate the coffin from the essence of one dead body and modify it for another.

Despite the perceived dangers and moral problems with such reuse, the Egyptians did it nonetheless (McDowell 1999; von Beckerath 1992).⁷ Indeed, if my reuse rates of over 60 percent hold up to further scrutiny as my research continues, there was cultural agreement amongst an entire community of elites to continuously break the link between the person and coffin, to conventionalize a coffin’s transformation from sacred to commodity and back again, and to focus on the value of short-term, transformative ritual activity at the expense of the permanent protection a coffin might provide.⁸

Igor Kopytoff’s essay in Appadurai’s *Social Life* is helpful when thinking about objects that are not

meant to move back into the commodity sphere after their initial production (Kopytoff 1986). Kopytoff discusses objects that are set aside by a given culture as sacred and taken out of circulation. He states that “in every society, there are things that are publicly precluded from being commoditized,” and continues, “. . . in any society, the individual is often caught between the cultural structure of commoditization and his own personal attempts to bring a value order to the universe of things” (Kopytoff 1986: 76). Thus, in ancient Egypt a few individuals went against the stream of broader social norms and just took what they needed, clashing with the larger system of cultural values.

According to Kopytoff’s model, coffin reuse was anti-cultural or counter-cultural, and indeed this is how Egyptologists have approached reuse—as something aberrant and immoral, and thus infrequent in its occurrence. But my research shows a reuse rate that suggests most Egyptian elites (i.e., people who could afford coffins or rituals including coffins) were deciding *en masse* to re-commodify the funerary arts of their elders for contemporary use. In other words, a culture can only follow morality when it can afford to do so. Kopytoff’s essay suggests that when people move sacred objects back into the commodity sphere, they are breaking the rules (Kopytoff 1986: 88). Indeed there is something to this perspective, from the Egyptian point of view, because so many reusers did attempt to mask their reuse (and many were probably so successful that I cannot see any trace of it during my analysis). However, the practice of reuse is quite complex because just as many reus-

7 It is difficult to understand how the ancient Egyptians were able to break the link between the person and this sacred thing. I suspect there were magical spells and rituals involved to keep the dead at peace before and after they were removed from the container, but the Egyptians did not leave much information for us to understand how they justified or rationalized funerary re-commodification.

However, see *Khonsuemheb and the Ghost*, in which a High Priest of Amen is visited by an unhappy *akh* spirit of the Middle Kingdom whose tomb has been lost or damaged. The High Priest promises to rebuild his tomb, commission a coffin of gold and precious wood, and to renew his offering cult. This fiction reflects the repercussions of tomb and coffin reuse.

8 My June 2012 research showed the following results. The reuse rate of the eleven coffins in Leiden is 63.63%. The reuse rate of the twenty-one coffins in Paris is 57.14%. The reuse rate of the nineteen coffins in Vienna is 57.89%, however, many of the Vienna coffins are only fragments, not complete pieces, and fragments rarely show any evidence of reuse. If I remove the fragments from the Vienna study, the reuse rate rises to 73.73%.

ers did so by removing only the personal name and putting in a new one, not shrouding the action at all. This method implies that a large part of ancient Egyptian society in the Twenty-First Dynasty was complicit and accepting of the practice, perhaps indicating a shift in social norms.

Our own expectations of coffin reuse are very important if we are ever to understand the practice from an emic perspective. If a reuser was able to hide older decoration and pass off a coffin as fashionable and new for his time, it is something that modern Western society accepts and understands. The motivations behind the masking of such ritually charged resources are clear to us because we assume that the Egyptians also believed such reuse to be aberrant, like most of us in the modern West do. However, given the high percentage of coffin reuse, and given that reuse was commonly performed by simply erasing the name of the previous owner for the name of the newly dead, we need to ask how the ancient Egyptians perceived the efficacy and value of a coffin that was made for someone else. Did it matter in any way that it was taken from another person—sometimes damaging the earlier mummy?

The motivation to acquire a coffin seems to have been so great that reuse rates skyrocket in the Twenty-First Dynasty as access to resources plummets. Much of this was ideologically driven: The dead needed ritual transformation—and the elite Egyptian mindset demanded materiality to create that transformation through a complicated set of funerary rituals that included the “Opening of the Mouth” ceremony. But the reuse was also economically driven: Access to high quality wood from Lebanon or elsewhere was impossible and people had to look somewhere else for this most basic coffin resource. Social drivers were also essential: funerary rituals took place in a public or semi-public forum, inviting an intertwined socioeconomic agenda. The families of the dead wanted to display their social place to the world, and they needed funerary materiality to do it (Cooney 2007, 2008).

Was the value of a coffin lowered in the eyes of witnesses of funerary rituals because it had been reused? This is more difficult to answer, but I think the answer depends on the level of distance a given reuser was able to create from the previous coffin owner. In other words, the more modifications one was able to create on a given coffin, the more it may

have seemed to belong to the recently dead. The very fact that there was a gradient of reuse—from reassignment to thorough refashioning—implies an analogous gradient of attitudes towards the practice, probably partly depending on one’s social rank and status in the world. The wealthier one was, the more the individual would have known how important it was to cover one’s tracks. The lower-ranked may not have had such scruples. But these are socioeconomic notions of value. If we think of the ritual use and religious meaning of these coffins, we might then ask what it meant for an ancient Egyptian to reuse a coffin that had previously belonged to another soul. In the end, it seems the Egyptians decided that the value of a reused coffin lay in its ability to perform transformational and protective rituals with the deceased inside of it—whoever that was at the time.

In David Graeber’s book *Towards an Anthropological Theory of Value*, he ponders “What if one did try to create a theory of value starting from the assumption that what is ultimately being evaluated are not things, but actions” (Graeber 2001: 49). This is a useful perspective for this research because a coffin is the embodiment of ritual action, concretized in a three-dimensional, decorated object (Lüscher 1998). Essentially, the coffin represents a material abstraction of ritual activity. Assuming the practical, material approach that Graeber insists on, if all abstractions have a material base, then the production of a reused coffin could limit how efficacious it was perceived to be (Graeber 2001: 54). Again, the dataset of Twenty-First-Dynasty coffins shows gradients of reuse, and those gradients could be associated with perceived levels of ritual and religious functionality.

The Egyptian coffin gained its most important value through action—in this case, the action of funerary ritual—which was perceived as necessary for the effective transformation of the dead in elite circles. If ritual transformation and materiality were thus connected in ancient Egypt, then there would have been a strong drive to acquire coffins for the people who had just died, over and above a motivation to protect the coffins of ancestors who had been dead for generations; after all, these souls had already benefitted from the transformation of funerary ritual. Some Egyptologists may consider coffin reuse to be an immoral crime that happened rarely, but the ancient Egyptians may have considered the *nonperformance* of ritual transformation for those

who had just died to be an egregious cultural and social failure. Coffin reuse was a creative negotiation of the economic-social-religious crisis at the end of the Bronze Age. In other words, it was not the reuse of a coffin that was aberrant; if anything was aberrant, it would have been refusing to provide the recently deceased with transformative ritual activity by means of funerary materiality, just because there was no access to previously unused wood. ✱

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Adam's Ancestors, Louis Leakey, and African Archaeology's Quest for Validation

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My first full-time job was as Warden of the Prehistoric Sites of the Royal National Parks of Kenya in 1956. I was stationed at Olorgesailie where there are lacustrine deposits, some of which are startling white diatomaceous sediments consisting of mollusks that characterized old desert lakes. The site had been found in 1919 but was made famous by the research of Louis and Mary Leakey beginning in 1942 and later by the comprehensive excavations of Glynn Isaac, who gave the site its true significance in paleoanthropological studies (Sept and Pilbeam 2011). For someone appearing on the scene from Britain where I had worked at the northern fringes of human activity during the Pleistocene and had been lucky to analyze collections of derived stone tools that numbered less than three hundred pieces, Olorgesailie was an eye-opener (White 2012). There were literally thousands of stone tools exposed, many on discrete old campsites. The stratigraphy was clearly visible, though not necessarily interpretable. The stone tools, of which the most distinctive were hand axes, were associated with abundant faunal remains—

many of which were the giant ancestors of animals seen in the National Reserve that surrounded our fifty-two-acre protected archaeological museum-on-the-spot. I realized that in terms of archaeology I was entering a new world that would rapidly provide fresh visions of the story of human origins. For the European archaeologist, sub-Saharan Africa was still a relatively unknown world, even though it had been an exciting place for its pioneer scholars for more than thirty years. After my initiation into Early and Middle Stone Age in Kenya and Uganda, I moved for the rest of my career into questions of trade and state formation in West Africa and finally into the Archaeology of the African Diaspora (Fig. 1).

This essay is a remembrance of the dramas of those early days—personified particularly by Louis Leakey, the dominant pioneer adventurer-explorer of humanity's distant past. When in Nairobi I stayed two nights a week in the Leakey household for some two months and came to know Louis, Mary, and Richard quite well. The house was also home to some six or seven Dalmatian dogs that always seemed to be on the easy chairs, several horses, a fourteen-foot python, and tropical fish that Louis reared to sell and have transported by air to Europe. The sale of the fish supplemented his modest salary and helped with research expenses. Though I readily

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Figure 1. Excavations on camp site on old land surface at Olorgesailie, 1957. Photo: Merrick Posnansky.

admit that I was not an admirer of Louis Leakey's personality, like many I was mesmerized by his charm, sheer knowledge, and ambition. He was a multifaceted person with interests in cultural and biological anthropology, the Kikuyu life into which he had been initiated, the wildlife of Kenya—from beetles to big game—and, in addition, he had just written a play. He was larger than life and always doing many things at once, including getting people together for verandah lunches at the museum, even dabbling in politics, or giving the occasional radio broadcast. He was unforgettable, a man who left a huge mark on the study of both Africa's past and the developing urge by scholars to know more about human origins. His enthusiasm won over many skeptics who thought that Africa had no deep past.

VISIONS OF AFRICA BEFORE 1933

In 1933 Louis Leakey had published *Adam's Ancestors*. It was the first of his books to popularize the concept that human existence had begun in Africa and not Southeast Asia or China, which many well-respected and highly published senior scholars then

avored. Mary Nichol, who eventually married Louis, provided the illustrations for the book. Together they represented a formidable team, later associated particularly with Olduvai Gorge—the key site for Early Stone Age origins (Fig. 2). Their son Richard, who is still active, continued their pioneering scholarship. They were to change the future of the study of human origins.

In 1933 Africa was just becoming known as a fruitful field for archaeological discovery. Difficult logistics, an absence of monumental public buildings, and a hardened racism had kept most scholars away. Few cultural historians gave any credit to the creative genius of native Africans. Cities, building in stone, fine art, and sophisticated social systems were all believed to have come from outside, a view that sadly survived in some quarters until the 1980s. There were different versions of this misconception; one, the Hamitic Myth, was ultimately based on Biblical knowledge and late nineteenth-century research in the Near East. This theory contended that Hamites were related to the Semitic peoples and important in areas such as Ethiopia. The Hamites, according to historians, had spread over a period of



Figure 2. Leakey at Bed 1 site Olduvai, 1957. Photo: Merrick Posnansky.

several thousand years through eastern Africa and were the ancestors of pastoral people, such as the Maasai and Batusi, who were regarded as superior to the majority of Bantu-speaking agriculturalists. At sites such as Gambles Cave in Kenya, where Late Stone Age materials occurred—which he termed “Kenya Capsian”—Leakey found burials he believed represented “Caucasoids” or proto-Hamites. A further variant of this idea posited that divine kingship, so fundamental to ancient Egypt, diffused south into Black Africa and led to divine kingship states and rulers who were absolute and supported by stratified social structures and “feudal” economies. These states were the repositories of the fine craftsmanship, demonstrated in the art objects of wood, terracotta, and brass that were made for royal patrons and chiefs or for ritual performance—and which were continually plundered for Western museums and the collections of art connoisseurs. A more refined version theorized that stone constructions, including terraced fields and stone tombs, culminating in stone cities such as Great Zimbabwe, were the work

of Megalithic Cushites dispersed from northeast Africa. They brought south the knowledge of stone technology from Ethiopia as far as the Northern Transvaal and west into the Congo basin. Such ideas died hard and only really came to an end when Africans began to write their own history and ceased to seek outside intervention for cultural advancement or validation.

It has taken the academic world a long time to comprehend the importance of Africa, a continent more than three times the physical size of North America with a continuous human past stretching back at least four million years, more than twice the known existence of humans in Europe. It was Leakey’s intuitive work that in many ways expanded the new field of paleoanthropology. Previous to the energetic burst from Africa that accelerated in the 1950s and 1960s, paleoanthropology, representing hominid and prehomonid behavior and Stone Age archaeology, had been focused on Europe and particularly France—thought at that time to have some of the world’s oldest and best-preserved sites of early humans. Though wonderful parietal art from southern Africa had been described as early as the first half of the nineteenth century, rock art was still visualized as being a European innovation of the late Pleistocene rather than something that many advanced hunting and gathering societies created once they had become technologically proficient and had the time to speculate on the incomprehensible. The chronology for Early Man was squeezed into the Pleistocene period, then believed to have comprised only the last 600,000 years.

LEAKEY’S CONTEMPORARIES IN AFRICAN ARCHAEOLOGY—RAYMOND DART AND THE DISCOVERY OF THE FIRST AUSTRALOPITHECINES

There were three scholars who changed that situation and opened the doors for the charismatic entry of Louis Leakey and his essential companion Mary Leakey. They were Raymond Dart, Gertrude Caton-Thompson, and Edward J. Wayland. All of them at different times had association with the Leakeys on either a personal or professional level. In 1924 Raymond Dart, a young Australian anatomist at Witwatersrand University in Johannesburg, South Africa, described a skull found at a quarry site at Taung in the northern Cape. He recognized both human and



Figure 3. Raymond Dart, second from right, with author far right and Jean Hiernaux and Bill and Barbara Howells (from left) on Congo River, 1959. Photo: Merrick Posnansky.

apelike features and named the find *Australopithecus*, the southern ape-man. He also postulated his belief that humans had originated in Africa. Many scholars, including the very young Louis Leakey, did not accept the transitional status of *Australopithecus africanus* and continued searching for a missing link between the great apes and humans. It was not until a retired Scottish medical doctor, Robert Broom, entered the fray in the 1930s—he continued to find more australopithecines at Sterkfontein and Kromdraai in the Pretoria area—that it was realized that australopithecines were truly “ape” men with wobbly human gait but brains no bigger than the great apes that still survived in Africa. Two attributes, that have since been disproved, were derived from these sites, namely, intentional fire-making and tool creation, which made these ancestors more believable. Fire warded off wild creatures and made caves more habitable, and tools began the cultural evolution that enhanced brain size and complexity.

Stimulated by Broom’s work, Dart and his students found further fossils in 1947–48 at a collapsed cave at Makapansgat in the Northern Transvaal, which he eventually named *Australopithecus prometheus*, or, the fire-using australopithecine. In

the cemented breccia that contained the australopithecine remains, he also found literally millions of animal bones. Dart believed that many of the faunal remains had been used as tools, and he perceived an osteodontokeratic (bone, teeth, and horn) culture with jawbones providing knives, splintered long bones and horns used as daggers, and other bones contributing to a complex tool kit.

Dart’s theories became famous when they were publicized to an outside scientific audience by the dramatic writing skills of Robert Ardrey, author of *African Genesis* (1961) and *The Territorial Imperative* (1966) that became bestsellers. Ardrey had previously written the popular play *Thunder Rock* and the screenplay for the film *Khartoum*, for which he was nominated for an Oscar. In *Territorial Imperative* he examined primate behavior and on the basis of Dart’s work concluded that both *Australopithecus africanus* and chimpanzees had cannibalistic behavior. Strengthened by Ardrey, Dart went to the 1959 Pan-African Prehistory Congress in Leopoldville confident that he would sway the paleoanthropological world with his views about fire-using, tool-using, and cannibalistic human ancestors (Fig. 3).

LOUIS LEAKEY'S EARLY SETBACKS

Louis Leakey's academic research luster started brilliantly from 1926 but waned somewhat after 1932 when he claimed to have found the first remains of the genus *Homo* at Kanam and Kanjera by Lake Victoria in Kenya. A specialist team assembled by The British Association for the Advancement of Science visited Kanam: Leakey was unable to find his exact site, and the team was unable to pronounce it an Early Pleistocene location as claimed by Leakey. He and his wife Mary, whom he married in 1936, lived hand-to-mouth on extremely small grants. His divorce from his first wife cut him off from academic advancement in Britain, where public morality was still taken very seriously. It was not until 1945 when Leakey accepted the then poorly paid curatorship of Nairobi's Coryndon Museum and they began working more regularly at Olduvai Gorge that his reputation started improving. In 1911 the German Hans Reck had identified Olduvai as a key paleontological site in what was then German East Africa. Leakey worked there beginning in 1931 and recognized its importance and the possibility that it could contain hominid finds. About the same time, Mary had excavated Neolithic and Iron Age sites in England. She had originally been recommended to Louis as an illustration artist by Gertrude Caton-Thompson, who was impressed by her drawings of flint tools for Caton-Thompson's 1934 publication *The Desert Fayum*.

GERTRUDE CATON-THOMPSON, PIONEER ARCHAEOLOGIST, AND HER AFRICAN INFLUENCE

Caton-Thompson had confirmed her reputation in 1931 through her success in proving that Africa's most spectacular stone-built site, Great Zimbabwe, was the work of indigenous Africans in the medieval period and not of immigrants from the time of Solomon from South Arabia, Ethiopia, India, or some other exotic locale. She was very much Mary's mentor. Mary excavated key sites in Kenya at Hyrax Hill and with Louis Leakey at Njoro River Cave, sites that had implications for Africa's post-Stone Age history. Mary produced meticulous reports. Hers was

a history from within Africa and reflected Caton-Thompson's mentorship. Caton-Thompson, in her conclusions about Zimbabwe, differed markedly from Raymond Dart—who besides being interested in australopithecines had also advanced theories about foreign influence on southern and central Africa that he derived from East Asia (Derricourt 2011). Zimbabwe was the stellar site for Dart and other ultra-diffusionists. However, when Dart came to the Leopoldville congress in 1959, he came to battle largely on australopithecine behavior rather than on his fringe cultural diffusionist views (Fig. 4).

Gertrude Caton-Thompson had awakened the academic and to some extent the popular world to both the importance of Africa and the significance of women scholars. (Caton-Thompson's scholarly career was comprehensively surveyed by UCLA's Willeke Wendrich; Wendrich 2008.) It was she who introduced Louis Leakey to Mary Nichol, the future Mrs. Leakey, who had no formal education. Caton-Thompson mentored the careers also of many other significant archaeologists, such as Kathleen Kenyon, the excavator of ancient Jericho, which for many years was regarded as the world's "first" town. Caton-Thompson was likewise self-taught: The word *amateur* was at that time not regarded as a slight; it was, rather, a description of one's enthusiasm for one's scholarly interest. She united interest in southern Africa and Yemen with her work in Egypt and the Sudan. Her research at Zimbabwe clearly demonstrated that the monumental elliptical enclosure rising to a height of more than 9 meters—with its soapstone birds, gold objects, and trade items—firmly belonged to the medieval period and was the work of Africans and not of settlers or miners from Arabia or India. At Hureidah in Yemen Caton-Thompson provided the data that indicated the close connections between Ethiopia and Yemen some two thousand years ago, and in her work in the Nile Valley she demonstrated the links to the south that had been neglected by other scholars focusing on ancient Egypt. Her research, largely subsidized from personal funds and family friendship, provided the respectability for bringing Africa onto the world's cultural stage and anticipated the recognition that Leakey received for his insistence on the importance of Africa in world history.

WAYLAND AND PLUVIALS—DATING AFRICA'S PAST

The scholars working to establish the authenticity of Africa in world history lacked the comprehensiveness of the associations of animal remains and stratigraphy that would enable them to tie their findings into European scholarship. This dilemma was for a time surmounted when Edward J. Wayland provided an ingenious chronological framework that was fully adopted by Leakey. Edward Wayland, normally referred to as E. J., was the most remarkable of the scholars I have noted—all of whom I am privileged to have known. After a spell in Ceylon and research in the Nile Valley and Mozambique, he was appointed Director of Uganda's Geological Survey in 1919. He commenced his duties with a twelve-hundred-mile walk around Uganda during which he discovered most of the Miocene to Pleistocene sites that later made Uganda famous. He also envisaged a changing landscape in which human beings had a role. He attempted a chronological sequence convincingly based on Uganda's climate history. His best-known paper, "Rifts, Rivers and Rains," in the *Journal of the Royal Anthropological Institute* for 1934, relied heavily on the Ice Age sequence that had been developed for Europe with pluvials being equivalent to European glacials. Thick beds of river gravels, represented by terraces cut through by rivers when lake levels dropped, characterized a pluvial. Like Leakey, Wayland used European nomenclature for some of the Stone Age cultures he described, but he added new ones to which he gave African names, such as the stone choppers of the Kafuan. The Kafuan came to be thought of as the predecessor of the Oldowan that Leakey discovered in the earliest beds at Olduvai Gorge. In time it was shown that the pebble tool industries of Africa, such as the Kafuan—the equivalent of the eoliths of Europe—were not of human origin for similar artifact forms were found in gravel horizons of earlier time periods (Bishop 1959).

The climatic sequence survived even harsh criticism at the 1959 Leopoldville congress with adherents such as Clark Howell of Berkeley warning archaeologists against "throwing out the baby with the bathwater." This was still the era when the Pleistocene was believed to contain the Ice Ages. On the basis of sketchy associations with other time periods, and on paleontological grounds, it was believed to have lasted less than a million years. It

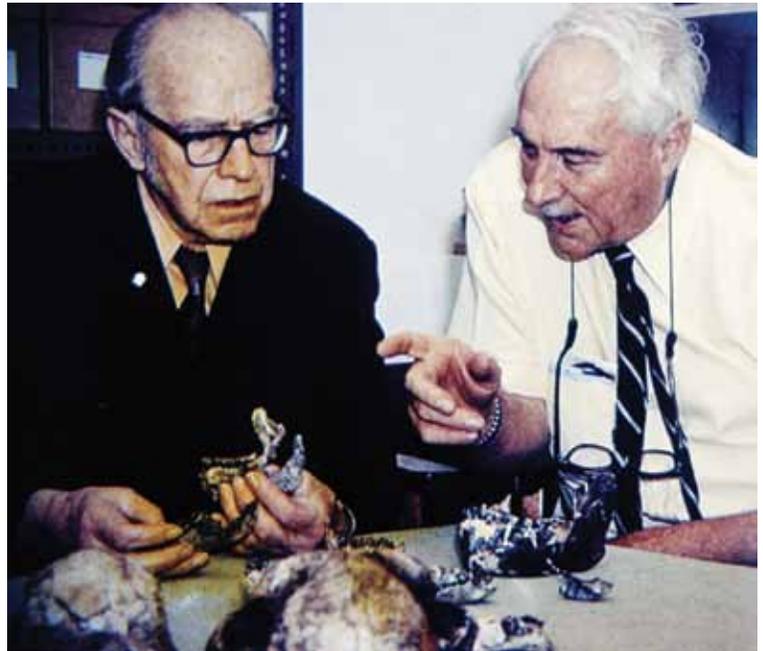


Figure 4. Louis Leakey (right) and Raymond Dart studying australopithecines, 1960s. Photo: B. Campbell.

took some time for the acceptance of new methods of dating, such as radiocarbon dating for the last 60,000 years and potassium argon dating [K/Ar] for periods largely earlier than 300,000 B.P. One of the problems was that radiocarbon dating at that time required relatively large carbon samples, and K/Ar depended on fresh volcanic material. In many parts of Africa "uncontaminated" samples of carbon of adequate size just did not survive the harsh climatic conditions or the particularly acidic soils, while volcanic materials were largely concentrated in the Rift Valley zones running from Ethiopia to Malawi. The use of K/Ar dating of volcanic materials from East Africa, pioneered at Berkeley, not only provided paleoanthropologists with a chronological framework—it cemented the importance of Leakey's discoveries at Olduvai and later of those of his son Richard in Turkana, Kenya, and of Johanson and Tim White in Ethiopia. All of a sudden, the areas where Wayland had worked, and the australopithecine evidence from South Africa, became less central to the story of human origins.

Wayland finally left Uganda in 1958 after a post-war appointment to Bechuanaland (now Botswana), where he also established a Geological Survey. By that time his influence had waned. Leakey, however,

had wholeheartedly adopted the Pluvial sequence and adjusted the criteria for speculating on climate by including in his chronological kit bag interpretations from the abundant faunal fossils that characterized the alkaline-rich lake deposits of East Africa where he was working. He based many of these interpretations on his superb knowledge of the African wildlife he had encountered and grown to love. For a time, before his discovery of *Zinjanthropus*, he was best known for his descriptions of the large Pleistocene animals—the pigs and baboons that characterized locations such as Ologesailie in Kenya (see Fig. 1).

Though Wayland published much of his work in Uganda, particularly in the *Uganda Journal* and *Annual Reports of the Geological Survey*, he was for a time nearly as well-known and respected in the academic world as Louis Leakey. But like the present writer, he was a dilatory and procrastinating author. He inspired many scholars in other fields (i.e., geology and zoology) such as Tindell Hopwood from the British Museum and the geologist J. D. Solomon, both of whom also ultimately worked with Leakey. Unfortunately, neither of them was able to modify some of Leakey's more dogmatic conclusions. Wayland also helped two other scholars, T. P. O'Brien and C. van Riet Lowe, publish volumes on the prehistory of Uganda (1939 and 1952) that summarized much of his research. He never received the outside funding for either expanded field research or the publicity that would have enabled him to recruit trained helpers to exploit the opportunities available and make the sites of Uganda better known.

LEAKEY IN THE LIMELIGHT

Meanwhile, Leakey published volumes on *The Stone Age Cultures of Kenya Colony* (1931), *The Stone Age Races of Kenya* (1936), and *Stone Age Africa: An Outline of Prehistory in Africa* (1936). He was recognized as brilliant but at the same time flawed. The debacle of his unsubstantiated claims for finding Early Man and his unconventional—by the social standards of that time—private life left a cloud over his career. The major enhancement to his reputation in the following years, however, depended on three major events. The first was his discovery at Rusinga in Kenya of the skull of a possible ancestor of both great apes and hominids, dating from the Miocene

period perhaps some twelve million years ago, which he named *Proconsul*. This was a jocular name, for Consul was the name of a chimpanzee that had appeared on the stage as the almost human ape. *Proconsul* is now counted among the *Dryopithecines* and has since been found in Uganda, Pakistan, and the Nile Valley. It was this discovery that clearly established the African ancestry of both apes and humans, set the adrenaline moving in paleoanthropology, and led to a great expansion of research in Africa after 1950 (Fig. 5).

Leakey's 1951 volume *Olduvai Gorge*, proved to be a revelation for archaeologists interested in the Stone Age. It clearly demonstrated the sequence from Oldowan chopping tools to developed hand axe industries. It thus provided material from Africa comparable to the Chellean/Acheulean sequence in Europe. The volume was illustrated with Mary's superb drawings and, unlike much of the European material, the artifacts were fresh from land sites rather than derived from river gravels. This was followed by the discovery in 1959 of perhaps the best known of all the australopithecines at Olduvai Gorge, *Zinjanthropus boisei*, now subsumed within the larger *Australopithecus* family. It was this second event, the discovery of a substantial hominid, that was really the turning point for Leakey—long awaited but fully exploited.

The third major event was Leakey's convening of the first Pan-African Prehistory Congress in Nairobi in 1947 (Leakey 1952). Though Leakey had written the first outline of Africa's prehistory, this congress brought together scholars from the Nile Valley; North Africa; and East, Central, and Southern Africa and clearly established Leakey as Africa's outstanding authority on the continent's deep past. He was the secretary general of the organization, and at the second congress he was elected president to replace Abbé Breuil. The succeeding congresses, in Algiers and Livingstone, provided a continental identity for African archaeology that combined the new research on paleoanthropology with established work in northern Africa and the later precolonial past that had been significantly augmented by Mary. This later material on Africa was unfortunately briefly termed the Protohistoric period.

From its inception in 1947 until 1959 only White scholars working or living in Africa attended. At the third congress, in Livingstone, in the then British colony of Northern Rhodesia, Dart, Wayland, and



Figure 5. General View of Olduvai Gorge, 1956. Photo: Merrick Posnansky.

Caton-Thompson all gave papers. In some ways it was the last of the truly Colonial congresses. The 1959 congress in Leopoldville in Belgian Congo, which was the first I attended, was of fundamental significance. It addressed several contentious issues relating to dating and marked a change in the study of the African past by introducing studies that brought recent history into the purview of Africa's past. Leakey clearly won the battle to validate the australopithecines as the first true hominids. Olduvai provided a sequence that embraced the whole Pleistocene period. Unlike the South African fossils that had to be slowly chipped out of solid breccias, the Olduvai material was found in an excellent state of preservation and was associated with a range of bones and even fossil botanical material. The human remains were found throughout the sequence with stone tools and within discrete campsites. In addition, by 1959 there were new methods of dating the deposits, particularly those of volcanic origin. New research in South Africa indicated that rather than the australopithecines being hunters, or even cannibalistic, they were the prey of saber-toothed felines, such as leopards, whose tooth marks were observed on several of the fossil hominid skulls in South African caves.

LEAKEY AND FAME

The success of Leakey led to positive developments. The first was that, instead of his being perennially short of funds, the National Geographic Society in Washington became one of his chief sponsors. His camp at Olduvai was enlarged, and new locations were found—including one in 1965 where the first remains of a true genus *Homo* was discovered; it was named *Homo habilis*, or the handy man, because it was associated with stone tools and dated to two million years ago.

Leakey was an intuitive genius. Some called his discoveries “Leakey’s Luck,” but it was more than just luck: the discoveries were inspired by Leakey’s complete absorption into the East African landscape and his feel for the distant past. He understood animal life and the potential and possibilities for discovery. However, he would not have got where he was without the more rigorous discipline of Mary, her precise work on the finds, and the attention to detail and accuracy in her publications. It was Mary who discovered many of his major fossil finds, drew the stratigraphic sections, and analyzed and drew the artifacts. Louis was a charismatic charmer who,

after his success in 1959, knew how to raise funds and attract support, particularly in the United States which he frequently visited. He spoke to sold-out auditoria and with his husky voice attracted adoring audiences—including a very memorable appearance at UCLA in Royce Hall in 1966 where late attendees had to stand. He had resigned his position at the Coryndon Museum in 1961 and was able to fund his research from major grants and gifts from supporters. In 1968 the L. S. B. Leakey Foundation for Research Related to Man's Origin was established.

Southern California was kind to Leakey; initially the major recipient for funds was Louis himself, but after his death in 1972 the foundation became a major sponsor for a wide range of projects from paleoanthropology to contemporary hunting and gathering practices and primate behavior. The foundation provided grants that helped fund higher-education training in paleoanthropology and archaeology for large numbers of African students at American universities, particularly at Berkeley under Desmond Clark and Glynn Isaac, but also for students from Somalia and Togo at UCLA. In the late 1960s there were even suggestions that there should be an endowed chair in African Archaeology at UCLA. But from early discussions it was obvious that the foundation would only try to assemble the funding if there was an informal guarantee that the first holder of that chair would be Louis Leakey. Because this gave UCLA no choice in decision making, the matter was quietly dropped. Even though Leakey had public celebrity status at this time, many American archaeologists were quite critical of his work at Calico Hills and some of his generalizations about human origins.

Leakey's freedom from the chores of museum directorship and his access to research funding enabled him in the early 1960s to encourage and, at least partially, support several researchers to study the behavior of great apes: well-known are the work of Dame Jane Goodall on chimpanzees at Gombe in Tanzania; Diane Fossey, who studied the gorillas on the borders of Uganda and Rwanda; and Birute Galdikas from UCLA who observed the orangutans of Indonesia. While Louis branched out and became an international celebrity, Mary continued work in a disciplined manner at Olduvai, producing by 1994—the year before her death—the fifth volume of her

magisterial series on excavations at Olduvai with the help of specialists from other countries and disciplines. After 1963 Mary directed the excavations at Olduvai, and Louis was less and less involved. Many students, particularly from North America, worked with her. After Louis died in 1972, Mary also worked at Laetoli in Tanzania, which, with its footprints of early australopithecines and its large number of species, turned out to be as significant a site as Olduvai. Their son Richard shared his father's love for the wildlife and landscapes of Kenya. As a boy, he communicated that love to me when we went riding on the reserves near their home in Langata in 1956. Without formal training he opened up new research opportunities in the Omo Valley and Lake Turkana. He was a master of logistics and had absorbed an understanding of paleoanthropology from his parents. Other researchers worked in southern Ethiopia; however, in many respects, all owed their original stimulus to Richard Leakey's vision and confidence in believing that the Rift Valley—with its ancient lake beds, readily datable by K/Ar, and the abundant faunal remains to help create the environment—provided the indispensable key for understanding African human origins.

LEAKEY, CALICO HILLS, AND OTHER LIMITATIONS

But there were other sides to the Leakey coin. If it was the adulation of Southern California admirers that gave him celebrity, it was his love of that status that drew him away from his true calling in Africa. From 1963 on, Louis Leakey spent an increasing amount of his time—already severely limited by ill health, his resources, and intellectual energy—on the Calico Hills project some two hundred kilometers northeast of Los Angeles. Leakey proposed that Early Man had come to the Americas perhaps as early as 80,000 B.P., and not the 12–25,000 years ago proposed by Americanist archaeologists. These early humans had moved through then more verdant inland valleys that were amenable to hunting and gathering populations. Often under his absentee direction, a California group that had worked at the site since the late 1950s excavated an alluvial fan location and unearthed thousands of chert flakes. No actual campsites were ever located. Selections of tools such as choppers and crude scrapers were made, and tool-like pieces were identified as cultural

material. Mary Leakey had confidence in neither the site nor the finds. She did not share Louis's enthusiasm, nor did she accept her husband's conclusions. For the last few years of his life they became virtually separated, with Louis in America raising funds or stimulating interest in Calico, and Mary directing ever more specialized excavations at Olduvai. At a conference in 1970 Rainer Berger from UCLA suggested that some clusters of stones may have been hearths, which failed to convince skeptics in North America and globally (Berger 1979). Leakey quietly accepted a nonproven verdict. The site was excavated for a further fifteen years and left some of the biggest trenches of any American excavation—but failed to reveal any convincing evidence of early human activity. Like the Kafuan of Uganda, and the eolith pebble tools of England, the fractured stones that exhibited flakes were undoubtedly natural, the result of boulders in collision, moving with the slow flow of the alluvial fan and fractured in that movement.

Though a mentor, Leakey was never a teacher. Many of those he influenced were women. He had little impact on the training of the future generation of African-born paleoanthropologists. Solomon, Hopwood, and O'Brien all worked with him for short periods but no lasting relationships were forged. The nearest long-term relationship was with Glynn Isaac at a time when Glynn was mainly working at Olorgesailie, and Leakey was outside of Kenya raising funds. Nevertheless, his legacy in the form of scholars from overseas who have been attracted to work in East Africa, his huge collection of material that has provided research data for many scholars, and his enthusiasm have stimulated generations of researchers.

He was never very interested in the more recent history of East Africa, of the movements of people that provided the cultural mosaic in which he worked. Though he worked on rock art, the plastic arts of Africa, such as ceramics, metals, and wood, never interested him, and apart from the Kikuyu he knew little about other peoples. He wrote scathingly about mission-educated Africans, believing that only through the elders and chiefs would one have access to the past (Leakey 1961: 24–26). Very paternalistic, he believed that only those elders and followers trained in their traditional history and culture should shoulder the responsibilities of post-independence rule. Since his death in 1972, the greatest growth in

African archaeology has been in the archaeology of state formation, of agricultural origins, and latterly in historical and ethnoarchaeology (Posnansky 2010). *

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Report from the Chair

The Archaeology Graduate Interdepartmental Program in 2011–12

JOHN K. PAPADOPOULOS¹

The Archaeology Interdepartmental Program (IDP) at UCLA is a graduate program in which students can create uniquely configured plans of studies and research according to their individual interests, backgrounds, and strengths from multiple departments within the university. There are currently over thirty enrolled graduate students in the Archaeology IDP, and our students have covered the globe in their pursuit of academia's highest degree. We are proud to announce the following two recently completed doctorates.

Seth Pevnick completed his Ph.D. dissertation, "Foreign Creations of the Athenian Kerameikos: Images and Identities in the Work of Pistoxenos-Syriskos," under the supervision of Professor John Papadopoulos. Dr. Pevnick is currently the Richard E. Perry Curator of Greek and Roman Art at the Tampa Museum of Art.

Jennifer Rashidi's dissertation, entitled "Animals, Disease and Medicine in the Ancient Near East: Towards a Pathocoenosis of Ancient Mesopotamia," was completed under the supervision of Professors Gail Kennedy and Robert Englund. Dr. Rashidi is currently teaching part-time in the Department of Anthropology at Santa Monica City College.

Five other students are nearing completion of their dissertations and hope to file in the coming months. Esmeralda Agolli is completing "The Pro-

duction and Technology of the Late Bronze and Iron Age Pottery of Southeast Europe," supervised by Professor John Papadopoulos. Jack Davey's dissertation, "Cities of the Living and the Dead: Mortuary Ritual in Context in Iron Age South Korea," is supervised by Professor Lothar von Falkenhausen. Kelly Fong is completing her dissertation, "Racialization and the Historical Archaeologies of Chinese Americans," under the supervision of Professor Jeanne Arnold. Anke Hein's dissertation, entitled "Prehistoric Cultures of the Liangshan District—Disentangling Identities in a Multiregional Interaction Sphere," is supervised by Professor Lothar von Falkenhausen, who is also supervising Kuei-chen Lin's dissertation, "Regional Interactions and Social Complexity of the Sichuan Basin in Bronze Age China." The range and scope of the research of our recent Ph.D.s, in terms of theory and methodology as well as regional focus, are ample testimony to the strength of the Archaeology IDP. Anne Austin, Sonali Gupta-Agarwal, Kanika Kalra, Brett Kaufman, Karl LaFavre, and Catherine Pratt have completed their doctoral exams and advanced to candidacy.

In addition, three students have recently completed their master's degrees: Chelsey Fleming, Benjamin Nigra, and Kristine Olshansky.

We are especially proud of our students for their success in competitive funding at the university and international level for the 2012–13 academic year. Doctoral student Joseph Lehner was awarded the prestigious and highly competitive German Chancellor Fellowship and will spend the academic year

¹ Department of Classics, and Cotsen Institute of Archaeology, UCLA.

in Germany conducting research for his dissertation. Two of our continuing students, Kelly Fong and Anke Hein, were awarded Dissertation Year Fellowships; four of our continuing students (Evan Carlson, Kathryn Chew, Benjamin Nigra, and Rachel Moy) received competitive year-long Graduate Research Mentorships. Catherine Pratt received an International Institute Long-Term Fieldwork Fellowship as well as a Graduate Summer Research Mentorship; finally, Stephanie Salwen received a French FLAS Fellowship. Congratulations to them all!

SPOTLIGHT ON 2011–12 FIRST-YEAR ARCHAEOLOGY IDP STUDENTS

The 2011–12 class of first-year IDP students consisted of six highly talented people, all with stellar undergraduate degrees. Three of these students—Myles Chykerda, Ellen Hsieh, and Hsiu-ping Lee—entered the program with master’s degrees from other institutions. Myles, a native Canadian with his M.A. from the University of Alberta, is working on Aegean archaeology with Professors Sarah Morris and John Papadopoulos; Ellen’s M.A. is from the National University of Taiwan; she came to the program with a three-year fellowship from the Taiwan Ministry of Education and is working in Southeast Asian archaeology under the supervision of Professors von Falkenhausen and Li Min; and Hsiu-ping Lee, whose M.A. is also from the National University of Taiwan, is working on the archaeology of northern China with Professor von Falkenhausen. Two of the other three 2011–12 students came to the program with B.A.s from some of the finest institutions in North America: Terrah Jones (Ripon College) is now working on Andean archaeology under the guidance of Professor Charles Stanish; Rachel Moy (University of Michigan, Ann Arbor), now works on the archaeology of the Egyptian Middle Kingdom with Professor Willeke Wendrich. Both Terrah and Rachel were awarded the Eugene Cota-Robles Fellowship. Laura Griffin, our sixth student (UCLA), transferred to the Archaeology IDP with a M.S. in Physics and is working on the material culture of the Andes, ancient Mediterranean, and western European societies with Professor Charles Stanish. All six students have already left their mark on the program, and we look forward to tracking their future academic growth.

THE INCOMING CLASS OF 2012–13 ARCHAEOLOGY GRADUATE IDP STUDENTS

The talent and diversity of the incoming class of 2012–13 IDP students is truly exceptional. Five students are entering the program with completed M.A.s, some with two! Roselyn Campbell obtained her M.A. in Anthropology from the University of Montana, Trevor Van Damme is entering the program with a recently completed M.A. in Greek and Roman Studies from the University of British Columbia, and Christopher Wood enters the IDP with a master’s from UC, Santa Barbara. Sarah Chandlee has one master’s in Art History from the University of Memphis and a second one in Archaeology from the University of Tulsa; Richard Ehrich, from Germany, has a double M.A. in Prehistoric Archaeology and Sinology. Both Roselyn Campbell and Sarah Chandlee will be focusing on Egyptian archaeology and will work with Professors Willeke Wendrich and Kara Cooney. Richard Ehrich will be studying Neolithic Sichuan under the supervision of Professor von Falkenhausen. Trevor Van Damme will focus on the Bronze Age Aegean, where he will work with Professors Morris and Papadopoulos. Christopher Wood will be studying Greek and Roman funerary archaeology with Professor Kathryn McDonnell. Last but not least, Jacob Bongers joins the IDP with a B.A. in Anthropology from the University of Southern California. Jacob was awarded the UCLA Eugene Cota-Robles Fellowship and will be working with Professor Charles Stanish on Andean archaeology.

The faculty and staff of the IDP, together with the greater Cotsen Institute community, are looking forward to welcoming the new first-year students in the fall, and we wish them every success in the program and during the time they will spend at UCLA.

The health of any graduate program can best be gauged by its students and their research, and the exceptional performance of the students of the UCLA Archaeology Graduate IDP substantiates the program’s “No. 1” standing in the recent National Research Council rankings published in 2010. *

ARCHAEOLOGY GRADUATE INTERDEPARTMENTAL PROGRAM FIRST-YEAR STUDENTS, 2011–12



Trevor Van Damme was raised on a farm in rural Manitoba. He received both a B.A., Honors, and an M.A. in Greek and Roman studies at the University of Victoria. His primary research interests include the archaeology of ceramics and the negotiation of group identities, with a focus spanning the Late Bronze Age and Early Iron Age of the Aegean. His master's thesis examined the repurposing of Bronze Age artifacts and architecture in Iron Age through Hellenistic contexts. He has worked on archaeological projects in Greece and Italy. Most recently, he was awarded a four-year doctoral fellowship from the Social Sciences and Humanities Research Council of Canada. While at UCLA, he will work with Dr. Sarah Morris and Dr. John Papadopoulos.



Sarah Chandlee, originally from Broken Arrow, Oklahoma, has an M.A. in Art History and Egyptology from the University of Memphis and a second M.A. in Anthropology and Archaeology from the University of Tulsa. With experience excavating in Egypt and Greece, her most recent research focused on the urban design of a Graeco-Roman site in the Nile Delta, Egypt. At UCLA, Sarah will expand on this work, focusing on Graeco-Roman Egypt, urban spaces, cultural interactions, and digital archaeology under the direction of Dr. Willeke Wendrich.



Rose Campbell earned both a B.A. and an M.A. in Anthropology from the University of Montana, focusing on archaeology and bioarchaeology. Her primary research interests include Egyptian archaeology and mortuary archaeology in the Mediterranean, particularly the influence of cross-cultural contact on mortuary behavior. Rose's master's thesis analyzed the uninscribed tombs in the Valley of the Kings in Luxor, Egypt. Before joining the Cotsen Institute, Rose conducted fieldwork in Egypt, Spain, Peru, and the western United States.



Richard Ehrich is a native of Berlin, Germany, where he studied prehistoric archaeology and Sinology at the Freie Universität. He attended Shandong University for one year to study language, and his frequent visits to China include two survey seasons in Sichuan province. Richard has also participated in the excavation of a Chalcolithic tell settlement at Pietrele, Romania, which has sparked his interest in neolithization and the emergence of complex societies. Attracted by some ground-breaking new discoveries in southwest China, he examined the Neolithic of Sichuan in his master's thesis and intends to keep this region as the subject of his graduate studies. In keeping with his focus on Chinese prehistory, he will work with Dr. Lothar von Falkenhausen at UCLA.



Christopher Wood earned his B.A. in Classics from San Francisco State University and his M.A. in Anthropology from University of California, Santa Barbara. Before joining the Cotsen Institute, Chris worked as an archaeologist in Pompeii and participated in a number of underwater excavations in the Yucatan Basin. His past research has included archaeometallurgy, craft specialization, and luxury goods produced for elite Etruscan tombs. He attended the Université de Paris and, more recently, the American Academy in Rome on a Bernard Goldman scholarship. In the summer of 2011 he participated in the Apolline Project, investigating a post-eruption Roman villa and bath complex at Pollena Trocchia on the northern side of Vesuvius. His other interests include landscape archaeology, Roman hydrology, and the impact of aqueducts, fountains, and basins on the *urbs romana*. Chris will be working with Dr. Kathryn McDonnell on the funerary archaeology of Early Roman and pre-Roman Italy, especially the use of material culture and epigraphy in constructing identity.



Jacob Bongers was born and raised in San Jose, California. He received his B.A. in Interdisciplinary Archaeology at the University of Southern California. Prior to joining the Cotsen Institute, Jacob conducted fieldwork in Portugal, Chile, Peru, Ethiopia, and Oman. He recently published "Landscapes of Death: GIS-based Analyses of Chullpas in the Western Lake Titicaca Basin" in the *Journal of Archaeological Science* as a primary author with co-authors Dr. Elizabeth Arkush (University of Pittsburgh) and Dr. Michael Harrower (Johns Hopkins University). He is currently interested in studying how changes in mortuary behavior and monumentality reflect developments in social complexity within and outside the Andean region; he is additionally interested in GIS applications and in the use of remote sensing to identify archaeological sites. At UCLA, he will work with Dr. Charles Stanish.

Report from the Chair

UCLA/Getty Interdepartmental Masters Degree Program in the Conservation of Archaeological and Ethnographic Materials

IOANNA KAKOULLI¹

FOCUS AND BRIEF HISTORY

The UCLA/Getty Interdepartmental Masters Degree Program in the Conservation of Archaeological and Ethnographic Materials [CAEM IDP] is the youngest (out of five) conservation graduate degree-granting program in North America and is the *only* one specifically focused on archaeological and ethnographic materials (the other programs have a more fine arts/decorative arts and/or Eurocentric interest). The program is unique in terms of development, for it has not followed the usual “ground-up” mechanism based on shared faculty interests from different departments; rather, it was established as an interdepartmental M.A. degree program at UCLA in 2003 through a cooperative effort between the J. Paul Getty Trust and UCLA following an agreement between the two institutions signed in 2001. The UCLA/Getty Conservation IDP has two dedicated facilities: the first is within the Cotsen Institute of Archaeology at UCLA, and the second and primary one is at the Getty Villa and includes state-of-the-art laboratories and faculty offices, lecture rooms, and library space to facilitate and enhance instruction.

Specializing in a unique subject matter and building on the strengths of its founding institutions, the UCLA/Getty CAEM IDP has distinguished itself in a very short period of time and today attracts top candidates from the United States and abroad for the three-year master’s degree in the Conserva-

tion of Archaeological and Ethnographic Materials. The UCLA/Getty CAEM IDP curriculum is unique because of its emphasis on materials, technologies, and cultural preservation closely associated with both archaeological and ethnographic objects, including rock art, wall paintings, and mosaics, that are found in museum collections as well as on site. Students gain an appreciation of the often complex range of issues relating to significance, access to, and use of archaeological and ethnographic materials. In many cases, such issues set these types of artifacts apart from fine art or historical materials. It is essential to educate students about the multiple values and meanings these materials hold for indigenous populations and ethnic minorities, while fostering partnerships with stakeholder communities in relevant aspects of conservation decision-making.

The special focus and cross-disciplinary curriculum of the program serves the archaeological, scientific, Native American, and cultural-minority communities alike and offers a nexus at the boundaries of conservation, archaeology, ethnography, and the natural sciences, as well as a sustainable resource for integrated research, education, training, and outreach. The mission of the UCLA/Getty CAEM IDP is to provide sustainable resources for the preservation of diverse material culture in the face of modernization and emerging global challenges; to support discovery and innovation through transdisciplinary research; to train the next generation of conservators in the best practices and methods of cultural-heritage conservation through various pedagogical approaches, including—but not limited to—core teaching and learning, independent research, and laboratory research-based practical experience in

¹ Department of Materials Science and Engineering, and UCLA/Getty Conservation Program.

museums and in the field; and to positively impact communities by informing the public that will hopefully seek to advocate for and protect cultural heritage. The vision of the program is to become a premiere academic establishment in conservation in the United States and abroad that will serve as an important educational and research resource of the academic, local, and global communities.

The three-year program leading to a master's degree consists of two years of coursework and laboratory work on artifacts, emphasizing research-based practice, combined with a summer internship between the first and second years, and an eleven-month internship period that includes the summer between the second and third years and the entire nine-month third year. A master's research paper is completed at the end of the second year of study to allow students to concentrate on their internship duties and conservation work in the third year.

STRUCTURE AND GOVERNANCE

The UCLA/Getty CAEM IDP is administered through the Cotsen Institute of Archaeology under the Division of Social Sciences, College of Letters and Science. In its current structure, it has three ladder faculty members with half joint appointments in the IDP: Ioanna Kakoulli, Ph.D. (Chair), David Scott (Ph.D.), and Ellen Pearlstein (M.A.). Since January 2012, the program also has a half-time temporary faculty member with a three-year appointment in the Professor in Residence Series, held by Christian Fischer (Ph.D.). It also has a full-time academic staff member in the Specialist Series, Vanessa Muros (M.A. and M.S.) and a half-time administrative staff member, Amber Cordts-Cole.

Each faculty member has a primary faculty appointment in a department/school outside Social Sciences, with both an academic (teaching, mentoring, advising) and an administrative (committee service and other obligations) departmental load, in addition to the IDP responsibilities. Drs. Kakoulli and Fischer have faculty appointments in the Department of Materials Science and Engineering (Henry Samueli School of Engineering and Applied Sciences), as do Dr. Scott in the Department of Art History (Division of Humanities, College of Letters and Science) and Ellen Pearlstein in the Department of Information Studies (Graduate School of Education and Information Studies).



Figure 1. Geneva Griswold conserves paint on a polychrome sculpture in Chapel 12 at Sacro Monte di Varallo, Italy. Photo: Annalisa Bonfanti.

RESEARCH

All core faculty and academic staff members have degrees and specializations in different conservation fields beyond their other academic credentials and contribute with their research to the scholarly and intellectual growth of the program and the university (Table 1).

INTERNATIONAL AGREEMENTS/ MEMORANDUM OF UNDERSTANDING [MOU]

In 2012, the UCLA/Getty CAEM IDP and the Department of Environment, Construction and Design, Institute of Materials and Constructions [DACD-IMC], based in Trevano (Lugano), and University of Applied Sciences and Arts of Southern Switzerland [SUPSI] signed a Memorandum of Understanding to explore avenues of mutual interest and to facilitate collaborations and exchange in fields of shared interest and expertise. As a result of this international collaboration, this past summer IDP graduate student Geneva Griswold spent part of her summer internship working in the conservation of wall paintings at the important site of Riserva Naturale del Sacro Monte di Varallo, in Italy, a project lead by SUPSI faculty and staff (Fig. 1).

TEACHING

The faculty of the CAEM IDP is involved in teaching, supervision, advising, and mentoring of IDP students as well as of other students (both graduates and undergraduates) in their home departments and/or other affiliated departments, institutes, and units. In order to expand the educational outreach to the community in summer 2011 the faculty and academic staff of the program co-taught an extension course titled “Collections Care.” The aim was

to promote conservation education and practice, to attract underrepresented minorities, and to provide revenue for the IDP. Guest lecturers (from academia, museums, and organizations) are often invited to give a special seminar and to contribute to students’ conservation education. This is also a way to network and to introduce our students to museum professionals for their future careers.

Table 1. List of IDP core faculty and academic staff, their degrees, affiliations, and a brief overview of areas of specialization.

CORE FACULTY	AREA OF SPECIALIZATION
<p>IOANNA KAKOULLI, D.Phil. 1999. University of Oxford, England.</p> <p>Chair of the IDP and Associate Professor, Department of Materials Science and Engineering, Henry Samueli School of Engineering and Applied Science</p>	<p>Color in the ancient world; technology (raw materials, composition, microstructure); weathering and diagenesis of cultural materials; forensic archaeometry; spectral imaging; spectroscopy; synthesis of biomimetic conservation materials.</p>
<p>DAVID SCOTT, Ph.D. 1982. University College London, England.</p> <p>Professor, Department of Art History, Division of Humanities, College of Letters and Science</p>	<p>Ancient metals; the conservation of metallic artifacts; metallography; pigment identification problems; ancient Egyptian colorants; Colombian gold; Ecuadorian platinum and New World copper alloys.</p>
<p>ELLEN PEARLSTEIN, M.A. 1978. Columbia University.</p> <p>Associate Professor, Department of Information Studies, Graduate School of Education and Information Studies.</p>	<p>Ethnographic materials; objects made from organic materials; preventive conservation; environmental protection for collections; lightfastness of natural (undyed) featherwork; standardization of conservation documentation for research access; conservation education.</p>
<p>CHRISTIAN FISCHER, Ph.D. 1993. Louis Pasteur University, Strasbourg, France.</p> <p>Assistant Professor in Residence, Department of Materials Science and Engineering, Henry Samueli School of Engineering and Applied Science</p>	<p>Pre-Angkorian sculpture; ancient ceramics and stone artifacts; characterization and provenance studies; petrography; portable technologies; conservation science; polymers; surface/interface science; geoscience.</p>
ACADEMIC STAFF	AREA OF SPECIALIZATION
<p>VANESSA MUROS, M.A. 1997; M.S. 1999. University College London, England.</p> <p>Conservation Specialist, UCLA/Getty Program on the Conservation of Archaeological and Ethnographic Materials</p>	<p>Archaeological conservation; conservation of metals; field conservation methods; weathering and conservation of archaeological glass; desalination; conservation education and outreach.</p>

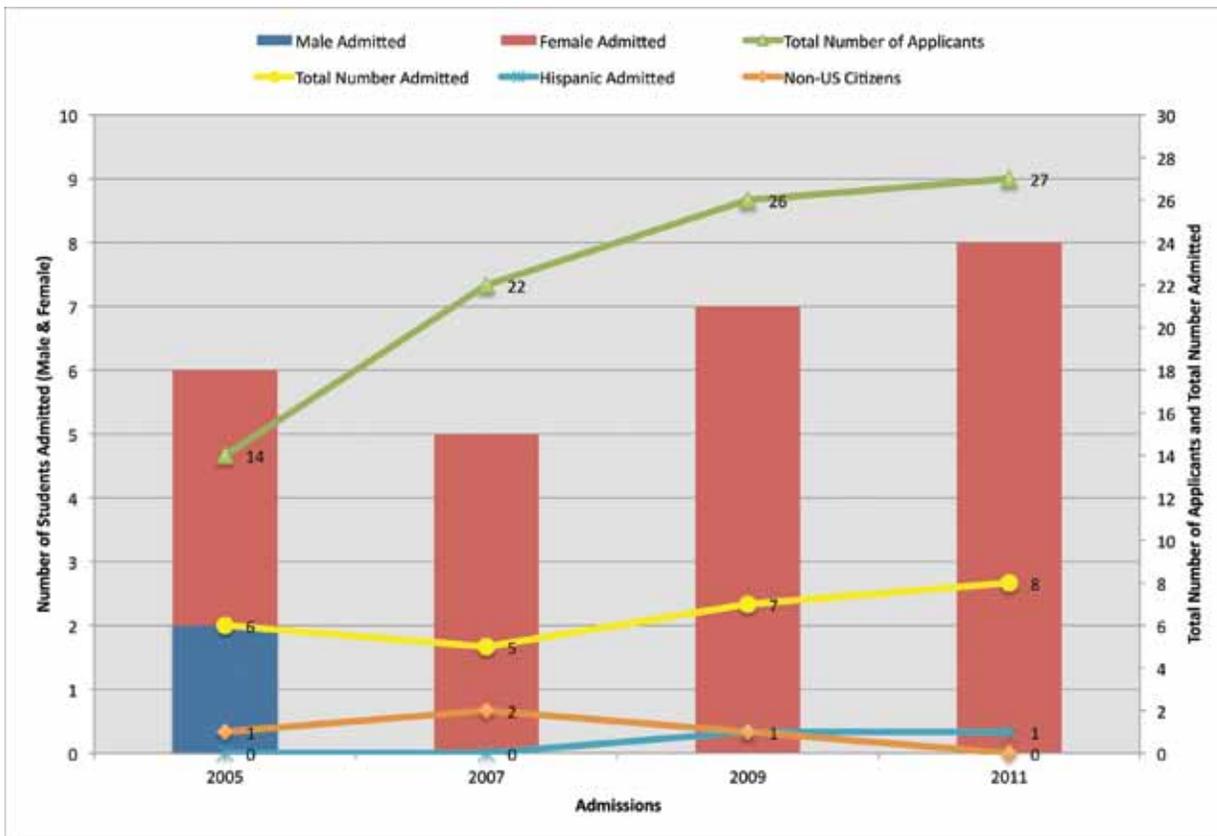


Figure 2. Graph of the UCLA/Getty IDP demographics showing the number of applicants and the number of admitted students, including diversity and minority admissions. Chart: Ioanna Kakoulli.

Following the receipt of an Andrew W. Mellon award in December 2011 (Principal Investigator E. Pearlstein), the UCLA/Getty CAEM IDP welcomed Tharron Bloomfield as the Andrew W. Mellon Foundation Conservation Resident for two years (effective 1 October 2012). Tharron Bloomfield, a conservator specializing in paper (libraries and archives) and organic objects, will be providing instruction in the Department of Information Studies, as well as in the UCLA/Getty CAEM IDP. Mr. Bloomfield, who is Maori, wishes to combine his own indigenous perspective with preservation practices.

STUDENTS

The program accepted the first class in 2005. Figure 2 provides a schematic summary of the demographics of the program applicants and those accepted, and illustrates the admissions of students, including the diversity of the student body. There is clearly an upward trend of well-qualified candidates who apply to the program, with a rise in the ratio from 0.5 to 1

between 2005 and 2011. Since 2005, 92.3% of the candidates admitted were female and only 7.7% were male; 7.7% of the overall admissions were of Hispanic origin; and 15.4% of admissions were from China, Europe, Canada, and Turkey. Also worth mentioning in this context is the diversity among the students' academic backgrounds—ranging from the social sciences and the humanities to the physical sciences.

There were no admissions in 2012 as the program admits candidates only every other year; the next admissions are scheduled for 2013. With the admissions in 2011, the program welcomed eight new students:

1. Brittany Dolph
2. Ayesha Fuentes
3. Geneva Griswold
4. Caitlin Mahony
5. Catherine (Casey) Mallinckrodt
6. Madeleine Neiman
7. Alexis North
8. Carinne Tzadik



Figure 3. Caitlin Mahony consolidates the edges of a group of fragments belonging to a pithos before reconstructing the vessel. INSTAP, Crete. Photo: Kylie Waltz.



Figure 4. Alexis North worked during the summer of 2012 at Tell Tayinat in Turkey, where they found a Neo-Hittite colossal statue, which still preserved the inlays in the eyes. Here Alexis (left) is pictured with the conservator from the Antakya Museum, Turkey, and Tayinat conservator Julie Unruh (right) next to this season's big discovery. Photo courtesy of Alexis North.



Figure 5. Alexis North cleans the eyes of the Neo-Hittite statue with water. Photo: Julie Unruh.

These eight students have successfully completed the first year of their three-year degree program. Given their academic and intellectual strengths, they were encouraged and supported by their faculty and advisors to prepare posters and papers for conference presentations. Brittany Dolph and Catherine (Casey) Mallinckrodt submitted an abstract for a poster at the Southern California Society for Microscopy & Microanalysis, which they presented during the society's biannual meeting, held at Caltech on 3 March 2012; Alexis North and Carinne Tzadik presented papers at the Cotsen Graduate Seminar series together with the Archaeology IDP students; while Ayesha Fuentes, Geneva Griswold, and Madeleine Neiman gave both oral presentations and poster presentations together with some of the other students (including first-year student Brittany Dolph and third-year students Tessa de Alarcon and Dawn Lohnas) at the Association of North American Graduate Programs in Conservation [ANAGPIC] in New York in April 2012. The paper presented at ANAGPIC by Fuentes was also accepted for an oral presentation at the international conference YOCOCU—YOUTH in the COnservation of CUltural Heritage—and was presented during the meeting (18–20 June 2012) in Antwerp, Belgium.

With the help of the Conservation IDP faculty and staff, students were also able to secure placements at the following exceptional sites: downtown Los Angeles for work on the conservation of the Siqueiros mural “America Tropical” (under the supervision Getty Conservation Institute conservators); the museum of Volos in Greece; the Shaanxi Archaeological Institute in Xi’an, China; the Southwest Museum in Los Angeles; the Department of Archaeology and the University of Kelaniya in Sri Lanka; INSTAP in Crete; the Arizona State Museum; the Anchorage Museum in Alaska; Tell Tayinat in Turkey; the Brooklyn Museum; and, the Benaki Museum in Athens, Greece (Figs. 3, 4, 5). Caitlin Mahony was also accepted to participate at the advanced laser-based techniques in art conservation, diagnostics, and analysis at Heraklion, Crete, Greece, 18–22 June 2012 [IESL-FORTH]. This is a European Union-funded program with the latest on laser technologies and their application in cultural heritage conservation (<http://www.iesl.forth.gr/research/course.aspx?id=3>).

On 18 May 2012, the IDP and the Getty Conservation Institute hosted a reception to celebrate the

graduation of our students. The students presented highlights of their conservation internships during summer of 2011 and of their third-year internships at the following: El Zotz, a Maya site in Guatemala; the excavations at Gordion and Tell Tayinat in Turkey; The American Museum of Natural History; the Athenian Agora; the Haiti Cultural Recovery Center; the University of Pennsylvania Museum of Archaeology and Anthropology; the Metropolitan Museum of Art; the Getty Villa Antiquities Conservation Department; the Pitt Rivers Museum at Oxford, England; the Corning Museum of Glass, New York; the Museum of New Mexico; and, LACMA, here in Los Angeles.

They are now embarking on their new careers in conservation at different museums across the country, including the Harvard Art Museums, the American Museum of Natural History, LACMA, the National Museum of the American Indian, the Fowler Museum, the Detroit Institute of Arts, and the University of Pennsylvania Museum of Archaeology and Anthropology.

STUDENT DIVERSITY AND OUTREACH

Student diversity and outreach are very important to the mission of the UCLA/Getty CAEM IDP. Since the beginning the program has been committed to public awareness and has been engaged in activities to broaden participation of underrepresented minority students and to cultivate an interest in and respect for the world's cultural heritage in general. Both faculty and staff have been very active in general outreach activities that include:

- participation of UCLA/Getty CAEM IDP graduate students in the Watts Towers project, Los Angeles, and the Siqueiros mural conservation project;
- lectures at community colleges in both science and humanities departments;
- tours of the UCLA and Getty Villa facilities for undergraduate college students and inner-city schoolchildren;
- participation every year in the Open House Day of the Cotsen Institute of Archaeology—with its various interactive activities for all ages.

- organization of workshops, exhibitions, tours, and seminars in archaeological/ethnographic conservation for the public and for seventh-through twelfth-grade schoolchildren;
- participation in the Getty College Night event at the Getty Villa (with special, behind-the-scenes tours of the UCLA/Getty CAEM IDP training laboratories on the premises);
- participation of faculty and academic/research staff in summer field school and on-site mentoring of archaeological and ethnographic conservation;
- organization of summer extension courses, including programs for Native American students regarding the care of collections through the Tribal Learning Community & Educational Exchange (TLCEE) at the UCLA School of Law;
- multi-listing of conservation courses as graduate and upper-division undergraduate courses in other departments (in the humanities, social sciences, information studies, natural sciences, and engineering);
- organization of workshops and sessions in archaeology and science conferences;
- organization of workshops, sponsored by a grant from the UCLA American Indian Studies Center, that are designed to introduce careers in curation and conservation to Native American audiences;
- inviting diverse instructors and engaging Native American cultural specialists in graduate education;
- faculty mentoring activities of undergraduate students through their home departments;
- participation of underrepresented undergraduate minority students in the program's faculty research projects and laboratories; and,
- maintaining an active Facebook page (<http://www.facebook.com/UCLAGettyProgram>) and blog.

Contrary to the problem facing Science, Technology, Engineering, and Mathematics (STEM) education, recruiting female applicants to pursue conservation graduate studies has never been an



Figure 6. 15 November 2011: College Night at the Getty Villa. IDP graduate students Alexis North (left) and Brittany Dolph dressed in traditional Roman togas (the theme of the night). Photo: Vanessa Muros.



Figure 7. 30 May 2012: First-year IDP graduate student Carinne Tzadik with sixth-grade schoolchildren from St. Lawrence of Brindisi inner-city school during their visit to the UCLA/Getty Conservation Training Laboratories at the Getty Villa to introduce conservation as a profession and career option.

issue—even though a substantial amount of science learning is needed to undertake this field of study. In fact, most of our applicants are female.

ACTIVITIES IN ACADEMIC YEAR 2011–12

During the academic year 2011–12 faculty, staff, and students volunteered at the Getty College Night at the Getty Villa in the various booths aimed at promoting conservation, diversity, and cultural heritage (Fig. 6).

Additionally, our conservation specialist, Vanessa Muros, has been a volunteer educator in the ARC Smart Program, a collaboration between the Los Angeles Unified School District Art and Artifact Collection/Archives and USC’s Archaeology Research Center. On 25 May 2012 Vanessa, together with IDP graduate student Catherine (Casey) Scott Mallinckrodt, organized an educational program at White Middle School in Carson to promote awareness of archaeology and conservation among sixth graders.

On 30 May 2012, several IDP students, led by graduate student Casey Mallinckrodt, organized a hands-on experience for sixth-grade schoolchildren from St. Lawrence Elementary and Middle School. The children visited the Getty Villa and had a behind-the-scenes adventure, where they looked at artifacts under forensic lights and learned about ways to examine and repair or prevent the damage of valued materials (Fig. 7). These children had first-hand exposure to a workday in the career of a conservator. In their thank-you cards, many of them wrote how impressed they were and that they are considering conservation as a career option. Philanthropist Charles Steinmetz wrote in a note to the Chair of the IDP: “I want to tell you what an absolutely wonderful job your students did at our recent Getty visit. They made the kids feel welcome and that conservation is an opportunity open to them. I am in your debt.”

During this past year, Professor Pearlstein has also worked with third-year UCLA/Getty Conservation students and staff at Agua Caliente Cultural Museum to design an online exhibition about conservation of tribal materials, hosted by the museum. Accessible at: <http://www.accmuseum.org/Introduction2>. *

CORE FACULTY OF THE INTERDEPARTMENTAL GRADUATE PROGRAMS, 2011-12



Jeanne E. Arnold (Professor of Anthropology) was elected Honorary Fellow of the California Academy of Sciences in 2012. She is lead author of the new book *Life at Home in the Twenty-First Century: 32 Families Open Their Doors* (Cotsen Press, 2012), a revealing investigation into the material culture of modern American households (with Graesch, Razzini, Ochs). Arnold directed the arm of the decade-long, interdisciplinary, collaborative study that explores how middle-class Californians actually value and interact with their possessions and allocate their time; *Life at Home* is the culmination of that work. Arnold's other primary research addresses Chumash lifeways and craft production on the Pacific Coast. She recently published a study in the *Journal of Archaeological Method and Theory* on apprenticing practices among Channel Islands bead-makers as well as articles in other books and journals on lithic material properties, fused shale projectile points, marine mammals, consumption in modern Los Angeles, and the role of property ownership in political evolution.



Hans Barnard (Adjunct Assistant Professor, Department of Near Eastern Languages and Cultures, and Assistant Researcher at the Cotsen Institute) has worked as surveyor, photographer, and ceramic analyst on projects in Armenia, Chile, Egypt, Iceland, Panama, Peru, Sudan, Syria, and Yemen. Many of these projects were field schools to introduce undergraduate students to archaeology and work in foreign countries. He is currently involved in a project studying the interaction of the Tiwanaku and Wari polities with the local population in Vitor Valley (Peru) as well as in a research project into the agricultural development over time in the Fayum Oasis (Egypt). At UCLA he teaches classes in archaeological science, ceramic analysis, and the archaeology of mobility. His publications include *Theory and Practice of Archaeological Residue Analysis* (Oxford, 2007), *The Archaeology of Mobility: Old World and New World Nomadism* (Los Angeles, 2008), and *The History of the Peoples of the Eastern Desert* (Los Angeles, 2012).



Jeff Brantingham (Associate Professor and Vice-Chairman of the Department of Anthropology) conducts research on paleoanthropology of the Tibetan Plateau, method and theory, evolutionary theory, and simulation modeling. One of his projects is the UC MaSC (Mathematical and Simulation of Crime) Project, which is funded by the Human Social Dynamics Program at the National Science Foundation. The project integrates theoretical, methodological, and empirical work to develop analytical and computational models of crime-pattern formation. Simultaneous development of mathematical and simulation models, as well as empirical testing, will provide a guide for the experimental use of these tools in the social sciences. Also, the interdisciplinary foundation of the project provides a model for collaboration between mathematicians and social scientists.



Aaron A. Burke (Associate Professor of the Archaeology of the Levant and Ancient Israel) is Co-Director of the Jaffa Cultural Heritage Project (JCHP), an interdisciplinary cultural heritage project with a research focus on the history and archaeology of Jaffa. Initiated in 2007, the project is a collaborative effort between the Israel Antiquities Authority (IAA), UCLA, and Johannes-Gutenberg Universität, Mainz (Germany). Following efforts to publish the excavations of Jacob Kaplan in Jaffa (1955-1974), in 2011 the project renewed excavations of the Egyptian New Kingdom fortress on the mound of ancient Jaffa employing a wide array of intensive sampling methods intended to address social interactions between the Egyptian garrison and the region's inhabitants. From 2013 to 2015 these excavations will be funded by the National Endowment for the Humanities.



Jesse Byock (Professor of Old Norse, Medieval Scandinavian Studies, and Viking Archaeology) is Director of the Mosfell Archaeological Project (MAP) in Iceland. MAP is an interdisciplinary research project employing the tools of archaeology, anthropology, history, forensics, environmental sciences, and saga studies. This work is constructing a picture of human habitation and environmental change in the Mosfell region of south-western Iceland. The Mosfell Valley, the surrounding highlands, and the lowland coastal areas are a valley system—an interlocking series of natural and man-made pieces that, beginning with the ninth-century-C.E. settlement of Iceland, developed into a functioning Icelandic community of the Viking Age. A long-term archaeological project, MAP is unearthing the prehistory and early history of the region in order to establish an in-depth understanding of how this countryside evolved from its earliest origins. The Mosfell Archaeological Project has implications for the larger study of Viking Age and the North Atlantic world. Professor Byock has published widely on the society, archaeology, sagas, and history of medieval Scandinavia.



Elizabeth Carter's (Professor of Near Eastern Archaeology and Musa Sabi Term Chair in Iranian Studies 2009–2014) research focuses on the archaeology and history of the Ancient Near East, particularly highland–lowland interaction over the *longue durée* on the Mesopotamian periphery. This has led her to Iran, where her work has been on the Elamites. Most recently she has written on the “Royal Women of Ancient Elam,” in *Extraction and Control: Studies in Honor of Matthew W. Stolper* (W. Henkelman, et al., eds., Chicago: Oriental Institute, forthcoming) and studied the Luristan Bronzes, which she uses as a way of examining the interconnections among Elam, Mesopotamia, and the Zagros mountains in the Late Bronze and Iron Ages.

On the other side of the Fertile Crescent Professor Carter has worked in the foothills of the Taurus Mountains in and around Kahramanmaras, Turkey. She directed the original regional survey (1993–94) and co-directed the excavations at Domuztepe with Dr. Stuart Campbell from 1995 until 2008. More than forty students from the US, Japan, Turkey, Australia, Germany, Italy, and the United Kingdom have received primary field training during the seventeen years of the project. Dr. Carter is working on editing a volume dedicated to the survey results. Her most recent publications on the excavations include “The Glyptic of the Middle–Late Halaf Period at Domuztepe, Turkey” (*Paléorient*, 2010)

and “On Human and Animal Sacrifice in the Late Neolithic” (in *Sacred Killing: The Archaeology of Sacrifice in the Ancient Near East*, ed. A. Porter and G. Swartz, 2012). She is currently working on *Surveys and Excavations along the Syro-Anatolian Frontier I, The Kahramanmaras Survey*.



Ioanna Kakoulli (Chair, UCLA/Getty Conservation IDP and Associate Professor, Department of Materials Science and Engineering) conducts research that intersects traditional and advanced scientific techniques at multiple scales and focuses on reverse engineering processing studying the relation between microstructure and properties to understand ancient technology and trade in antiquity as well as environmental and diagenetic alterations and their effects in the preservation of artifacts. She also focuses on biotechnology and the synthesis of new materials for conservation. One of her projects is the “Biomimetic Methods Based on Soluble Ammonium Phosphate Precursors for the Consolidation of Wall Painting,” funded by the National Science Foundation, Cultural Heritage Science, and the Solid State and Materials Chemistry Program. The scientific approach exploits biomimetic principles to induce the formation of protective hydroxyapatite (HAP) crystals by triggering reactions between the calcium in calcite-rich plaster layers of the wall paintings and ammonium phosphate precursors. The interdisciplinary nature of this research involves professors, researchers, and students from different backgrounds and departments, including conservation, materials science, civil engineering, and bioengineering.



Kathlyn M. Cooney (Associate Professor of Egyptian art and architecture in the Department of Near Eastern Languages and Cultures, UCLA) focuses on ancient Egyptian funerary arts, in particular coffins of the New Kingdom and the Twenty-First Dynasty and issues of craft specialization, socioeconomic value, reception history, and taste change. She is currently working on how Egyptian funerary behaviors changed during times of economic recession and social upheaval. Her book *The Cost of Death: The Social and Economic Value of Ancient Egyptian Funerary Art in the Ramesside Period* appeared in 2007. She is also working on a biography about Hatshepsut, which will appear in 2014.



Richard Lesure (Professor of Anthropology) is a Mesoamerican archaeologist whose research interests include ancient belief systems, social relations, sociopolitical organization, and the conceptual framework of archaeology. His field research has concerned pre-state (“Formative”) societies of Mexico, and he has worked along the Pacific coast of Chiapas and in the highland state of Tlaxcala. Professor Lesure is currently working on questions of scale in the transition from Archaic to Formative in early Mesoamerica. Another long-standing interest is the interpretation of prehistoric art. His recent publications include *Interpreting Ancient Figurines: Context, Comparison, and Prehistoric Art* (Cambridge University Press, 2011) and *Early Mesoamerican Social Transformations: Archaic and Formative Lifeways in the Soconusco Region* (University of California Press, 2011).



Min Li (Assistant Professor of Archaeology of China) received his Ph.D. in anthropology from the University of Michigan in 2008. Focusing on archaeology of early China and maritime archaeology of Asiatic Trade during the thirteenth and seventeenth centuries, Li Min has since 2010 been co-directing a multidisciplinary landscape survey project around the Bronze Age city of Qufu. He is working on a book project entitled *Settling the Tripods on the Central Plains*. At UCLA Li Min teaches undergraduate and graduate courses on landscape archaeology, maritime trade, ancient Chinese civilizations, and archaeological theories.



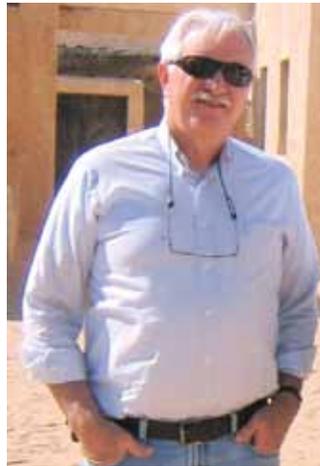
Sarah Morris is Steinmetz Professor of Classical Archaeology and Material Culture in the Department of Classics and the Cotsen Institute of Archaeology. Her training and research interests involve the interaction of early Greece with the Near East in art, literature, religion, and culture, and her material specializations include ceramics and architecture from prehistoric through Classical Greece. Her field work has taken place in Israel, Turkey, Greece, and, most recently, in Albania, where she co-directed the excavation of a Bronze Age and Iron Age burial tumulus (2004–2008), whose results will soon be published. In 2012, she began a new collaborative project at ancient Methone in northern Greece, to prepare the publication and study of a site occupied from the Neolithic through Hellenistic period.



The research and teaching interests of **John K. Papadopoulos** (Professor of Classics and Chair of the Archaeology IDP) include the Aegean and the Mediterranean in the Late Bronze and Early Iron Ages, as well as the Classical and later periods; colonization; the cultural history and topography of Athens; and the interplay of literary evidence with the material record in the study of the past. He has conducted fieldwork widely in Greece, Albania, Italy, and Australia. He recently completed a volume on the Early Iron Age cemeteries in the Athenian Agora and another on the burial tumulus of Lofkënd in Albania. He is currently conducting fieldwork, with Professor Morris, at ancient Methone in northern Greece. He is the author or editor of eight books, eighty articles and some thirty book reviews. His latest volume, *The Construction of Value in the Ancient World*, is co-edited with Gary Urton (Cotsen Press, 2012).



Ellen Pearlstein (Associate Professor, UCLA / Getty Master's Program in Archaeological and Ethnographic Conservation and Information Studies) continues to work in the following research areas: fading behavior and photochemically induced deterioration in feather work; tribal museums and defining values for cultural preservation; effects of environmental agents on ethnographic and natural history materials; reinstating context for museum materials found *ex situ*; and curriculum development within conservation education. Ellen codirects a project at the Getty Conservation Institute entitled "Quantifying Change in Ethnographic Materials with Biocolorants and Structural Colors." She has two projects in collaboration with tribal museums, one involving students with instruction at the Agua Caliente Cultural Museum and the other with the Hibulb Cultural Center at Tulalip, WA. Professor Pearlstein is a Fellow in the American Institute for Conservation, and she is Vice President of the Association of North American Graduate Programs in Conservation.



Dwight W. Read (Emeritus Distinguished Professor of Anthropology and Emeritus Professor of Statistics; Chair, Interdegree Program in Human Complex Systems) recently published *Artifact Classification: A Conceptual and Methodological Approach* (Left Coast Press, 2007), which has been widely reviewed with laudatory comments. His other archaeological publications include a statistical model for relating artifact complexity among hunter-gatherers to risk of resource procurement and frequency of group movement in their annual round, and an article (with Michael Merrill) that presents new, quantitative methods for locating activity areas in archaeological sites. His other research work focuses on the interrelationship between the material and the ideational domains in human societies. This work has led to two books published this year: *How Culture Makes Us Human* (Series: Big Ideas in Little Books. 2012, Left Coast Press) and, with M. Leaf, *Human Thought and Social Organization: Anthropology on a New Plane* (Lexington Press, 2012).



Gregson Schachner (Assistant Professor of Anthropology) directs the Puerco Ridge Archaeological Survey in the Petrified Forest of eastern Arizona. This project explores village formation and changes in mobility practices during two periods of aggregation in the 700s and 1300s C.E. Since 2008, he has led a series of seasons of intensive mapping and full-coverage survey around four of the largest villages in the region. This fieldwork, coupled with re-analysis of museum collections from across the United States, is also producing artifact samples for ongoing compositional analysis to examine patterns of exchange and population movement. Schachner has recently published two books, *Population Circulation and the Transformation of Ancient Zuni Communities* (Univ. of Arizona Press, 2012), and he has co-edited *Crucible of Pueblos: The Early Pueblo Period in the Northern Southwest* (Cotsen Press, 2012).



David A. Scott (Professor, Department of Art History and Founding Director, 2003–11 of the UCLA / Getty Conservation Program) has recently created an entirely new course, "Art: Fakes, Forgeries and Authenticity," which has been drawing in the undergraduates in some numbers. Papers and presentations have evolved from this new course, some of which have already been published. Scott continues to work on the second volume of his self-published (but peer-reviewed!) series on the metallurgy and metallography of ancient metals. The first volume in this series is already selling well on Amazon. He has been engaged in several different studies relating to ancient Chinese mirrors and is currently studying the collections at Scripps College and LACMA. He is working on a variety of projects in addition: African iron from the Mafa; historic steel from Maine; the applications of color metallography; and ancient goldwork from Colombia.



Monica L. Smith (Professor of Anthropology) conducts research on ancient urbanism with a particular focus on the Indian subcontinent, where her work examines how cities developed as centers of economic, social, ritual, and political networks. She also sustains a long-term interest in the archaeology of food, the growth of ancient states and empires, and the use of animal-behavior models to understand human-environmental strategies. She recently completed a long-term research project at the ancient Indian city of Sisupalgarh with her colleague Professor R. K. Mohanty (see article, this volume).



Charles (Chip) Stanish (Professor of Anthropology and Director of the Cotsen Institute), his graduate students, and Peruvian colleagues continue their work in the northern Titicaca Basin of Peru. They have also started a new project on the central Peruvian coast in the town of Chinchá, investigating the early Paracas and Nasca—contemporary cultures in that area. His work with his student Abigail Levine was named as one of the top-ten discoveries of 2011 by *Archaeology* magazine. Stanish recently published a book for a wide audience in the Cotsen Institute's World Heritage and Monument Series, titled *Lake Titicaca: Legend, Myth, and Science*.



Willeke Wendrich (Professor of Egyptian Archaeology) is codirecting a UCLA excavation and survey project in Egypt that concentrates on the landscape around Lake Qarun in the Fayum Oasis, and specifically the development of agriculture. In cooperation with archaeobotanist and codirector René Cappers (Rijksuniversiteit Groningen, the Netherlands) and anthropologist Simon Holdaway (University of Auckland, New Zealand) the project concentrates on the two major periods in which agriculture was developed in this region: the Neolithic and the Graeco-Roman periods. Wendrich is also Editor-in-Chief of UCLA Encyclopedia of Egyptology online, a worldwide cooperation of Egyptologists, archaeologists, linguists, art historians, geologists, and all other disciplines that are involved in research in Egypt. She also is the Faculty Director of the UCLA Digital Humanities Incubator Group and a member of the Cotsen Institute Digital Initiative Committee. In 2011, she assumed the position of Editorial Director and Chair of the Editorial Board of the Cotsen Institute of Archaeology Press. Her latest book is *Archaeology and Apprenticeship, Body Knowledge, Identity, and Communities of Practice*, an edited volume published by the University of Arizona Press.



Lothar von Falkenhausen's (Professor of Art History and Archaeology of East Asia and Associate Director of the Cotsen Institute) interest comprises Chinese archaeology in all its aspects, including connections with other parts of Eurasia. His publication *Chinese Society in the Age of Confucius (1000–250 B.C.): The Archaeological Evidence* won the 2009 Society for American Archaeology Book Award. Professor von Falkenhausen was inducted into the American Academy of Arts and Sciences in 2011. This past year, he was appointed by President Obama to the White House's Cultural Property Advisory Committee (see The Institute in the News, this volume).

FACULTY AND RESEARCHERS OF THE COTSEN INSTITUTE OF ARCHAEOLOGY



Gregory E. Areshian has directed and participated in archaeological fieldwork in the Caucasus, Central Asia, Mesopotamia, and Egypt. Some of his colleagues call him “an anthropological historian who spent more than half of his professional life excavating and surveying archaeological sites.” This is reflected in his publications, which exceed 140 titles in five languages. These works are testimony to the breadth of his interdisciplinary and theoretical interests: from World Systems Theory and social complexity in the Chalcolithic of the Near East to transdisciplinary reconstructions of Indo-European religions, to the archaeology of empires and anthropological studies in social value of ancient technologies. At UCLA he wears multiple academic and administrative hats, simultaneously serving as Assistant Director of the Cotsen Institute of Archaeology and Editor of *Backdirt*, codirecting several research projects as Associate Researcher, and periodically teaching courses on the history and archaeology of the Ancient Near East, the Caucasus, Armenia, Iran, interactions between nomadism and sedentary civilizations of Eurasia, and the “Silk Road.”



Elizabeth (Betchen) Wayland Barber, Visiting Professor at the Cotsen, received degrees from Bryn Mawr and Yale, then taught archaeology, linguistics, cognitive science, and sometimes Greek at Occidental College for thirty-seven years before retiring in 2007. She has worked chiefly on developing new interfaces between archaeology and linguistics (decipherment; archaeology of brain and language; evolution of modes of transmitting information, especially myth, ritual, dance, clothing, and writing), and on the origin and development of textiles and dress in western Eurasia. She is just finishing her sixth book, *The Dancing Goddesses*, which integrates massive East European ethnographic, historical, and archaeological material to trace the origins of European folk dance back to the first farmers of Europe, in the Balkan Neolithic. She is also helping prepare the Fowler Museum’s upcoming exhibition of its magnificent collection of Southeast European folk costumes, organized to show (what else?) their deep archaeological roots. The exhibit opens 9 March 2013. Her favorite hobby is folk dancing.



Marilyn Beaudry-Corbett has conducted many activities with the Institute including sponsoring two pit firings through the Ceramics Research Group at Dockweiler State Beach to enable archaeologists to see a part of ceramics preparation that is usually not seen or experienced during fieldwork. At the Institute’s Open House each year she puts together a display to explain the production of pottery and the various ways we describe ceramics and use them to gain insights into ancient civilizations. She also gives a lecture and demonstration about ceramics in David Scott’s class on archaeology technology.



Laurel Harrison Breece (Professor of Anthropology and Archaeology at Long Beach City College [LBCC]) and Visiting Associate Professor at the Cotsen) received her M.A. and Ph.D. from the Archaeology Interdepartmental Program at UCLA. Her master’s thesis focused on underwater archaeology and the silver collection from the sunken city of Port Royal, Jamaica. Her doctoral dissertation project in Natá, Panamá, was a terrestrial project exploring Spanish colonization. Dr. Breece’s main focus is teaching terrestrial and underwater surveying technologies and engaging in such topics as exploration, navigation, and colonization. She has been a member of the Board of Director’s of the Marine Conservation Research Institute (MCRI) at the Aquarium of the Pacific since 2003, and has been on the Register of Professional Archaeologists (RPA) since 1999. Dr. Breece has a terrestrial surveying program, run in partnership with the Survey Department of the Port of Long Beach, in which students gain hands-on experience using various surveying and mapping technologies. She is also developing an underwater survey program, in conjunction with the LBCC Underwater Robotics Program, in which students learn to build and pilot Remotely Operated Vehicles (ROVs) as a means of surveying for submerged cultural resources.



Shelby Brown (Education Specialist for Academic and Adult Audiences at the J. Paul Getty Villa in Malibu, California, and Visiting Assistant Professor at the Cotsen) is a classical archaeologist and classicist interested in the ways societies, consciously or not, categorize people as “others.” She has published on institutionalized violence and gender bias, including Phoenician sacrificial *tophets*, Roman gladiatorial combats, ways of interpreting ancient art, and feminist art history. As the first Vice President of Education of the Archaeological Institute of America (AIA), she promoted the study of ancient material culture in the pre-college classroom (and presented on outreach strategies to Cotsen Institute of Archaeology graduate students). In 2012 she received the AIA’s Joukowsky Distinguished Service Award. Her current research is focused on combat sports in Greek and Roman private art and on the survival of classical ideals in post-classical depictions of women. She has taught archaeology, Greek, and Latin to all ages.



Marilyn Kelly-Buccellati (Visiting Professor at the Cotsen) always wanted to be a Near Eastern archaeologist. While a graduate student at the Oriental Institute at the University of Chicago, I participated in my first excavation, at Korucutepe in eastern Turkey. After completing my Ph.D. I worked with my husband, Giorgio Buccellati, on ancient Terqa on the Euphrates River. During our ten years there I concentrated on the the ceramics and cylinder seals and impressions on cuneiform tablets. This experience was extremely valuable for the next site we chose, Mozan in northeastern Syria. There inscribed seal impressions on container sealings allowed us to identify the name of the ancient site, Urkesh. Working with graduate students from the US, Europe, and Syria has been very gratifying. We have trained a number of local assistants both in archaeology and in the use of several computer programs. The Cotsen Institute has been a powerful “home” in Los Angeles, both intellectually and personally. The many lively discussions over coffee in the lab of my lifelong friend and Institute colleague Ernestine Elster have made Los Angeles and the Cotsen a locus of “family” warmth, inspiration, and reinvigoration.



Brian N. Damiaata is Visiting Assistant Professor at the Cotsen Institute of Archaeology. He received B.A. degree in Geophysics from S.U.N.Y. at Geneseo and M.Sc. and Ph.D degrees in Geological Sciences–Geophysics from the University of California at Riverside. He makes a living by consulting to archaeological, environmental, and engineering firms as well as to government entities. This past year he conducted geophysical surveys at archaeological sites in the U.S. (California, Massachusetts, and New Mexico), the island of Dominica, and Iceland. Last summer he spent his seventh field season in either Iceland or Greenland. For the current work, he is co-PI on a new NSF-funded project directed by Douglas Bolender of the Field Museum, Chicago. This project focuses on the use of ground-penetrating radar (GPR) and new multi-sensor electromagnetic instruments to detect Viking Age cemeteries and unmarked burials, as part of broader collaborative research of early Christianity being conducted with Icelandic colleagues. Further recent and future work includes geophysical survey and consultation with John Papadopoulos in Methone Greece, and with Jo Anne Van Tilburg on Easter Island.



Paola Demattè (Associate Professor of Chinese Art and Archaeology in the Department of History of Art and Visual Culture at the Rhode Island School of Design, Providence, and Visiting Associate Professor at the Cotsen) holds a *Laurea* in Chinese Language and Literature from the Università degli Studi di Venezia (Italy) and a Ph.D. in Archaeology from the University of California, Los Angeles. Dr. Demattè specializes in the Neolithic and Bronze Age archaeology of China and has written on the origins of Chinese writing, early urbanism, archaic jades, and on the rock art of China. She also has a keen interest in religion and East–West contacts. In this context, she has curated an exhibition at the Getty Center and coauthored a volume on Sino-European exchanges from the sixteenth through the nineteenth century (*China on Paper*, Getty Publications, 2007).



Ernestine S. Elster (Visiting Assistant Professor at the Cotsen) began graduate school at UCLA, where she had earned her B.A. in 1947, when her youngest son was ten years old. Her return to UCLA after almost twenty years came at the urging of a college friend who herself had gone back for graduate studies. I protested that “I’d not the slightest idea about what to study” . . . and she replied, “Ah, but on campus you’ll open a door you never saw before to find something that will completely capture your imagination.” And that is exactly what happened—for when I reentered UCLA I was in the Education Department, only to open a door to a class in European archaeology. But behind this door was a most charismatic lecturer and archaeologist, Marija Gimbutas, and, in retrospect, it is no surprise that by the next year I had transferred out of education—my imagination completely captured by the prospect of a “career” in archaeology.



Janine Gasco (Professor of Anthropology, CSU, Dominguez Hills, and Visiting Professor at the Cotsen) continues her research on long-term land-use patterns in the Soconusco region of Chiapas, Mexico. This research integrates archaeological, historical, and ethnographic data to identify traditional agroforestry practices from pre-Columbian times to the present. In 2011 she conducted archaeological excavations at the postclassic site of Gonzalo Hernández in the Soconusco as part of the Izapa Regional Settlement Project. Gonzalo Hernández was a disperse rural settlement—a kind of site rarely found in the Soconusco. The data from this site will allow us better to understand both the internal organization of rural communities and how these communities were integrated into regional political systems. Dr. Gasco is the author of “Cacao and Commerce in Postclassic Mesoamerica” in *Children of the Plumed Serpent: The Legacy of Quetzalcoatl in Ancient Mexico* (V. Fields, J. Pohl, and V. Lyall, eds.), and she is a coauthor of *Prehistoric Settlement on the South Pacific Coast of Chiapas, Mexico* (with Barbara Voorhies and Paul Cackler).



Claire Lyons, acting Senior Curator of Antiquities at the J. Paul Getty Museum, and Visiting Assistant Professor at the Cotsen, earned a Ph.D. in Classical Archaeology at Bryn Mawr College. At the Getty Villa, Claire has organized exhibitions on Grecian Taste and Roman Spirit: *The Society of Dilettanti* (2008), *The Chimaera of Arezzo* (2009), *The Aztec Pantheon and the Art of Empire* (2010), and the forthcoming *Sicily: Between Greece and Rome* (2013). A specialist in the archaeology of pre-Roman Italy and Sicily, she excavated at Murlo, Corinth, Metaponto, and Morgantina. In addition to publications on the history of archaeology and cultural patrimony policy, she is the author of *Morgantina: The Archaic Cemeteries* (1996), and she co-edited *Naked Truths: Women, Sexuality and Gender in Classical Art and Archaeology* (with A. Koloski-Ostrow, 2000), *The Archaeology of Colonialism* (with J. Papadopoulos, 2002), and *Antiquity & Photography: Early Views of Ancient Mediterranean Sites* (2005).



Jerry D. Moore (Ph.D., UCSB; Professor of Anthropology at California State University, Dominguez Hills, where he was the 2003 “Outstanding Professor of the Year,” and Visiting Professor at the Cotsen) is an archaeologist who works in Peru, Baja California, and the western United States. “My research,” Moore says, “explores the complex connections between human societies and their cultural landscapes, including constructed and natural environments.” Moore has written *Architecture and Power in the Ancient Andes: The Archaeology of Public Buildings* (1996, Cambridge), *Cultural Landscapes in the Prehispanic Andes: Archaeologies of Experience* (2005, Florida), and *The Prehistory of Home* (2012, California), and he has coedited *The Prehistory of Baja California: Archaeology of the Forgotten Peninsula* (2006, Florida). Moore is the editor of *Nawpa Pacha: Journal of Andean Archaeology*. In 2011 he excavated a workshop in Peru where beads were manufactured from the highly valued shells of the thorny oyster (*Spondylus* spp.), the only such workshop known from a provincial center in the Inca Empire.



Marianna Nikolaidou (Visiting Assistant Professor at the Cotsen) studied classics, archaeology, and anthropology in Greece and England and received a Ph.D. in Prehistoric Archaeology from the University of Thessaloniki in 1995. She has taught archaeology, classics, and gender issues at UCLA Extension and at California State University, Los Angeles. Her fieldwork and publications encompass Aegean prehistory, early Greek history, and the early history of the Levant. Research interests focus on religion and symbolism, technology with an emphasis on ceramics, adornment, and gender, and the history of archaeology. Recent publications include a coedited volume on *Spondylus* in prehistoric shell technologies (Archaeopress 2011) and two review articles on gender in Aegean prehistory for the *Blackwell Companions to the Ancient World* series (2012). Currently, she is working on fabric analysis of Chalcolithic/Bronze Age ceramics from Tell Mozan, Syria (Mesopotamian Laboratory, CIOA) to investigate the technological choices of the potters involving raw material, crafting procedure, and the function of the ceramic products.



Sandra Orellana (Professor Emerita, Department of Anthropology, CSU Dominguez Hills, and Visiting Professor at the Cotsen) began her career in anthropology as an ethnohistorian, focusing on the Tzutujil Mayas of Guatemala. She did many years of fieldwork in the Tzutujil area and conducted research in the archives in Guatemala City and in the Archives of the Indies in Seville, Spain. This resulted in three books: *The Tzutujil Mayas*, *Indian Medicine in Highland Guatemala*, and *Ethnohistory of the Pacific Coast of Guatemala*. Later she became interested in the ancient Mayas of Yaxchilán, Mexico—particularly in Structure 23, famous for its beautifully carved lintels. Although many scholars have discussed these lintels, a good understanding of the monuments did not exist. Dr. Orellana conducted research on the lintels and the building for several years in an attempt to interpret them and to discover the affinity between the carved lintels and Structure 23 and their relationship to other buildings at Yaxchilán. This study will be published in a festschrift to Dr. H. B. Nicholson, who taught in the Anthropology Department at UCLA. Since 1996 she has also been studying the costume of Old Kingdom Egypt, particularly faience funerary bead-nets; she hopes to demonstrate that these garments did not suddenly appear in the late Fourth Dynasty but were one of several manifestations of an Egyptian design dating back to predynastic times. For this research she has visited many Old Kingdom

sites in the vicinity of Cairo and studied museum collections in the United States, Europe, and Egypt. She is currently analyzing the data for future publication.



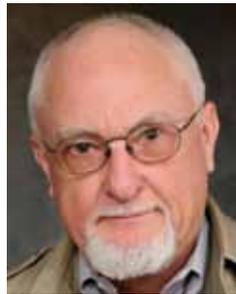
John Pollini (Professor of Classical Art and Archaeology at USC, and Visiting Professor at the Cotsen) received his Ph.D. from UC Berkeley in Ancient History and Mediterranean Archaeology. He taught at Johns Hopkins University, where he also served as curator of the Archaeological Museum. At USC (since 1987) he has been Chair of Art History and Dean of the School of Fine Arts, and is presently Director of the “Visual Culture of the Ancient World” initiative. His honors and awards include a Guggenheim Fellowship, two ACLS and two NEH fellowships, life membership in the German Archaeological Institute, and a Whitehead Professorship at the American School of Classical Studies at Athens. He has excavated in both Turkey (Aphrodisias) and Italy (Ghiaccio Forte, Gravisca, and now at Ostia Antica). Besides numerous articles and reviews, he has authored four books and edited another. His latest book, *From Republic to Empire: Rhetoric, Religion, and Power in the Visual Culture of Ancient Rome*, will appear in December 2012.



Judith Porcasi (Visiting Assistant Professor at the Cotsen) continues twenty years of support of the Cotsen Institute’s Zooarchaeology Laboratory and UCLA’s ongoing *Pimu Catalina* Island Archaeology Project, which includes analysis of previously unstudied collections held by the Catalina Island Museum. In recent years her specialized studies of prehistoric coastal California archaeofaunas have produced insight into intensive maritime hunting of dolphins by occupants of the southern Channel Islands, as well as exploitation of shellfish, sea otters, giant ocean sunfish (*Mola mola*), short-tailed albatross, the extinct flightless goose (*Chendytes lawi*), and comparative exploitation of large mammals such as deer in relation to small mammals such as rabbits. Studies of Mexican archaeofaunas have produced findings of frog consumption and changing pre-Hispanic-to-colonial dietary patterns.



Katherine Strange Burke (Jaffa Cultural Heritage Project, and Visiting Assistant Professor at the Cotsen) began her academic career oriented toward the Red Sea, as seen in her Ph.D. dissertation “Archaeological Texts and Contexts on the Red Sea: The Sheikh’s House at Quseir al-Qadim” (University of Chicago 2007). She retains her interest in coastal sites with her current work on ceramics from Jaffa on the east coast of the Mediterranean. Dr. Burke is the medievalist for the Jaffa Cultural Heritage Project and as such has been focusing on building a ceramic typology of Jaffa for the Early Islamic, Crusader, and later Islamic (Mamluk) periods, using the previously unpublished finds from excavations by Jacob Kaplan, as well as those from more recent excavations by the Israel Antiquities Authority. She has been awarded research grants for this research from the National Endowment for the Humanities and the Foundation Max van Berchem. Dr. Burke has researched, excavated, and traveled in Egypt, Israel, Jordan, Lebanon, Syria, and Turkey.



R. E. Taylor (Professor Emeritus of Anthropology at the University of California, Riverside) was from 1974 to 2002 the director of the UCR Radiocarbon Laboratory. In addition to his Visiting Professor affiliation with the CIOA, he is a Visiting Scientist in the UCI Keck Carbon Cycle Accelerator Mass Spectrometry (AMS) Laboratory. Dr. Taylor received his Ph.D. in Anthropology from UCLA, undertaking his dissertation research in the UCLA Isotope Laboratory of Nobel Laureate Willard F. Libby; he also held an NSF Postdoctoral Fellowship in the UCLA Department of Chemistry. His research has focused on the application of physical science techniques in archaeological research (archaeometry). He was involved in early applications of the use of AMS technology in ¹⁴C dating. He received the Society for American Archaeology 2004 Fryxell Award for Interdisciplinary Research.



Jo Anne Van Tilburg is the Director of the Rock Art Archive, which—under her leadership—received the 2001 California Governor’s Award for Historic Preservation. Her major field project there is a spatial and

correspondence analysis of rock art symbols collected at Little Lake Ranch in the Rose Valley, California. Van Tilburg is also Director of the Easter Island Statue Project (www.eisp.org), an archaeological inventory and excavation of monolithic statues (*moai*). Her research interest addresses the integration of symbolism and structure and the complex ways in which humans employ cultural resources, social practices, and ancient aesthetics to relate to and alter, shape, and impact the natural landscape. Van Tilburg has served on numerous CIOA committees as well as the National Landmarks Committee, U.S. National Park Service Advisory Board. In 2009 her Easter Island project received a major grant from the Archaeological Institute of America’s Site Preservation Committee.



Alexei Vranich, Visiting Assistant Professor at the Cotsen, spent the 2011–12 academic year writing and editing the research on the Bolivian site of Tiwanaku (to be published by Cotsen Press), and he continued to develop and expand his recent project in the city of Cusco, modern UNESCO World Heritage Site and former capital of the Inca Empire. This research is being coordinated through the Smithsonian’s National Museum of the American Indian in Washington, D.C., as part of the preparation for an

upcoming exhibit on the Incas scheduled for 2014. Alexei spent summer 2012 in Peru with generous support from the Cotsen Institute and remained for the entire fall quarter to conduct field research and teach at the university in Cusco as part of his recent Fulbright award.



Thomas A. Wake (currently the Director of the Cotsen Institute’s Zooarchaeology Laboratory and with UCLA since 1996), a native Angelino, received his doctorate from UC Berkeley in 1995 after studying zooarchaeology and ethnicity at Fort Ross in northern California. He has worked with several CIOA core faculty, graduate students, and researchers on projects in China, Egypt, Peru, Mexico, Guatemala, and California. For the past eight years, Wake has been running an archaeological field school in Caribbean coastal Bocas del Toro, Panama, at a site called Sitio Drago. Findings from this project have illustrated that the region was much more dynamic and far less isolated than previously thought. Wake recently (2010) received a grant from the National Science Foundation to study how Formative Period vertebrate subsistence practices relate to political cycling in the Pacific coastal Guatemala/Mexico borderlands region.

Supporter Spotlight

The Case of Curious Charlie: An Interview with Charles Steinmetz

KRISTINE MARTIROSYAN-OLSHANSKY¹

“The best part about selling the company was that I finally had the time to do the things I had wanted to do for years,” comments Charlie. “This is what you dream about. I have always been interested in archaeology, but while I was at the [Anderson] Business School I had no idea an archaeology research center and graduate program existed at UCLA. At the time there was a real disconnect between the Business School and the University.” As a long-time member of the Director’s Council of the Cotsen Institute of Archaeology (CIOA) at UCLA, Charles (Charlie) Steinmetz has worked vigorously to bridge the interdepartmental gaps at UCLA and between UCLA and various public educational organizations in Southern California. Charlie’s nonprofit involvement with UCLA began in 1999 with an endowment of a chair in classical archaeology, the position currently held by Professor Sarah Morris. With the supplemental resources provided by income from the endowment, the chair-holder can undertake advanced research, fund graduate and undergraduate assistantships, and create new teaching initiatives that contribute to academic discourse and provide valuable training to future scholars.

Charlie’s interest in archaeology developed at a young age, sparked by visits to local museums with his mother. “I remember seeing the King Tut exhibit for the first time in the 1970s and I was mesmerized. The level of Egyptian sophistication and artistry was unbelievable.” His interest in archaeology never



Charlie Steinmetz. Photo: Patty Civalleri.

waned, and after selling Tiernay Metals in 1999 he had time to pursue this interest. He began to attend lectures and seminars hosted by CIOA, and he soon found himself in a pupil’s desk learning about the Mycenaean civilization through a UCLA extension course. In the fashion of a true graduate student, Charlie augmented his classroom education with fieldwork. He joined Charles Stanish at the excavations on the Island of the Sun, on the border between Bolivia and Peru, where he obtained hands-on experience in fieldwork, which typically involves travel, learning to work in unfamiliar and challenging environments, a high level of organization, and patience. Charlie has also worked with Sarah Morris and John Papadopoulos at Lofkënd, Albania; with Willeke Wendrich and Hans Barnard in Egypt; and with Gregory Areshian in Armenia.

¹ Cotsen Institute of Archaeology, UCLA.



Charlie Steinmetz at the National History Museum in Yerevan, Armenia. Photo: Patty Civalleri.

It was during one of his field trips that he began to interact with graduate students and soon recognized the need for support for graduate-student travel. “In archaeology graduate students need to travel frequently and in order for them to obtain the best education possible in the shortest amount of time, they need to be able to go to the field more often.” In 2005 with a generous gift to the Cotsen Institute, Charlie established the Steinmetz Research Travel Fund at CIOA. To date, more than thirty travel grants have been awarded to graduate students affiliated with the Archaeology Graduate Interdepartmental Program for field research in China, India, Israel, Armenia, Turkey, Peru, and Egypt. The benefits of the Steinmetz Travel Fund reach beyond the doors of the Cotsen Institute. Outreach to Southern California public schools is an important part of the fund, and recipients of the award are required to speak at local primary schools about archaeology and their own research. During their presentations graduate students try to educate young students about the wide array of topics

studied by archaeologists and how archaeological investigations can teach us about past cultures. The presenters show students exciting images and real archaeological artifacts from study collections to ignite their curiosity and provoke questions.

Charlie’s support of graduate education is only one phase of an ambitious agenda. He is directly involved in more than a dozen public and charter schools in order “to bring the fun and discovery of archaeology to inner-city children and to make reading and learning relevant. What I see in schools today, particularly in middle schools, are bored students. We need to make education exiting again, to help these students develop curiosity.” Charlie believes that instigating a desire for knowledge is instrumental in promoting higher education and breaking the cycle of poverty. “One way to kindle this fire in young students is to get them involved, to encourage them to become active participants. The Open House does just that.” During its annual Open House, the CIOA opens up to groups of middle and high school students who spend the

day visiting laboratories and archives, listening to lectures by distinguished scholars, and conversing with both faculty and graduate students. In addition to his involvement with the Cotsen and UCLA, Charlie is also a member of the governing board of the Archaeological Institute of America [AIA], where he serves on the Financial Committee, Development Committee, and the AIA Site Preservation Committee; additionally he serves on the UCLA/AIA Preservation committee, the UCLA Library, Dana Point Ocean Institute, and is active in numerous other organizations.

To promote higher education by sharing his passion for archaeology with inner-city students, Charlie actively seeks out other supporters of literacy programs in the region's communities and brings donors together with schools and organizations that are most in need of financial support. But financial need is not the only issue: "I like to work with the most underperforming schools that have the best leadership. A good principal is key. A good principal, no matter the environment, attracts talented and passionate teachers." Charlie believes that "you can't change the world by just giving money. You have to change the world by changing people. When we approach a new grantee, we want to know what their real needs are, what their problems are, what needs the most immediate attention, and what is going to help the kids the most in the long run. We are not interested in funding just this or that. Every school and every situation is different; you cannot adopt a cookie-cutter approach to education." In order to truly make a difference he gives where and when it counts. For one public school in Southern California, the donation came in the form of five thousand dictionaries. For a Catholic school the donation allowed the school to hire and train high school students to tutor K-3 students. The model was suggested to Charlie by two elementary school teachers, and with Charlie's support, several pilot projects were implemented. It proved to be an extremely efficient and effective model that was adopted by numerous private educational organizations and literacy programs in Southern California, and it has enjoyed tremendous success over the past ten years.

"The Institute is a unique place for promoting scholarship and learning. It brings together great thinkers from many departments, including Anthropology, Classics, Art History, Environmental Studies,

The Cotsen Institute trains future intellectual leaders of higher education, develops cutting-edge research, and builds bridges between academics and the general public. This is what makes it a unique place.

Materials Science and Engineering, Near-Eastern Languages and Cultures, as well as others. This collaboration is fundamental for training effective leaders and scholars. There is also a good sense of community between the professors and the students, which always benefits education. The Institute is also very good at communicating the benefits of work in the field to the public through the different programs they have, such as the Open House, public lectures, and the many volunteer opportunities for high school students. It has been a lot of fun being involved with the Institute, learning about archaeology, and helping to bridge the gap between different programs at the university level. It is my hope that we can continue growing a supportive community around the Cotsen Institute and see a lot more people who are interested in archaeology both at UCLA and in the Los Angeles area. The Institute trains future intellectual leaders of higher education, develops cutting-edge research, and builds bridges between academics and the general public. This is what makes it a unique place. The importance of the Institute needs to be very visible. *

Alumnus Spotlight

Interview with James Mallory

CONDUCTED BY BRETT KAUFMAN¹

Jim Mallory recently retired from Queen’s University Belfast, where he was Professor of Prehistoric Archaeology in the School of Geography, Archaeology, and Paleoecology (GAP). His can easily be described as one of the most distinguished careers in archaeology achieved by a graduate of UCLA. Mallory received his Ph.D. in 1975 and since then has gone on to publish influential books and articles on topics ranging from Neolithic and Bronze Age Europe, the origin and spread of Indo-Europeans, and the Bronze Age of Xinjiang and Central Asia, to radiocarbon dating methodologies.

I had the good fortune and pleasure to interview Jim about his original interest in archaeology, his experiences during the early years of the Cotsen, the “New Archaeology,” past and present research, his recollections of Marija Gimbutas, and the state of interdisciplinary research as he sees it.

BK: What brought you to UCLA and how would you describe your experience here?

JM: In my final year at Occidental I decided that there was no way I was going to spend the rest of my life in a library, which seemed to be in store if I continued with my major in history. I had also done a minor in anthropology and so I talked with Scott Littleton, who was professor of anthropology at “Oxy,” and he suggested that I consider the Indo-European Studies program at UCLA. I arranged to see Marija Gimbutas about the program. I’m afraid I can barely recall our first meeting (a desk covered with reams of illustrations, lots of amber). The program required a total retooling, but the idea of

becoming an archaeologist specializing in European prehistory coupled with studying historical linguistics, some ancient languages, and comparative mythology really appealed to me, so I decided on UCLA. My shift to archaeology was eased by landing the best summer job I ever had—ranger archaeologist at Mesa Verde. (I had spent the previous three summers as a graveyard-shift janitor at Disneyland.) Even though the job did not require much more than serving as a tour guide, the ten days of training (visiting both prehistoric and modern pueblos) and spending the entire summer in southern Colorado gave me a real love of the American Southwest.

I arrived at UCLA in 1967. In addition to some courses in Indo-European languages (Sanskrit, Old Irish, Middle Welsh, and Greek) I took whatever archaeology courses were available in the Indo-European Studies program. Marija was on sabbatical

¹ Cotsen Institute of Archaeology, UCLA.

that year so I studied general European prehistory and Iron Age archaeology with her replacement, Lilli Kaelas from Göteborg, who was shocked to discover that many of her students were not as “civilized” as she had expected because they could not read the course textbook, Sigfried de Laet’s *La Préhistoire de l’Europe*. I cannot recall who else was then doing the archaeology major in Indo-European Studies, but I do recall that Shan Winn, who also started at the same time and was far brighter than me, eventually shifted from linguistics to archaeology.

BK: Please describe how your academic views formed and evolved at UCLA. How was the path of your career framed by studying at UCLA?

JM: When I came to UCLA, archaeology courses were self-segregating and so there was little cross-over between the cultural historical approach one received in Indo-European Studies and whatever lurked in the anthropology department. As I had available to me a free course, I enrolled in the graduate course on “Archaeological Theory and Method,” which was taught by Jim Hill. I was still very much a novice in archaeology and didn’t know what to expect. Jim had assigned only one textbook: Carl Hempel’s *Philosophy of Natural Science*, which, as I



Obre, Bosnia, 1967: Janko, Ilija, Gene Sterud, Meho, Jim Mallory, and Jay Stewart.



Akhelleion, 1973: Jim Mallory—suitably dirty.

recall, begins with a totally engrossing account of Ignaz Semmelweis’s attempt to uncover the causes of childbed fever in a Vienna hospital. A great story, but to the uninitiated more than a bit removed from archaeology as I was, I had to learn why we were reading it. A good chunk of the course seemed to be taken from Jim’s Ph.D. on Broken K Pueblo; at least my summer at Mesa Verde had prepared me for the archaeology of the Southwest. Except for myself, the class was otherwise entirely composed of anthropology grads, only one of whom I knew (Ed Slater had also worked at Mesa Verde). This class made a major impression on me for a variety of other reasons.

To begin with, in 1967 “New Archaeology” was still new and I think there was an intellectual excitement about archaeology that is nearly impossible for today’s students to imagine. Back then we had no doubt that archaeologists were at the absolute



Donegore, Ireland, 1985: Mallory, doing experimental archaeology in a Neolithic ditch and trying to batter his way through basalt with an antler pick.

pinnacle of the social sciences: we were surveying the entire purview of human existence and we would scientifically analyze the archaeological record to work out the actual laws of human behavior throughout time. A misspent youth (and middle age) reading science fiction always made me feel that we were pursuing similar goals to Hari Selden, who worked out the course of human future history in Isaac Asimov's *Foundation* trilogy. Fueled with

a couple of six-packs of Coors and the ability to let words, like nomothetic, trip off the tongue like we knew what they meant—we actually believed it. Of course, we were talking total bollocks and, in retrospect, our arrogance was really stomach churning, but it was fun while it lasted.

Second, some of Jim's approach definitely rubbed off on me. I still can't resist attacking any problem without at least proposing multiple hypotheses that I then try to test. It may not be the "Big Science" as we understood it back then (I have a son who did his philosophy degree at Trinity and delights in quoting Wittgenstein's dismissal of logical positivism), but it still seems to me the best way to organize discussion, keep track of the logic of any argument, or expose any of my own preconceived biases. Anyway, I have just looked at the two most recent papers I have in press, and they are both entirely constructed as exercises in hypothesis testing. The irony that a student of Marija Gimbutas has always been a fellow traveler of the New Archaeology never ceases to amuse me.

Finally, Jim's course was marked solely on the basis of a single research paper, so I decided to tackle the problem of Irish origins. This was my first foray into trying to deal with both archaeological and linguistic evidence. I still have the paper today (when I reread it, I cringe with embarrassment), but it started something I have returned to from time to time: now, after forty-four years, I have finally managed to finish on my Apple Mac what I started on my 1935 Royal Standard—a book, *The Origins of the Irish*, that should be out early next year.

At the end of that year Lilli Kaelas was to recommend one student from Indo-European Studies to join Marija on her excavations in Bosnia. I was the lucky one—the rest were anthropology post-graduates—and so I set off for Yugoslavia and was fortunate enough to receive my field training there from Gene Sterud, Marija's field director. After the excavation I flew to Britain where I had about ten days to kill before flying home, so I made my way around Ireland and Scotland. Hitchhiking out of Galway one Sunday morning I got a lift from Paddy Healy, who was on his way to meet up with Michael Duignan (the Professor of Archaeology at Galway) for a bit of fieldwork. About thirteen years later I would be publishing my first article on Irish soil as part of Duignan's *Festschrift*. I also went on to visit

New Grange—there were only three of us there to take the tour, which, in deference to the other two visitors, was delivered in French.

I had originally started out as an Iron Age specialist, concentrating on the La Tène with a healthy dose of Celtic languages, but the season in Bosnia sold me on the Neolithic, and I subsequently worked on Marija's excavations on Neolithic sites as a student in Greece (Achilleion) and as a postdoctoral field director in Italy (Lagnano da Piede), and I have always regarded myself as basically a Neolithic archaeologist. Some people have imagined I am a linguist: I'm not, and I have the professors to prove it.

BK: You were at UCLA at about the same time as the establishment of the Institute of Archaeology. Do you have any recollections from then?

JM: The Institute was in the planning stages in 1969 and that was the year I took a three-year sabbatical in the army. I returned to graduate studies in 1972 on the eve of its formal installation. My memory is hardly perfect for events so long ago, but I think I can still recall the announcement that there would be an institute that would unite everyone studying archaeology at UCLA. I vaguely recall a meeting and, sometime afterward, cursing the whole "institute concept" because it involved a new requirement: we all had to write yet another research essay. At the same time I was taking Jim Sackett's course on the history of archaeology (he may rest assured that, in every course I have given on the subject, I championed the cause of P. C. Schmerling and Boucher de Perthes!) and I had an essay due for him, too. I had started it on the history of the Indo-European homeland problem, but decided this would probably run better as the Institute essay that I had to do for Marija, so I wrote on a different subject for Jim's class. I submitted the Indo-European homeland essay to Marija and never got it back. I learned afterwards that she had passed it on to the newly founded *Journal of Indo-European Studies*, and it was published in its first issue in the spring of 1973. That same year I completed my Ph.D. exams for Indo-European Studies and needed a dissertation topic. Although I had started as a Celtic archaeologist, then shifted to the Balkan Neolithic, the essay on the history of the Indo-European homeland problem

wetted my appetite for tackling the most difficult problem in Indo-European research. I've been at it ever since. In short, I managed to turn a less-than-desirable requirement by the Institute into a career, and I have to wonder what might have happened if I had not switched the essays around. I not only got a dissertation topic out of it, but twenty-seven years after my first publication, I wound up as editor of the same journal.

The Institute managed to provide a general forum for everyone in archaeology. However, I should mention that there was another common archaeological institution that I have fond memories of—the Archaeological Survey. To undertake its mission, it always needed trowel-fodder and, to keep my hand in, I would join the others who found themselves either walking power lines in the desert or scouring sieves for olivine beads at Malibu. I also seem to recall weekly dinners in the old building that housed the survey, and, just before it was knocked down, the last survivors of the old Survey were photographed. I think that photo must still be hanging up somewhere (Ernestine Elster, who knows everything, would know).

BK: Can you please share any recollections you have of Marija Gimbutas (in the field, lab, classroom, etc.)?

JM: Where does one begin? First of all, I dealt with two Marija's during my graduate studies. The first one was the author of *The Prehistory of Eastern Europe* (1956) and the mammoth *Bronze Age Cultures in Central and Eastern Europe* (1965). The courses I took from her provided superb overviews of all the main archaeological cultures of Neolithic and Bronze Age Europe. One felt obliged to try to emulate her learning by being able to recount the architecture, technology, economy, and burial practices of any culture, including being able to draw a quick sketch of the ceramics. It may have been the very old-fashioned cultural-historical approach that was despised in my New Archaeology class, but it did prepare me well to sift through the literature of all the various regional archaeologies of Europe. Through her ability to read a wide range of languages and provide comprehensible summaries, Marija was always a lumper rather than a splitter—she set the bar really high for her students.

When I returned from the army to take up my studies again, I arrived with the term in session and decided to audit one of Marija's new courses on gods and goddesses. The agenda had changed, for Marija had become increasingly interested in the religious beliefs of Neolithic Europe. I can still recall her presiding over a class, seated at the head of a table, and passing around masses of photographs of female figurines. When she told us to keep an eye out for the "crawling uterus," Ray Sidrys and I looked at each other as if we had just been caught in the women's lingerie department. I think that was the last class I audited, but my connection to Marija grew even closer.

After a few months I needed a new place to live and along with Jeff Jones, who was doing his Ph.D. in anthropology, I came to live in a bungalow below Marija's house in Topanga Canyon, paying the rent partially in coin and partially in labor. This meant I was also conveniently on hand for Marija's fantastic parties, where I got to meet such luminaries as James Mellaart. Marija had ways of charming her guests into performing, and I can still recall the evening she cajoled both Giorgio Buccelatti and Thorkild Jakobsen into singing their respective (Italian and Danish) national anthems.

Marija once admitted to me that she was amused by the number of people who could not get their heads around the vast quantity of archaeological literature that she seemed to consume in preparing her books. She assumed that anyone with any sense would realize that you start and often end with the conclusions. When asked why she wrote such massive books as *The Bronze Age Cultures*, she said it was because she felt she didn't know enough about the subject and that writing a book was the best way to learn. I think she was absolutely right: I've done it myself.

Living on Marija's estate also landed me my job. Sometimes when she was away I would be in charge of her house, and one day I dealt with a call from Hans Seuss at La Jolla. He had arranged a radio-carbon conference and had a guest from Ireland, Professor Martyn Jope, who needed a place to stay in Los Angeles. I took care of Martyn and his wife at Marija's for a few days and, to make a long story short, wound up replacing him when he was on sabbatical a few years later. I came to Belfast in 1977 for a one-year stint; it's now been thirty-five years.

BK: How do you perceive interdisciplinary studies, such as the bridge between social sciences and humanities, or linguistics and archaeology?

JM: I have always seen myself as primarily a prehistorian who employs any means available to get a better handle on the past. Because I have spent my entire career in a department of archaeology *and* paleoecology, employing evidence from the physical and biological sciences has always been second nature. But because of my UCLA background and interests, I also tend to employ linguistics when the problem demands; naturally, this is driven by a specific literary or linguistics issue. For example, from time to time I have dealt with the realia of the Ulster Cycle of tales. I was drawn to this originally because Kenneth Jackson had once described them as a "window on the Iron Age" (i.e., the medieval Irish monks had preserved within their literature tales that were culturally, in terms of both material culture and behavior, anchored in the Iron Age). This suggested that after Greece and Rome, Ireland preserved Europe's oldest literature, a repository of a pagan view of the past. When I examined all the evidence for material culture in the 70-odd Ulster tales and compared the evidence with the archaeological record, it was clear that nothing in the tales actually had to derive from the Irish Iron Age; any of it that could be narrowly dated was clearly medieval, and elements of the Irish Iron Age that should have been reflected in the literature, if it had been composed then, were absent. A spin-off of this research was that I have also spent years excavating sites associated with Ulster's literary or mythic past, especially in and around its ancient capital, Emain Macha (Navan Fort).

The other area, of course, involves tracing the dispersal of languages in prehistory, particularly the Indo-Europeans from their homeland to their various historical seats. There are two areas that I am particularly interested in. The first is the simple ground-proofing of reconstructed languages. A historical linguist can reconstruct the general phonetic shape and meaning of words by comparing cognate words between closely related languages that lead back to some ancestral form. Linguist Mary Haas once wrote that a reconstructed proto-language was "a glorious artifact, one which is far more precious

than anything an archaeologist can ever hope to unearth.” I know where she is coming from: reconstructing the vocabulary of, say, a Bronze Age people does at times seem to get deeper inside their brains than archaeology, although archaeologists have a real role to play here as well. We are the only ones who can determine how words associated with flora, fauna, and material culture, for example, fit into time and space (i.e., we take a linguistic abstraction and narrow down the range of both where and when a proto-language was spoken).

The other area I am most interested in is how (or whether) an archaeologist can track the course of languages on the ground. Generally our approach has been so crude that unless we have cataclysmic change in the archaeological record, we feel unable to discern language shift. After all, it is hard enough tracing migrations but establishing whether the ephemeral evidence for some form of cultural intrusion resulted in language shift, compounds the

difficulty many times over. But, like the naïve New Archaeologists of my youth, I still can’t help but think that this bridge is not too far away and that we could vastly improve our approach to such problems.

BK: And what are your current plans?

JM: I am trying to downsize my ambitions and half my library is on Amazon, but there are still some problems I will continue to wrestle with. I spent about a month last summer in Xinjiang with Victor Mair (of the University of Pennsylvania) and we are planning another book on the Bronze Age populations of the Tarim Basin. I have two sins of my youth—unpublished excavations—that need to be cleared away as well, and there is always more to do regarding both the Indo-Europeans and the early Irish. Since serendipity has got me this far, I can’t help but think there will be a few more surprises as well. *



Altai, Xinjiang, China, 2011: Jim Mallory and Victor Mair visit a “deer stone.”

Report from the Field

Scaloria Cave: Found, Lost, and Found Again

ERNESTINE S. ELSTER¹

INTRODUCTION

In previous *Backdirt* issues I've told the story of the cave found in 1931 (Quagliati 1936), then lost until the excavations in 1965 (Tinè 1975), and found again and jointly excavated in 1978 and 1979 by a team led by the late archaeologists Marija Gimbutas of UCLA and Santo Tinè of the University of Genoa. But when the analysis and write-up were never followed through, the cave was lost again. This brings us into a new century as Scaloria was found anew by a team of scholars I have the honor of heading. We are from UCLA, Cambridge, and Genoa Universities, and along with additional specialists from Rome, Liguria, Exeter, Lecce, Budapest, London, and Florence, we've been studying the Scaloria archives and collec-



Figure 1a. Left to right: Patrizia Garibaldi (Genoa), Maryanne Tafuri (Rome), Antonella Traverso (Genoa), and Tamsin O'Connell (Cambridge) at the Scaloria Conference, 21–22 May 2012, Cambridge, England.

tions in order to prepare the final report for publication (Figs. 1a, b). Stored are human bone, including skeletons, plus pottery, stone and bone tools, faunal remains, shells, and examples of nonlocal raw materials, etc. (Fig. 2). Taking up the history and material culture of an aging abandoned site provided us with the opportunity to apply twenty-first-century methodologies. Indeed this whole project is an example of one of archaeology's challenges—to bring to light those many neglected excavations and their dusty material culture still languishing in museums and archives the world over. The story of Scaloria Cave is, in every way, a cautionary tale.

SOUTHEAST ITALY: APULIA, TAVOLIERE, AND GARGANO

Follow the map to Apulia, in southeast Italy, and imagine in your mind's eye an almost flat, low landscape stretching east, slowly rising to join the mountainous cliffs of a promontory that itself juts into the waters of the Adriatic (Fig. 3). Together the plain of Tavoliere and the promontory of Gargano hold the



Figure 1b. Left to right: Ernestine Elster (UCLA), Eugenia Isetti (Genoa), John Robb (Cambridge), Chris Knüsel (Exeter), and Donatella Pian (Genoa) at the Scaloria Conference, 21–22 May 2012, Cambridge, England.

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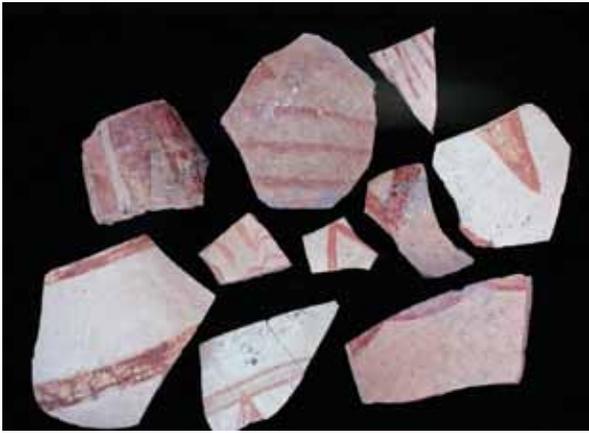


Figure 2. Examples of Scaloria painted sherds. Photo taken 1979.

key to Grotta Scaloria, itself located on the sloping limestone plateau where plain meets promontory.

The Tavoliere is thought of as the breadbasket of southeast Italy. In fact, bread baked with flour from Puglia is prized and advertised in bakery windows as far away as Venice. Furthermore, Tavoliere is archaeologically famous for its numerous ditched Neolithic villages, which were totally unknown until discovered unexpectedly in the RAF air photos taken during WW II, which revealed curious circular marks on the plain (Jones 1987; Tinè 1983). Once the war was over, investigators realized that these were the “boundary” lines surrounding villages or hamlets established by Tavoliere’s first farmers. More than three hundred such settlements are now known!

THE GROTTA IN THE UPPER PALEOLITHIC AND MESOLITHIC

The cave had been entered much earlier by hunters likely seeking shelter. Both the Paleolithic and Mesolithic visitors set fires and we have four radiocarbon dates, two for the Upper Paleolithic (11,040 +/- 190 B.P. and 10,790 +/- 210 B.P.) and two from the Mesolithic (9560 +/- 140 B.P. and 9030 +/- 120 B.P.), all on carbon recovered from the remains of the fires. The concentration of animal bone revealed species extinct by the Neolithic period.

GROTTA SCALORIA IN THE NEOLITHIC

The cave’s most intensive use, and, specifically, its use for ritual purposes, was by a group or groups of Tavoliere villagers who discovered the cave around 5800 B.C.E. cal. In the large Upper Chamber (50 x 100 m) they deposited their dead (Fig. 4). By explor-



Figure 3. Map of area: Apulia, Tavoliere, Gargano. (1) The Tavoliere Plain. (2) Scaloria Cave. (3) Flint mines on Gargano Coast. (4) City of Manfredonia. (5) The area of Puglia. (6) Hvar Island. (7) Tremiti Archipelago.

ing a low, winding passage, and crawling in semi-darkness, they entered the dark mysterious Lower Chamber with its stalactite-studded ceiling. Marked with stalagmites, its floor held pools of water, and here the villagers brought their Neolithic pots and placed them to collect the dripping waters of the stalactites, a ritual practice described by Santo Tinè as a “cult of waters” (Fig. 5). The villagers actively used Scaloria Cave for several hundred years (5600–5200 B.C.E. cal.), and it was entered intermittently until about 3500 B.C.E. cal. when earth movements, tumbling the concrete-like *crosta*, closed the entrance. Based on the radiocarbon determinations and on pottery chronology, the cave was lost to its prehistoric villagers and not found again until modern times.



Figure 4. Skeleton in burial position, upper chamber. Photo taken 1978.



Figure 5. Lower chamber with stalactites, stalagmites and Neolithic vessel placed to catch stalactitic solution. Photo taken 1978.

The *crosta* not only closed the entrance to the cave but also protected it and all the ancient material culture left behind. It remained sealed for thousands of years, until 1931 when a team of men were sent from the city of Manfredonia to excavate for an aqueduct to bring water to the mountain villages on Gargano. When the smoke cleared from the explosives, placed and fired to budge the *crosta*, the men were astonished to see a *crévasse*, which opened to a large underground chamber. Its floor was littered with human bones, broken pottery, tools of stone and bone (Figs. 6, 7). Scaloria was found again (Quagliati 1936).

“NEW WINE IN OLD BOTTLES”

The challenge has always been to discover how we might use or ask new questions or apply fresh methodologies to the materials excavated over thirty years ago. Two sets of data illustrate this research: (1) the human skeletal evidence studied by the team led by John Robb of Cambridge, and (2) the chipped-stone tools from the 1979 excavation season on which I report.

(1) Samples from human remains revealed in the Upper Chamber, were submitted by John Robb to the Oxford Radiation Laboratory for collagen dating, which produced fifteen dates, many of which cluster around the mid-sixth millennium. These dates join the twelve earlier determinations (obtained by Marija Gimbutas in 1980) from the La Jolla Laboratory based on charcoal, which also cluster tightly around 5600–5200 B.C.E. cal. (except for the Upper Paleolithic and Mesolithic determinations as described above). Significantly, the sixth millennium was represented by close to two-dozen dates produced by both labs.

We were interested in learning as much as possible about these Neolithic people: what they ate—the balance of marine, animal, and vegetable protein in their diet—and how they treated their dead. Two avenues of research were initiated: first, the study of burial ritual by examination of bone fragmentation and cut marks to determine whether or not there was ritual processing of human bone



Figure 6. The opening to Scaloria Cave, reinforced in 1978.



Figure 7. Scatter of bone, sherds in upper chamber. Photo taken 1978.

after death such as cannibalism, de-fleshing, ritual dismemberment with John Robb and Chris Knüsel leading this study; and, second, we initiated research on isotopic evidence (led by Maryanne Tafuri and Tamsin O’Connell) to see if the Scaloria group had greater variation in diet than do the villagers from the Tavoliere. Differences in elements in the bone can determine “family” groups connected to the cave and/or outsiders drawn to the rituals carried out at Scaloria.

Although these studies are not yet final, we do know that a strontium signature appears more regularly on bones with cut marks than on bones that are unmarked. This could mean that whatever perimortem action is represented by the cut marks, “local” folk were more likely to be so treated than those from elsewhere. The isotopic study of human dentin is also identifying diet; “you are what you eat” becomes more than a modern health slogan—it is demonstrated by these isotopic analyses.

(2) Chipped-stone tools were manufactured from flint sourced to several mines on Gargano’s north-eastern coast (Figs. 8, 9). Recent research has chemically identified the flint from the various mines (D’Ottavio 2001; Tarantini and Galiberti 2012). I questioned how this raw material was circulated from its source to the Scaloria group and indeed to the farther Tavoliere villagers—through whose or what agency. Here I am dealing with one of the most contemporary of archaeology’s questions: Neolithic social networking.

My research indicated that the Tavoliere herders were described as following a system of transhumance in Classical times and even earlier (Jarman et al. 2009: 167); although the Gargano offers few arable resources, it is suitable for summer grazing on small, isolated areas of the upland (Jarman et al. 2009: 216–17). Chipped-stone scatters reported from the interior are perhaps the only evidence of transit camps supporting summer grazing for animals based in the winter on the Tavoliere (Jarman et al. 2009: 217). Was there an organized network of summer herders in contact with Gargano miners to bring the flint down the line from the promontory sources? If so, the herders may have used the Gargano mountain passes and transitory camps, arriving at the Grotta Scaloria, and further redistributing the flint obtained from the miners to the Tavoliere and even farther afield. Although Gargano



Figure 8. Chipped stone blades and flakes of Gargano flint.

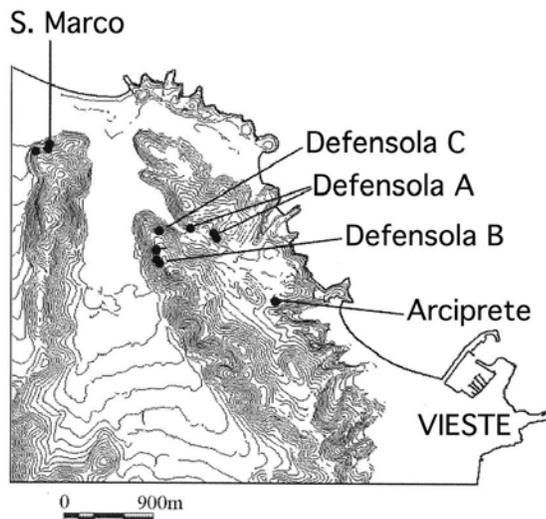


Figure 9. Map of coastal Gargano with locations of flint mines (from F. D’Ottavio 2001: Fig. 1, p. 115).

has been described as having “difficulties of the interior terrain,” it would pose no substantial obstacles to herders familiar with the physical features of the promontory (Delano Smith 1987: 114).

Another route proposes a network of seamen and miners who may have used the Adriatic to sail or raft from the Gargano coast around the promontory to the harbors near present-day Manfredonia

to bring Gargano flint to Scaloria and the Tavoliere. More challenging seafaring is in evidence with reports of Gargano flint on the Adriatic Tremiti island of San Domino (Palma di Cesnola 1967: 354, 386) and the island of Hvar as well as coarse impressed wares from sites of the Greek Early Neolithic recovered in Apulian sites (Bass 1998: 165; Spataro 2002: 11; Robb 2007: 163). Such enterprises were certainly challenging and the seamen had to be familiar with Gargano's winds and tides, seasonal weather, and coastal harbors. Until and unless we have clear evidence of interior camps dating to the time period involved and/or seacraft or harbors, etc., we cannot claim actual identification of the network of agents of transfer; but agents there were.

PRELIMINARY SUMMATION

The various scientific studies using the human skeletal materials are yielding very important and provable results about what life was like for the Scaloria "cavers": what they ate; how long they lived; how far afield they ventured and what for; and how they treated their dead. One of the most ubiquitous of archaeological materials, chipped stone tools, expose trade and/or exchange for Gargano flint and offers us a valuable clue in unraveling the social network of the group who used Scaloria Cave. The many and various reports in the forthcoming Scaloria Cave Monograph are equally active in pouring new wine into old bottles; we learn much by "reading" these material "documents" and taking advantage of twenty-first century methodologies; please stay tuned. *

ACKNOWLEDGMENTS

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Report from the Field

The Jaffa Cultural Heritage Project: The 2011 Season

AARON A. BURKE¹

In 2011 the Jaffa Cultural Heritage Project renewed excavations on the ancient mound of Jaffa (Tel Yafo) as part of a new phase of research with excavations planned for the period between 2011 and 2015. This is the culmination of the pilot-project phase of the collaboration, which began in 2007 with UCLA participation in joint salvage excavations with the Israel Antiquities Authority (IAA) in the Ganor Compound, included research excavations within the Qedumim Square visitor's center in 2008 and 2009, and a study season in 2010 for the Kaplan Publication Initiative. The fundamental objective of the renewed excavations is the exploration of

the Late Bronze Age Egyptian gate complex first excavated by Jacob Kaplan between 1955 and 1958 (Kaplan 1956, 1960). This excavation area, Area A, was thereafter commonly identified as the Ramesses Gate area, owing to the discovery in 1956 and 1958 of stone fragments of the monumental gate façade inscribed with the titles of Ramesses II (Fig. 1). While later excavations were conducted by the IAA (1985) and Tel Aviv University (1997, 1999), none of these efforts culminated in the renewal of long-term research excavations, which was the overarching goal of the 2011 season.

Within the framework of the renewal of excavations two main research concerns emerged. First, as a result of the Kaplan Publication Initiative, which is addressing the unpublished excavations of Jacob

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Figure 1. Inscribed gate facade fragments of Ramesses II discovered in late 1950s. Kaplan Archive.

Kaplan, it became clear that a number of important questions regarding the earlier excavations of the Late Bronze Age Egyptian gate complex could only be resolved through renewed excavations, due to the incomplete nature of the early excavation records and the time that has elapsed since those excavations. Second, due to those earlier excavation records it is apparent that the gate area provides an excellent context for the articulation of social interactions between Egyptians (the garrison army) and Canaanites (the earlier inhabitants of the site and the native population within the surrounding coastal plain). Our study of Kaplan's excavation records since 2007 suggests that during the life of the Egyptian garrison, which occupied an approximately two-hectare area atop the mound from circa 1460 to 1150 B.C.E., a number of factors reveal a period fraught with social, political, and military tensions. Material testimonies to these interactions include several site-wide destructions as well as the presence of mixed assemblages of Egyptian and Canaanite ceramics that indicate a degree of interaction that would superficially seem at odds (Burke and Lords 2010). Nonetheless, when compared to other imperial contexts, a degree of social interaction, often varying over time, is not unexpected. In this respect, the context provided by the Egyptian garrison fortress at Jaffa, perhaps the largest in Canaan, is entirely unique since no other logistical port and garrison belonging to the New Kingdom empire has been identified along the coast of Israel. By employing modern collection strategies and methodologies within the new excavations, such as residue analysis and specialist study of floral and faunal remains, the new excavations are beginning to articulate a basis for the nature of the interactions between the Egyptian garrison and the indigenous populations in Jaffa over the three hundred years of Egyptian imperial control.

Excavations in 2011 under the direction of Aaron Burke and Martin Peilstöcker lasted from July 10 to August 11, and were supervised by UCLA graduate students: George Pierce served as primary field supervisor, and Heidi Dodgen, Brett Kaufman, and Amy Karoll as square supervisors. GIS data collection was carried out by Krister Kowalski (Heidelberg University) and Stefan Mehlig (I3, Mainz). Excavation work was undertaken by undergraduates from UCLA, master's students from Johannes-Gutenberg Universität, Mainz, and a few volunteers. Three

primary phases were encountered within the stratigraphic sequence exposed earlier by Kaplan.

The first major phase included the recording and removal of a Persian Period city wall foundation, first exposed in 1955 and conserved by Kaplan toward the end of the 1956 excavation season. The removal of this wall was necessary in order to access the latest phases of the Late Bronze Age stratigraphic sequence immediately below it; the phases were preserved across the gate's passage from north to south. To its east this sequence had been removed by Kaplan and to the west by Tel Aviv University. Thus, the remaining sequence merited a close reexamination because of its gradual decay following its reexposure in 1985. The removal of the Persian foundation wall, which included detailed recording of stone size, course by course, as well as the collection of all datable artifacts, revealed that this foundation had been deeper in this location, principally because this was the original location of the gate complex, which had left a depression—as is often the case—and thus a deeper foundation had been required to insert the wall in this area. Our excavations revealed, however, no evidence that this wall was part of a gate complex here, leaving open the question of the location of the gate in the Persian Period.

Immediately below the wall, we encountered the gray bricks (ca. 40 x 20 x 10 cm) of the south tower of the last Egyptian gate that functioned from the thirteenth to early twelfth centuries B.C.E., which was the second major phase excavated in 2011. Although already exposed by both Kaplan and Herzog (Tel Aviv University), our excavation revealed that the feature consisted of two sub-phases. The construction of the earlier of the two phases is most likely to be attributed to Ramesses II (1266–1200 B.C.E.), who also added monumental stone door-jambs on both sides of the gate inscribed with his titles (Kitchen 1993: 228). As exposed by Kaplan, the passage of this gate (18 m long and 4 m wide) featured an impressive cobble foundation overlain by a fairly clean shell and compacted dirt floor. Unfortunately, the six fragments of Ramesses's façade that originated with this phase (four remain unidentified), all of which had been excavated by Kaplan, were identified in secondary contexts, namely the second sub-phase of this gate. The latter appears to have been refurbished later, presumably after Ramesses II's reign; it appears to have followed an attack on the garrison, albeit an attack less severe

than earlier destructions—judged on the basis of the limited ash encountered; there would be *no* basis for encountering ash and debris such as was found within the gate, an area with a great deal of traffic. The most likely association for this destruction is the period of insurrection in the southern coastal plain recorded for the reign of Merneptah (1196–1187 B.C.E.), the suppression of which was celebrated thereafter on his monumental stele, though without direct reference to Jaffa.

Following the destruction, the gate's restoration resulted in a narrowing of the passage owing to the addition of mudbrick buttresses against the earlier remains of the gate tower and a cobblestone curb, as well as the reuse of Ramesses II façade fragments as orthostats and sub-floor foundations, as Kaplan had encountered (Fig. 2). The constructional character of these additions was slip-shod by comparison to the Ramesses II gate, in which bricks of regular size were employed in a predictable pattern. Despite the excavation of the façade fragments by Kaplan, he mistakenly assumed that these fragments must have originated from an earlier phase of the gate two meters below their actual findspots since he did not identify the two sub-phases to this gate located at approximately the same elevation. Consequently, his assumption obscured some important details regarding the development of the gate complex and the correct association of layers within the gate with occupational remains immediately to the south of the southern gate tower, and their assignment to specific archaeological phases and association with certain historical events.

Based on the cleaning of the eastern section of this remaining stratigraphic sequence across the gate, we identified what potentially appear to be two additional and major phases of the Egyptian gate. The first of these consists of a red-brick wall against which the gray bricks of the thirteenth-century gate had been set. In 2011, however, this feature was only identified from the surface and in the section and has yet to be excavated. Based on attempts to associate it with the schematic section drawing from the Kaplan archive, it is quite likely that this gate tower was part of the fourteenth-century B.C.E. (Amarna period) gate, which will be excavated in 2012. Nonetheless, after cleaning the section it is not yet possible to be certain of the gate passage associated with this feature. Below this assumed gate, however, and aligned with the Ramesside gate, are the remains of

another red-brick gate tower that featured a passage of identical dimensions to that of the latest gate two meters above it. The destruction associated with this gate was clearly visible in the section that was cleaned. From the section cleaning more than two-hundred very small beads were recovered—an unexpected find in this context—in addition to a cedar wood fragment that was part of the roof of the structure to the south that had collapsed to the north into the passageway. While this phase of the gate remains to be excavated in 2012, the results of a meticulous study of the Kaplan excavation records in an attempt to correlate ceramic finds with this context, and initial excavation indicates the probable association of this destruction and associated gate phase with the major site destruction encountered in 1958 to the south of the tower, (published preliminarily by the project in Burke and Lords 2010). Part of the basis for this suggestion was the relocation of a unique and early Late Cypriot pithos type (dated to ca. 1400 B.C.E.) within this destruction layer (Fig. 3). Resumption of the excavations in 2012 will permit the testing of the suggested association when additional ceramics can be recovered.



Figure 2. View of 2011 exposure of Ramesside gate, looking east, with baulks left in place. The second subphase is distinguished from the first by the addition of a row of poor-quality mudbrick to the gate passageway above the edge of the cobble foundation. The earliest, unexcavated phase, consisting of bright red mudbricks 2 m below the Ramesside gate can be seen on the right side of the photo.

In addition to the renewal of excavations, a major feature of the 2011 season was the inclusion of specialist analyses of both previously excavated samples, when they exist, and newly excavated samples. The newly excavated samples were obtained through one-hundred-percent flotation of materials derived from surface contexts, specifically occupational and destruction debris. Samples were distributed to shell, faunal, fish, botanical, and dendrochronological experts for analysis. In addition to providing datable remains, the results from these studies will be integrated into the research program addressing social interaction between Egyptians and Canaanites in Jaffa. In the main, these samples relate to food consumption, which holds an important place within the framework of studying ethnicity and social interaction. In addition to the above lines of data, residue sampling will assist in identifying food production and consumption patterns in Jaffa once complete or restorable vessels are encountered.

In addition to the research activities of the project relating to the Late Bronze Age contexts, a number of other projects were carried out in 2011. Preliminary analysis of the ceramics from Kaplan's excavations in Area A in the 1970s by UCLA staff revealed a number of important contexts for the study of the so-called "Lion Temple," dated to the Late Bronze Age, the contexts of which will be reconstructed in 2012. Dendrochronological samples were also taken from Ottoman structures around the lower town by Brita Lorentzen of Cornell University's Tree-Ring Laboratory. Islamic and Crusader ceramics from IAA and Jacob Kaplan's excavations were studied by Katherine S. Burke (see the Research Notebook section in this issue). Preliminary discussions for a geoarchaeological study of the site's development, particularly for the identification of the ancient port or lagoon to the east of the site, were also undertaken, with plans to begin work in the 2012 season.

Since its inception in 2007 the Jaffa Cultural Heritage Project has provided a successful framework for archaeological collaboration concerning this important site. The appearance in 2011 of the first volume of the newly inaugurated series (Peilstöcker and Burke 2011) has demonstrated the potential of this collaboration for both the study and stewardship of Jaffa's cultural heritage (see esp. Burke and Peilstöcker 2011). Celebrating five years of



Figure 3. Cypriot pithos (MHA 2155) excavated by Jacob Kaplan in destruction debris of the earliest Egyptian gate passage.

research, in July 2012 the project will continue excavation of the earlier phases of the Egyptian fortress to be followed by a staff study season in August. As with earlier seasons, we anticipate important results from our continued efforts. *

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Report from the Field

Timeless Insights from an Ancient City: Research at Sisupalgarh, India

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INTRODUCTION

Like the Great Wall of China, the ancient city of Sisupalgarh represents so much labor investment that it can be seen from space. First occupied more than 2,500 years ago in the ancient land known as Kalinga on the eastern coast of India, the settlement is framed by a perfectly square fortification wall and eight equally-spaced gateways that surround a complex of monolithic pillars at the center of the site (Fig. 1). Its architecture and remarkable degree of preservation make it one of the most distinctive ancient cities in India and the focus of a long-running joint project between UCLA and India's Deccan College.

Our team's principal research questions went well beyond "how old is it?" to engage with some of the most vital new themes of archaeological research. What can archaeological investigations tell us about the way people live in urban areas? How did people interact in the crowded but exciting spaces of the first cities? What was the relationship between civic authorities and urban dwellers? Sisupalgarh's long occupational history provides abundant evidence that life in ancient cities was not so different from what we experience today.

In order for cities to come into existence, people had to put aside their wariness of strangers and

engage with others for even the most basic daily activities such as getting provisions. It was a big leap of faith for people to start to live far from their agricultural fields and depend on a supply network to provide them with food, but the fact that cities appear over and over in the archaeological record indicates that our species may well be "hard-wired" to live in large groups whenever possible. This factor opens our eyes to the possibility of seeing cities not as a problem, but as a solution to many contemporary areas of concern, such as human-environmental dynamics and the mitigation of social tensions.

The site of Sisupalgarh was first investigated by Professor B. B. Lal in 1948. The availability of

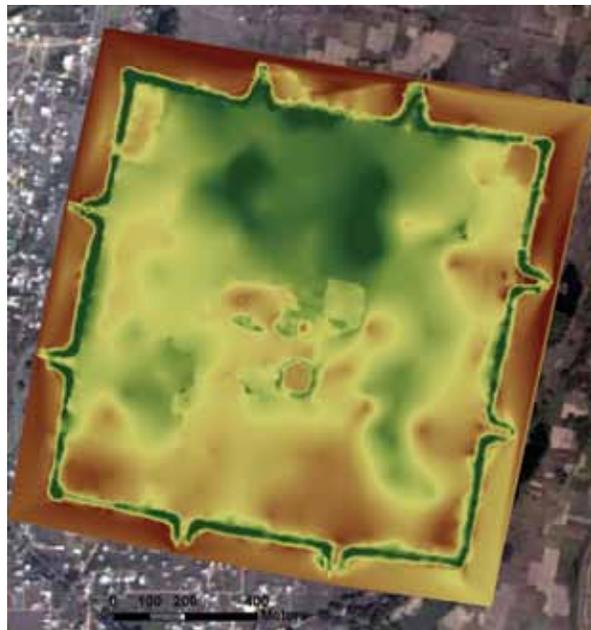


Figure 1. Topographic map of Sisupalgarh showing fortification walls and central architecture. Map: G. Greene.

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Nonarchaeologists often are surprised to learn that ancient remains can still be found on the surface of the ground, but surface survey is one of the first steps of an archaeological project. Excavations are time consuming and focus on only a very small portion of a site, while a comprehensive survey can effectively collect data on an entire ancient settlement.

prior data placed our own project on a firm footing and provided an essential bridge for the use of more modern techniques available today, such as radiocarbon dating and remote sensing. Our project has used the “complete package” of archaeological research, including mapping, surface collections, horizontal excavations of ancient architecture, and deep digs to natural soil in order to capture details about the site’s initial occupation. Thanks to a successful collaboration with the University of Akron and California Polytechnic State University–Pomona, our project has also pioneered the use of nonexcavation geophysical surveys and GPS satellite mapping in India.

SURFACE SURVEY

As many archaeological projects do, this long-term research program had a modest beginning. An initial reconnaissance was to have taken place in 1999, but the eastern coast of India was struck by a terrible

cyclone that devastated the region. In early 2000 the destruction was still much in evidence. However, archaeologists can always find a silver lining when Mother Nature strikes: uprooted trees revealed underlying archaeological deposits in many places where they might otherwise have been obscured, a factor that helped to confirm the presence of significant research potential.

For the next three years, a small team returned each season to conduct systematic collections of the artifacts on the site’s surface. Nonarchaeologists often are surprised to learn that ancient remains can still be found on the surface of the ground, but surface survey is one of the first steps of an archaeological project. Excavations are time consuming and focus on only a very small portion of a site, while a comprehensive survey can effectively collect data on an entire ancient settlement. Through survey researchers also get to know the surroundings and climate that ancient people had to negotiate. Working in the extreme conditions of the pre-monsoon summer where fieldwork after ten o’clock in the morning was curtailed because of concerns for sunstroke, we appreciated how ancient people would have had to schedule both their farm work and their construction work for the more hospitable winter months.

Additionally, survey is a good way to interact with the people who live on and around ancient sites and to benefit from their insights and discoveries. Local villagers were certainly curious about why we would come such a long way to pick up broken pottery and stones from agricultural fields, but were generous about letting us cross their land and take samples from a variety of contexts. Farmers in their daily conversations expressed an age-old concern for having enough water for their crops, and over the course of the project we often worked side-by-side with people preparing fields for planting. Herders also traversed the landscape with goats or sheep, reminding us of complementary economies of domesticated plants and animals. Even in a relatively populated area there was still traditional foraging, and tribal hunters would occasionally go by with a lizard in a gunny sack or fish in a glistening net.

The most important result of the project’s survey component was the confirmation of ancient habitation throughout the site. The impressive fortification walls around the city were not just an “empty” container for a few high-ranking residents but encircled

a fully functional city packed with people, markets, and reservoirs. The similarity of artifacts throughout the site also led to the perception of an “urban style” that was shared by a large proportion of the inhabitants. The results from the survey enabled us to envision the potential of further and more detailed research.

MAPPING THE SEEN AND THE UNSEEN

Our mapping strategies throughout the survey stage of the project included the entire range of high-tech and low-tech approaches to the archaeological record. With the philosophy that “low-tech always works,” we initiated the mapping of surface architectural remains using pencil and paper, which enabled the entire team to participate in drawing what they saw on the ground (Fig. 2). This approach also is more applicable to the kinds of work that local students are likely to do for their own thesis research, and the low-tech approach is one that we continued to support in the subsequent years of research.

Because we were mapping on a large scale, we also took advantage of more advanced methods of field recording, including equipment provided by the Cotsen Institute such as theodolites and a Trimble GPS backpack unit that permitted topographic mapping at sub-meter accuracy. The maps enabled us to calculate the volume of the monumental architecture, such as the encircling rampart, and to appreciate the phenomenon of water management at the site. Water is abundant in this part of India, particularly after the summer monsoon season, and the site is located in the delta of the Mahanadi River, which would have allowed local inhabitants access to natural watercourses. However, the development of ramparts would have curtailed the daily access to river water—a problem solved by creating reservoirs and wells within the city. Particularly in the hot, dry summer season, these wells would have been an important supplemental source of water, and they would have been essential in times of siege or drought.

Another important component of mapping consisted of mapping the unseen. For the past twenty years, archaeologists worldwide have used a variety of techniques to examine the subsurface through instrumentation initially developed by geologists (particularly petroleum geologists, who are *very* interested in knowing what is underground before they

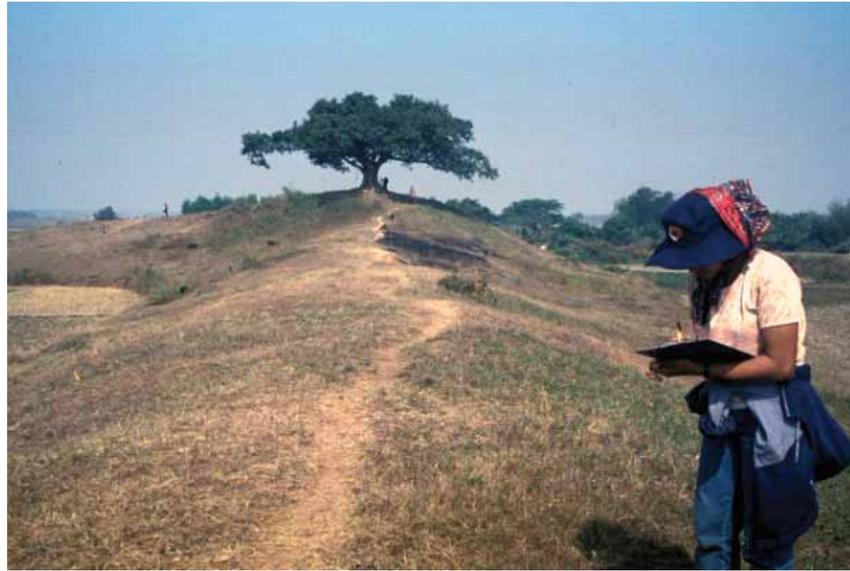


Figure 2. Mapping the top of the rampart, Sisupalgarh.

invest money in extraction!). These methods had not been applied to sites in the Indian subcontinent, but the conditions at Sisupalgarh were ideal for a trial.

The remote sensing project was led by Professor Timothy Matney of the University of Akron and his team of geophysical researchers. The team used two types of instrumentation: electrical resistivity and magnetic gradiometry. Each of the techniques had particular configurations to consider for future research. Electrical resistivity is easily undertaken and requires only a short period of training for the operator. Data-collection is a slow process, however, because the probes must be physically inserted in the ground. Gradiometry allows for faster data collection because the instrument is held above the ground, but the process results in a longer training period to ensure the steady hands and regular pacing required by the instrument.

At Sisupalgarh, resistivity and gradiometry provided an “x-ray”-like depiction of subsurface remains that allowed us to see neighborhood-level patterns of structures and passageways. The most distinctive pattern was the presence of long “streets” coming in from the eight gateways that formed a grid pattern within the site. This pattern represents architecture that lies more than a meter (about 3 feet) underground, but is completely undetectable on the surface of the site. The detection of the pattern enabled us to substantiate Professor Lal’s long-held



Figure 3. Excavations of ancient domestic architecture.

hypothesis that the site was gridded into neighborhoods, similar to what is described in the historical text known as the *Arthashastra*. The information from remote sensing and surface survey also enabled us to identify areas for the next activity: excavation .

DIGGING WIDE AND DIGGING DEEP

Archaeologists have two types of excavation strategies: horizontal and vertical. Horizontal excavation, or “digging wide,” enables archaeologists to see an area as it was lived in by ancient people, with a synchronous view of structures and space. Vertical excavations, by contrast, enable archaeologists to “dig deep” to look at the layer-by-layer transformation of a site over a long time span. A combination of vertical and horizontal excavations enable archaeologists—through the collected artifacts and architectural data—to show what changed and what stayed the same over the lifespan of a site’s occupation.

Our decision to dig deep or dig wide involved not only scholarly factors but also the realities of time and resources. Excavation is by far the most time-consuming and expensive aspect of archaeological research; although it is assumed that most archaeologists “dig” for a living, it is actually only a small part of what we do. The season for excavation

is determined by a variety of factors, not the least of which is the availability of students and faculty during university breaks. In our dig house, a field calendar noted each day’s achievements interspersed with the arrivals and departures of our personnel and served as a reminder of everyone’s busy schedule of academic, professional, and family obligations.

In our collaboration, we considered the trade-off between digging wide and digging deep nearly every day. At the beginning of each excavation season, we would mark out the places that we intended to be the focal point of the season’s work. This let us hold open the potential to either expand horizontally in whatever direction would enable us to fully expose structures, or devote our resources to continue downward in a place that was revealed to have the best potential for deep diggings. As new finds and architecture were unearthed, we reevaluated our horizontal and vertical exposures to maximize our time and data collection.

Digging horizontally enabled us to see the site’s houses and open areas uncovered as though we, too, were walking through the ancient streets of Sisupalgarh (Fig. 3). We conducted horizontal excavations to investigate domestic architecture and habitation areas at several places within the ramparts, as well as on top of the rampart itself. Some of the most dramatic excavations took place in the center of the site at the location of the standing pillars, where the geophysical research also indicated the presence of a perimeter wall that would have isolated the pillar group area from the day-to-day traffic and bustle of the city.

Digging deep provided us with data to analyze how the city changed over time (Fig. 4). But digging deep was a special challenge at Sisupalgarh because the modern water table (due to dams and other regional activities) is now much higher than in antiquity. As a result, the bottom archaeological layers were under water and required some creativity to excavate. We took our cue from the local well-diggers who were part of our field crew and used a pump system to remove the water while digging downward. The data from the deep digs showed the types of artifacts that were used by the city’s earliest residents, consisting of pottery that was much finer and more beautiful than the types of goods used by the city’s later residents. The upper layers instead showed a very utilitarian approach to pottery that



Figure 4. The article's authors, deep in the trench of the monumental gateway.

appears to have been almost disposable, as a plastic cup is today. But the upper layers also showed a change in architectural styles (including the introduction of bricks and tiles) and an amazing variety of moldmade terracotta ornaments that included rings, bangles, earspools, and pendants (Fig. 5).

Tantalizingly, those major changes occurred just below the water line, meaning that we will never be able to expose the horizontal layers associated with what must have been a rapid change of economic and social activity. A “disposable” culture such as the one we have documented at Sisupalgarh shows not only that there was an enormous amount of trash generated at the site, but also that a tremendous amount of production took place in the surrounding countryside where there would have been sources of fuel and raw materials. Even a small restructuring of the economy would have changed urban-rural relationships, but what we see at Sisupalgarh is nothing short of dramatic. The rapid shift of production and consumption that took place in just one or two generations around the third century B.C.E. would undoubtedly have had ancient grandparents telling the youngsters how different it was in the “old days.”



Figure 5. Terracotta elephant pendant.

THE HUMAN ASPECT

The students who worked on the team were truly the heart of the project. Although the majority of the fifty-five graduate students who worked on the excavation came from India's Deccan College, there were substantial numbers of participants from other Indian universities as well. Each day was a long one during the excavation season, with an early start followed by excavation straight through until early afternoon, when we would break for the midday meal. In the afternoons, students sorted ceramics and did data entry and computer work; this was followed by tea and a seminar-like "trench meeting" in which each student excavator articulated what she or he found that day and laid out the strategy for the following day's excavation. These meetings enabled students to discuss problems and opportunities amongst themselves, and gave all of us a forum to consider modifications to our interpretations.

UCLA students also played a prominent role in the excavations, as did students and staff from other American institutions. Many of our U.S.-based students had considerable excavation and survey experience in other regions of the world, and we greatly benefitted from their observations about the variability among large sites worldwide. We also hosted professional colleagues from Bangladesh, Cambodia, and the United States—including the Cotsen Institute's own Professor Lothar von Falkenhausen, who visited us for a delightful few days when we were excavating at the pillar mound.

We had a wonderful local support staff who worked with the team to enable the archaeologists to maximize their field time. Our driver, Satya, was always ready for both the predictable and the unpredictable: meeting people at the train station or airport, ferrying bags of potatoes and rice from the market, and searching out just the right type of plastic pipe or plate glass for some archaeological gadget we were devising. Our cook Ali and his assistant Kalya were likewise foundational members of the team. Like an army, an archaeological project marches on its stomach, and Ali and Kalya regularly cooked with good cheer for several dozen people.

The project included many local people who worked at the dig as field laborers. Many of our city-based Indian students, though knowledgeable about archaeological theory, had less familiarity with "dirt" archaeology. Through a medley of languages,

the students and local villagers experienced back-and-forth teaching and learning in their excavation teams. Local people kept us up to date about other developments in the area. Farmers often dug up pottery or architectural fragments when they worked the fields and would share their news with us. This often resulted in successful collaborations, such as the time we finished digging a local villager's well in order that we might collect samples from the deepest layers. There were practical benefits, too, as villagers often passed by the trench on their way to market and sold us their morning-fresh vegetables for our midday meal.

We appreciated the visits of many notable archaeologists who shared their thoughts with us about the interpretation of the site and its importance as a major excavation project. In 2008 we hosted a delegation from the Indian Archaeological Society's annual conference, and the project also was a frequent stop on the annual all-India tour of government-service trainees from the Archaeological Survey of India. Each season we also gave trenchside lectures to students from local schools and colleges (Fig. 6). Some exciting media moments ensued where we worked at the photogenic pillar area, when we were treated to the unusual experience of waves of television, radio, and print reporters descending on the site in a quest for the latest news (curious readers can still find footage in the eternal archive of the Internet).

SOME LESSONS ABOUT URBAN LIFE

The project at Sisupalgarh was exciting and satisfying in every possible way. Our research results enabled us to delve into a number of aspects of ancient urban life that not only help us to understand the Indian past but also have resonance for understanding fundamental aspects of human behavior. Urbanism is an amazingly recent development in human history, as the first cities developed only a few thousand years ago. Before that, our ancestors lived in small villages where everyone knew everyone else. At Sisupalgarh, the first occupation of the site took place in the middle of the first millennium B.C.E., a time when people were creating cities in other parts of the subcontinent as well. Our coordinated research effort illustrates that when creating cities, people marked new social, economic, and political realities in tangible ways.



Figure 6. Site visitors receiving a trench-side lecture about new discoveries.

Domestic and Monumental Structures

Ancient cities, like modern ones, had a range of housing types, from the well-built homes of the elite to the temporary encampments of vendors and pilgrims. At Sisupalgarh, excavations in 1948 along the principal streets had already revealed the presence of substantial houses built with stone foundations. Our excavations in other portions of the site showed a range of other dwelling types, including smaller structures that seemed to have been built by the hands of the occupants themselves. The construction materials included reused and mismatched stones as well as broken bricks and tiles. These domestic structures, once plastered, would nonetheless have looked very similar to their better-built counterparts.

Monumental architecture within cities can take a variety of forms. Sisupalgarh's dramatic standing architecture includes the surrounding perimeter wall, the site's eight formal gateways, and the standing pillars at the center of the city. Our excavations in these zones illustrated that considerable labor was invested in the city's civic constructions, and that

both skilled workers and a vast number of manual laborers would have been involved.

Trash

One of the most vexing—and morally troubling—problems of contemporary urban life is the generation of large amounts of waste materials. We rarely see these deposits accumulate in the developed world, except during rare garbage strikes or at periods of super-abundance of trash such as the holidays when heaps of discards in front of houses and buildings signal the acquisition of new goods. But it is a different story in the developing world, where the infrastructure of trash disposal is often haphazard, leading to the slow accumulation of discards in public places and around dwellings.

Ancient cities appear to have trash disposal patterns very similar to those of modern developing nations. Every ancient city that has been investigated archaeologically has vast quantities of refuse strewn about, and Sisupalgarh is no exception. In between

houses, the amount of discarded objects was staggering, and we were excavating several hundred kilos of ancient pottery *per day*. So, trash isn't really a modern phenomenon—it's an urban phenomenon, and a superabundance of discards appears to be part and parcel of the urban experience.

Empty Spaces

One of the most interesting and overlooked components of urban life are a city's empty spaces. Most archaeologists write grants and go into the field looking for features that are physically distinct, such as structures, burials, and craft workshops. It does seem a bit odd to deliberately excavate "empty" areas between structures, but these spaces are precisely where some of the most important ancient activities took place. As anyone who has remodeled a home knows, buildings can only be reconfigured with difficulty and usually at significant expense. By contrast, the spaces between buildings can be repurposed over and over again.

It takes only a little effort to change the function of open spaces. With the provision of chairs or blankets, they become places to sit; cleared of furnishings, they can be playgrounds, marketplaces, or thoroughfares for celebrations (or riots). Larger public spaces can be the venues of significant military or protest actions, as well as the site of political ceremony and public drama. At Sisupalgarh, we discovered empty spaces between houses that had at some point been the focus of ritual activities and then, not long afterwards, reverted to places where discards accumulated. The central spaces of the site would have provided large venues for public gatherings of all kinds, framed by the monumental architecture of the ramparts and pillars.

Ritual Activities in the Urban Center

The most photogenic of the monumental structures were the pillars that are featured at the center of the site (Fig. 7). The pillar grouping had always been regarded as an enigma because of the uneven spacing of the standing pillars, which did not correspond to any known architectural configuration. Our excavations enabled the mystery of this structure to be decoded by uncovering many other previously buried pillars that revealed a U-shaped structure bearing a considerable resemblance to apsidal *cha-*

itya halls associated with Buddhist activities in the subcontinent. The presence of pillars on two other mounds in the same vicinity indicates that the pillar-construction activities were undertaken on numerous occasions and made use of the most exacting and precise engineering skills in order to raise the pillars that still stand over 3 meters (about 10 feet) tall today.

The recovery of what appears to be a significant ritual structure at the center of the site is reminiscent of the architectural strategies of many other global cities. Many urban centers have a religious structure as their geographical focus, such as cathedrals in Europe; mosques in West Africa and throughout the Middle East; and Buddhist, Shinto, and Confucian temples in East Asia. These structures were the product of highly skilled engineers and laborers working together to create a focal point of urban activity. These official structures clearly have an impact on behavior as well; at the pillar mounds of Sisupalgarh, we found very little trash and virtually no ornaments of the kind that were abundantly discarded around domestic structures.

But ritual activities at Sisupalgarh were not limited to official, professionally engineered efforts. Like domestic architecture, much in the ritual sphere appears to be of the do-it-yourself variety, such as the votive deposit of cups and a deer antler that we found between two houses. We excavated some mysterious circular structures on the outside of the rampart walls that were reminiscent of Buddhist shrines, but their irregular layout suggested that they were not built by professionals. Nonetheless these circular structures commanded deep respect: one of them had a bronze dagger reverently leaned up against the outer casing of the circle, apparently lying undisturbed long enough to be covered over by the slow accumulation of dust.

THE "PROBLEM OF THE KALINGA WAR"

The presence of encircling ramparts such as at Sisupalgarh and other cities of this era has invited much speculation about their purpose. Throughout the world, the presence of walls around cities has been linked to warfare, protection against floods and wild animals, economic control, and to boundary-making for symbolic purposes. Each of these explanations is a viable one and can be substantiated through historical sources. Today, however, cities are not walled

for their security, an observation that should give us pause about assigning a single, simple reason for the creation of ancient walls.

City walls were massive undertakings, and a simple breach at any point would have been sufficient to let invaders into the urban confines. Instead, we might suggest that walls probably served multiple purposes simultaneously. First of all, they constituted a demonstration of a leader's authority and capacity to organize large numbers of people, and may even have been for those workers a kind of unifying project, much like a "barn-raising" integrates a community on a large scale. Once complete, the wall would have seen daily use as a symbolic perimeter and as an economic perimeter. At Sisupalgarh, the formal gateways with their restricted entryways would have been a perfect mechanism for evaluating and taxing goods coming into the city.

There is another reason, however, why we might

want to further investigate the potential of warfare as a component of ancient city life at Sisupalgarh. In the third century B.C.E., the ruler Ashoka controlled the region of northern India along the Ganges River and wrote stone inscriptions that described his experience as the victor of the Kalinga War. The culminating battle of that war has often been linked to the region around Sisupalgarh and may even have taken place at the ancient site itself. The victory was noteworthy, not only for its military effect, but also for the remorse expressed by Ashoka for the loss of life that ensued. His inscriptions credit this life-changing event for his subsequent turn to Buddhism, a factor of political support that had a galvanizing effect on the then-new religious tradition.

The "problem of the Kalinga War" may never be definitively addressed in the absence of any specific inscriptions about battlefield locations. Regardless of whether the war actually took place at or near



Figure 7. Monolithic pillars in the center of Sisupalgarh.

Sisupalgarh, the conflict would have had an effect on the economy and society of the region. Contrary to what might be expected, our archaeological research shows that economic indicators of prosperity continued during the chronological time associated with the war. In fact, the archaeological record shows that Sisupalgarh was even more robust as a city after the period in which the Kalinga region was defeated and then relinquished by Ashoka.

A CITY'S DEMISE: DRAMATIC OR GRADUAL?

Although modern and ancient cities have many things in common, there is one big distinction: Many ancient cities came to a definitive end, leaving their deserted remains for archaeologists to find. By contrast, many modern cities keep going despite great challenges such as catastrophic warfare, earthquakes, tsunamis, and other disasters. The ability to surmount these challenges may be due not merely to factors of technology, but also to factors of organization. In the case of Sisupalgarh, warfare does not seem to have been disruptive; nor do we have archaeological evidence of any other single factor such as climate change or natural disaster. Sisupalgarh, along with other fortified settlements in the region, appears gradually to have lost population as it fell into decline. The end of the site seems to have been the result of the inhabitants' slow migration from the fortified settlement to the new, nearby religious center of Bhubaneswar, where temples to Shiva and other deities signaled the shift from a Buddhist tradition to a Hindu one.

This interpretation of long-term change and gradual population shifts as a response to new opportunities resonates with research elsewhere that questions the stark "collapse" paradigm that was fashionable a decade ago. Archaeological investigations in different parts of the world now enable us to have better control of chronology and phases of site occupation. By investigating the household and community level of interaction through artifacts and architecture, we can see the economic and social changes that attest to ancient peoples' creativity and adaptation over time. This long-term perspective on urbanism also can be read in light of our current preoccupations with sustainability: Cities appear to be ideal incubators for innovation and resilience, places where problems can be identified and efficiently addressed.

THE FUTURE OF RESEARCH: NEXT STEPS

Our research at Sisupalgarh has provided a number of insights about the way in which urban centers provide economic, social, and political integrations for their inhabitants. But as with all archaeological projects, each answer brings (at least!) two new questions. How did Sisupalgarh interact with its surrounding regions? Were people enticed or compelled to come and work on the city's monumental construction projects? Did people in the surrounding towns see the city as an unpleasant imposition on their subsistence practices, or did they view the city as an exciting alternative to life in smaller towns?

With a regional perspective in mind we have recently begun to examine the surrounding hinterlands for other settlements similar in date to Sisupalgarh that will let us address questions of regional interactions. At least two town-sized sites with a walled configuration similar to Sisupalgarh's have been identified in the region, and a preliminary reconnaissance confirms that they have similar artifacts and architecture indicative of regional contact. In the next field season, we will be bringing our team together again for an exciting new research project and are looking forward to finding new answers—and new questions—about the past. ✨

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Report from the Field

Cerro del Gentil: A Paracas Mound Site in the Chincha Valley, Peru

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On the night of 4 December 1935 guests at the Fuller Building in midtown Manhattan witnessed an exclusive first glimpse of a new gallery to be opened to the broader public the following day. In attendance were members of the organization committee and patrons with recognizable names, such as Vanderbilt and Delano. The occasion was the first U.S. exhibition of the famous “Paracas textile” of southern coastal Peru, considered at the time to be the rarest archaeological textile in the world and certainly one of the most beautiful.³

There was precedent for this exciting and exclusive event. Just four years earlier an exhibit of renowned Paracas material, showcasing four textile-wrapped mummy bundles, opened at the American Museum of Natural History in New York to similar public and professional anticipation. Assistant Curator of Anthropology Dr. Wendell C. Bennett supervised the unwrapping of the largest of the bundles, from which he was able to identify sixty layers of woven cloth (both cotton and llama/alpaca wool) and four distinct stages of preparation, the first and innermost of which corresponded to the preparation of the still well-preserved body.⁴ The outermost layer of the fourth stage consisted of a turban wrapped around a false head and two covering shawls. The

final shawl, which was judged to be the best-preserved and most magnificent specimen, measuring about 9 x 6 feet, featured embroidered borders and designs, including a catlike figure, repeated in red, yellow, blue, and green in diagonal rows across the center. In addition to the wrappings and fine textiles, bags containing preserved food offerings, gourds that may have contained *chicha* (maize beer), and decorative feathers were also unveiled and catalogued.⁵ Nationwide media coverage of these spectacular finds, including major U.S. periodicals such as the *Los Angeles Times*, the *Chicago Tribune*, *The Washington Post*, and *The New York Times*, testify to the public’s early fascination with these beautiful specimens of ancient Andean art.

Though public interest in early Paracas discoveries was ample, these celebrated finds had already ignited the interest of the scholarly community some years before. In 1925, the legendary Peruvian archaeologist Dr. Julio C. Tello (fig. 1), together with Dr. William Montgomery McGovern of London University, discovered a remarkable site cluster in the coastal desert of Peru that would change the landscape of South American archaeology forever. At the site of Cerro Colorado on the Paracas Peninsula, 30 kilometers south of Pisco and roughly 200 kilometers south of Lima, Tello and McGovern unearthed a series of bottle-shaped, shaft cavern tombs, which led to the then-astounding proposition that human civilization in the Andes dated back as far as 3,000 years. Due to the dry desert climate of the south Peruvian coast, popular finds such as the elaborate burial textiles remained in a state of excellent preservation. The shaft tombs and their associated material culture came to be known as “Paracas Cavernas,” which referred to both a ceramic and a textile style

1 Cotsen Institute of Archaeology, UCLA.

2 Universidad Nacional Mayor de San Marcos, Lima, Peru, and Cotsen Institute of Archaeology, UCLA.

3 “Many in Society See Peruvian Art Exhibit.” *New York Times*, 5 December 1935.

4 “Pre-Inca Remains Go on View Today.” *New York Times*, 9 January 1931.

5 Ibid.



Figure 1. Julio C. Tello, pioneering Peruvian archaeologist.

recovered from the burials. Tello also discovered a second series of interments near Cerro Colorado, distinct from Paracas Cavernas, which contained a unique assemblage of ceramic styles and forms that clearly differed from those of the Cavernas tombs. This second series of burials, in many cases clearly superimposed upon the Paracas Cavernas bottle tombs, received the name “Paracas Necropolis,” for the burials contained multiple, richly adorned mummy bundles interred together in square subterranean rooms.

Despite public detractors who insisted that such an early date for the finds was impossible,⁶ these new discoveries opened the door for an earnest investigation into the antecedents of the known Nasca, Tiwanaku, and Inka civilizations of ancient Peru. The subsequent decades witnessed a renaissance in Peruvian archaeology. The revelation of such a deep chronology, not only for human occupation, but also for “high culture” in the coastal Andes, paved the way for a reevaluation of the relative antiquity of sites on the central coast and the discovery of ancient highland centers of civilization such as Chavín de Huántar. More pertinently, the nascent study of Paracas necessitated the establishment of numerous ceramic sequences within and between the valleys of the Peruvian South Coast (fig. 2). These were designed to fill in the gap between what was known of these new Paracas traditions and what had been worked out for the later Nasca culture (1–700 C.E.), centered on an eponymous river valley south of the Paracas peninsula. Perhaps most

6 “Denies Peruvian Finds Are Ancient.” *New York Times*, 22 February 1926.

influentially, the Paracas ceramic sequence of the Ica Valley, later published in full by Dorothy Menzel, John Rowe, and Lawrence Dawson (1964), proved fundamental to Rowe’s definition of the chronological “horizon” system that remains pervasive in Andean research today (Rowe 1960). Thus, from its beginnings, the discovery and study of Paracas did more than thrill American museumgoers and captains of industry—it profoundly influenced the way that archaeologists perceive time, region, and polity in the Andes. Tello’s breakthrough on the Paracas peninsula is, undoubtedly, one of the most influential and significant discoveries in South American archaeology.

THE SOUTH COAST OF PERU

Surprisingly, despite nearly one hundred years of archaeological research on the pre-Columbian societies of the Peruvian South Coast, we still know very little about the social, cultural, and political dynamics of the Paracas people who crafted the beautiful artifacts that first captured the public and scholarly imagination. This dearth of anthropological information is due in large part to an overtly art-historical approach to the study of poorly provenienced museum textiles and ceramics that comprise the majority of the Paracas corpus. Further complicating matters, most of these objects represent high-status items from elite graves on the Paracas Peninsula. Up until the past thirty years, there has been compara-



Figure 2. Drainages of Peru’s South Coast mentioned in the text.



Figure 3. Paracas Cavernas (i.e., “Paracas,” left) and Paracas Necropolis (i.e., “Topará,” right) finewares.

tively less thorough investigation into the domestic life, settlement patterns, and political economy of the Paracas world.

Due to increased interest in the South Coast during the 1980s, we now know that Paracas Cavernas and Paracas Necropolis, which were once considered two stratigraphically distinct stylistic traditions on the Paracas Peninsula, actually represent the corporate styles of two separate, semi-contemporaneous polities with discrete geographic origins. Thanks to regional surveys in the valleys of the South Coast it is now clear that the Paracas Peninsula was not the political core or a primary population center of either of these traditions. In fact, Paracas Cavernas (hereafter referred to as simply “Paracas”) was clearly centered on the Ica Valley to the south (Massey 1986; DeLeonardis 1991; 1997; 2005; Cook 1997). On the other hand, Paracas Necropolis (hereafter referred to as “Topará” after a type-site in the Topará *quebrada* (or narrow valley), to the north) appears to stem from settlements north of the Paracas peninsula (Lanning 1960; Wallace 1986), later shifting southward to several large settlements in the Pisco Valley (Peters 1997: 893).

Archaeologists define these two overlapping and semi-contemporaneous traditions via ceramic firing and decoration techniques, resulting in two autochthonous but converging sequences. The master sequence for Paracas pottery styles (Menzel, Rowe, and Dawson 1964) is referred to as the Ocucaje sequence, named after one of several basins in the Ica Valley that contained major Paracas population centers. Roughly speaking, the sequence originally correlated with a period stretching from the mid-first millennium B.C.E to the beginning of the second century C.E. The earlier phases of the Ocucaje sequence share motifs with the highland

ceremonial center of Chavín de Huántar (Wallace 1962), offering the tantalizing possibility that these coastal and highland polities already participated in regular exchanges of ideas, people, and perhaps goods by the mid-first millennium B.C.E. The latter half of the sequence, Ocucaje 7–10, brackets the most definitive characteristics of the Paracas stylistic tradition, which is typified by incised, post-fire resin-painted vessels (fig. 3).

In contrast, Topará is characterized by thin, finely made, monochrome ceramics similar to those first unearthed in Tello’s “Necropolis” burials on the Paracas Peninsula. Unlike Paracas, Topará is not indigenous to Ica or the Paracas Peninsula. As mentioned above, the term Topará refers to a small drainage located between the valleys of Chincha and Cañete (north of Ica and the Paracas Peninsula), which contains the type site for Jahuay, an early phase of the Topará sequence (Wallace 1986). Later phases of the Topará sequence appear further south in Chincha (Lanning 1960: 41), at major settlements such as Pachinga and Chongos in Pisco (Peters 1997), and into the upper Ica Valley (Massey 1986: 346). This chronologically sensitive distribution implies an intrusive Topará influence from the north, following the consolidation of the Paracas polity in Ica, and it is consistent with the demonstrated superposition of Topará burials upon Paracas tombs on the Paracas Peninsula. However, the Topará phases Jahuay 1, 2, and 3 can be presumed to be more or less contemporaneous with Paracas Ocucaje 8, 9, and 10 in their respective valleys of origin.

While they are fascinating and hard-won data, these observations on the cultural-history sequence of the early South Coast leave us with many unanswered anthropological questions. Paracas and Topará developed rapidly following the social

disorder engendered by the collapse of the Chavín confederation at the end of the Middle Formative (Silverman 1996: 122). We still do not really understand how and why this happened, as we do not fully understand the relationship between Paracas and Chavín. The answer may lie outside the Paracas core of Ica, in peripheral valleys that serve as pathways between the coast and the central highlands. In the case of Palpa to the south, recent studies revealed early Paracas contexts in upper-valley areas away from the coast (Isla and Reindel 2006; Isla 2010). Furthermore, we have very little understanding of the relationship between Paracas and Topará, and we have even less information about what each represented as a social or political formation. It is clear that these traditions are geographically distinct and overlapping, with the southern limit of Topará influence reaching the upper Ica Valley and the northernmost Paracas occupation located in Chincha. While it is often suggested that Paracas predates Topará in its initial emergence, this interpretation is perhaps contestable as it is likely based on a Paracas Peninsula or Ica-centric perspective. For our purposes, Paracas and Topará represent roughly contemporaneous ceramic traditions and social formations, locked in a partial geographic overlap, with Topará arising slightly later and persisting for slightly longer.

As noted, it is unclear how these societies were structured politically and economically and to what extent they were internally unified. In the Paracas sphere, later phases witnessed an unprecedented, major settlement nucleation in the lower Ica Valley (DeLeonardis 1991; 1997). Massive regional centers in Ica such as Animas Bajas and later Animas Altas exhibited full-blown urbanism and monumental construction in the form of numerous adobe mounds. These mounds are prominent instances of the new public architecture that characterized the period and are likewise found in the Chincha Valley to the north (Canziani 1992). Also appearing during the Ocucaje 9 period was a new iconography depicting a deity known as the “Oculate Being” and associated artistic motifs prominently featuring trophy heads (Menzel, Rowe, and Dawson 1964: 175). There is considerable controversy surrounding the various interpretations of the iconographic depiction of trophy heads, a tradition that erupted during Paracas times and persisted in the Andes for another

millennium through Nasca and Wari times (Proulx 2001: 119; Verano 2008).

The final Paracas phase in Ica was a period of settlement dispersal, during which numerous large sites underwent abandonment. The reasons for this are not clear, but it is likely significant that this is the period in which Topará influence becomes visible in the pottery from Ica. While some have gone so far as to suggest that Topará was an expansive state that finally managed to conquer Ica and Paracas at this time (Wallace 1986), the evidence for such a model is lacking. However, the presence of Chongos in the Pisco Valley, a large Topará site and a likely candidate for the seat of Topará power during this period (Peters 1997), does lend some credence to the idea that an expansion from Cañete southward had very real political and economic consequences that may have resulted in significant local demographic shifts.

What we are beginning to flesh out is a model of regional consolidation and competing influence around the beginning of the first century B.C.E., between Paracas in the Ica Valley to the south and Topará in Cañete to the north. As mentioned, Chincha represents the northern boundary of Paracas influence, but is in the vicinity of the early Topará heartland. Topará expansion into the area was likely a later development, spreading through Chincha to reach an apogee at sites like Chongos in Pisco (Peters 1997), Wari Kayan on the Paracas Peninsula, and only marginally influencing Ica at the terminal stage of the Early Horizon (fig. 4).

These developments, though poorly understood and understudied, are reminiscent of better-known cases from the pre-Columbian Andes that demonstrate a link between the development of social complexity and a landscape of small, competing polities interacting through a suite of ritual, warfare, and trade (Stanish 2003; Stanish and Levine 2011).

Just as quickly as the Paracas phenomenon developed, it disintegrated, ushering in the phase of regional development known as the Early Intermediate Period, the era of the famous Nasca civilization of the South Coast. The social and political dynamics involved in the transition from Paracas to the comparatively better-understood Nasca civilization also demands further inquiry. Recent work establishes the origin of Nasca outside the Rio Grande de Nasca drainage, implying a more complex dynamic than a simple replacement of Paracas with Nasca in the area of its eventual florescence (Silverman 1994).



Figure 4. Chincha Valley showing Cerro del Gentil and nearby mound sites.

A nuanced understanding of this cultural continuity and the manner in which Nasca emerged from the decline of Paracas at the beginning of the first century C.E. is improving, as archaeologists have recently begun to tackle the issue in force (Tinteroff Gil 2004; 2008; Van Gijseghem 2004, 2006; Ríos Valladares 2006; Van Gijseghem and Vaughn 2008). At the same time in the north, areas previously influenced by Topará materials become characterized by a new style known as “Carmen,” which is found across Chincha and in the northern half of the Pisco Valley (Velarde 1996). Chincha, then, remains a significantly underexplored crossroads with characteristic Paracas materials and architecture, located close to the Topará heartland and the seat of the later Carmen style.

CERRO DEL GENTIL

In June 2012, the Chincha Valley Archaeological Project under the co-direction of Dr. Charles Stanish and Dr. Henry Tantaleán inaugurated its first season of research on the Early Horizon occupation of the Chincha Valley.

Given its location at a crossroads for multiple spheres of influence, a serious investigation of the Chincha Valley is a crucial component to any satis-

factory resolution of the Paracas problem. Chincha represents the northern extent of Paracas occupation as evinced through Paracas monumental architecture. It exists either as large mound structures at sites such as Huaca Soto, Huaca Partida, Huaca Alvarado, and Huaca San Pablo, or as adobe mounds of lesser volume (but still indicative of corporate architecture) on the near side of the *chaupiyunga* (or mid-valley), at sites such as Chococota and Cerro del Gentil, among others (Canziani 1992). Chincha Valley also fell under the influence of the Topará tradition, and several sites in the valley have been identified as having Topará components (Lanning 1960: 426). Despite its importance as a nexus of both Paracas and Topará during the Early Horizon, Chincha remains poorly understood and understudied compared to surrounding valley drainages, the nearby coastal plain, and the Paracas Peninsula itself.

The site of Cerro del Gentil (PV 57–59), our project focus-site, is a small mound located on a ridge above the southern margin of the Chincha Valley. The most prominent feature of the site is a low platform mound (approximately 70 x 30 meters and 8 m of elevation above the pampa) oriented east-west (fig. 5). Available comparative data on adobe-mound architecture, brick forms, and Ocucaje surface ceramics led us to suspect an early Paracas



Figure 5. Cerro del Gentil, facing north.

occupation for the site. Cerro del Gentil is particularly well-suited for answering the questions posed above for Chincha and Paracas in general, due to its apparently long occupational sequence and the presence of large-scale public architecture. The platform mound is currently understood to be associated with a Paracas occupation as established by surface ceramics recovered in earlier surveys (Canziani 1992). Topará ceramics from the north, believed to be chronologically later in date, have also been noted at Cerro del Gentil by our team. In addition, there is a large amount of Carmen material, which postdates Paracas and Topará.

The goals of the project include the establishment of an occupational sequence for the site; an understanding of the division of space within the site, including public, domestic, and ritual areas; and a contextualizing of the site within the broader social and political landscape of adjacent valleys and potentially the highlands. More directly, our first season of research tested the following hypotheses:

1. Cerro del Gentil contains a Paracas occupation dating to the Early Horizon, particularly the area surrounding the platform mound and the mound itself, as would be indicated by architectural patterning, building materials, and ceramics recovered in excavation.

2. In addition to public architecture, the site should contain a distinct area of domestic occupation indicating a permanent occupation. The mound itself should exhibit some degree of controlled access or elite material.
3. Cerro del Gentil was reutilized shortly after the Paracas occupation, as would be indicated by Topará, Carmen, or Nasca materials.

In the 2012 field season the Chincha Valley Project began the first phase of data collection at Cerro del Gentil. We used three primary data sources: two excavation contexts and a sample of material recovered from backdirt piles associated with looting at the site. For the purposes of excavation, the site was divided into two macro sectors, Sector A and Sector B, corresponding to the platform mound and the area of suspected domestic occupation immediately south-east of the mound, respectively. We divided each sector into 2 x 2 meter units, which were uniformly excavated in natural levels (fig. 6).

Excavations in Sector A confirmed the hypothesis that the platform mound was indeed associated with Paracas material culture. Excavators found incised, postfire-painted ceramics that typify Paracas finewares as well as the conical adobes commonly used in Paracas monumental construction at other sites in Chincha and elsewhere (Canziani 1992). We also uncovered shell and stone beads, multicolored textiles, obsidian projectile points, and parrot feathers in direct association with the mound. These

relatively rare and valuable materials—particularly the feathers and textile—suggest that the mound’s summit may have been the seat of an elite controlled ritual space, located in a high, defensible position above arable land at the valley’s southern margin. Further evidence revealed that the pyramid was likely reused at least twice after the initial Paracas occupation. A small quantity of Topará blackware sherds were identified, as were two late construction phases, consisting of overlapping hemispherical adobes, which we believe date to the Carmen (Nasca contemporary) phase.

Sector B provided less substantial finds. Instead of a large Paracas domestic area, we revealed a series of small, ephemeral occupations associated with pottery dating to the later Carmen phase. Along with the Carmen ceramics, small quantities of ash, textile, shell, and bone were recovered. No Paracas pottery was found in any of these contexts. Structures appeared as low rectangular wall foundations constructed from unworked fieldstones and fragments of adobe bricks possibly coming from the mound,

no greater than 25 cm per side (fig. 7). No additional construction materials, such as cane, wood, or mortar, were present. Prepared floors appear to be the earliest modification made in the area. It is possible that they are associated with the mound, but they are free of any Paracas- or Topará-style ceramics. We uncovered a notably high quantity of features in the soil in and around these structures, which in many cases contained evidence of small fire incidents.

We did eventually identify a more suitable candidate for the site’s domestic contexts and recorded evidence of a permanent occupation in this area. Immediately north of Sector A is a shallow gravel quarry surrounded by modern cultivation to the north and west. The walls of this quarry offer a clean profile facing the mound to the south. In this profile we identified the remains of large storage *ollas* and clear evidence of multiple compacted floors (fig. 8). Located near arable land and water, in the shadow of the mound to the south, this area is perhaps a more suitable candidate for a permanent occupation during the Early Horizon. Surface collection in this

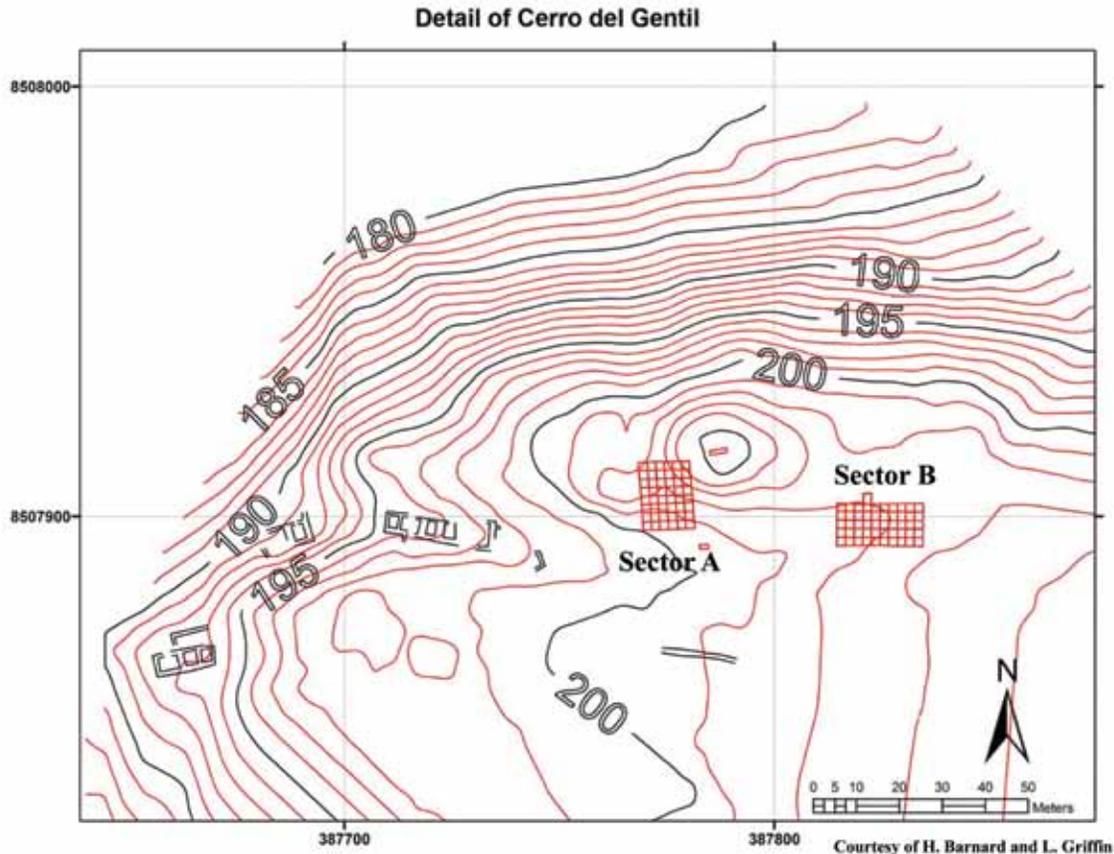


Figure 6. Topographic map of Cerro del Gentil (courtesy H. Barnard and L. Griffin).



Figure 7. Sector B excavations at Cerro del Gentil.

area recovered post-fire resin-painted polychromes, evidence of use in Paracas times.

The third component of data collection was a systematic sampling of several looted contexts in order better to understand the classes of material at the site, their relative chronology, and their spatial distribution. Abundant cultural material, including

ceramics, textile, shell, bone, and lithic artifacts, was found in these collections. One context (LT8, located north of Sector A) revealed a large majority of Carmen-phase ceramics with a small amount of Topará and a single Paracas sherd. Two additional contexts (LT1 and LT6) contained a mixture of Topará and Carmen pottery in essentially equal quantities with another lone Paracas sherd found in LT1 (fig. 9). The final context (LT 3) contained a small amount of both Carmen and Topará material.



Figure 8. Occupation surfaces exposed in gravel quarry.

The Topará ceramics recovered from this sampling all belong to a type called “Chongos Blackware” (the same type found also on the mound), defined at the site of Chongos in the Pisco Valley to the south (Peters 1997). This style is first burnished on the inside surface in a fish-net pattern and then fired in a reduced-oxygen environment to produce a black-pattern burnished effect. The recovery of these ceramics corroborates a Topará influence at the site that would have been contemporaneous with late Paracas settlements in the Ica Valley to the south.

A variety of ceramic forms are represented, both utilitarian and serving wares. The most popular forms recovered were neckless storage *ollas* and thin-walled fineware bowls. We also recovered a variety of bottle-necked vessels, constricted and straight-sided bowls, plates, *vasos*, carinated bowls, and necked *ollas*. This suggests that both preparation and consumption of food were important and likely recurring events around the Gentil platform mound.

A large quantity of fragments from ceramic panpipes was also recovered. Of these, several displayed Carmen-style decoration. All panpipe fragments exhibited similar qualities in paste, temper, and firing, suggesting that they originated in the same period (Carmen), and they may have been a product of specialized producers. The presence of these items suggests that musical performance was an important component of activity at the site, at least during the Carmen phase and potentially preceding it.

It is clear from both the data and the research outlined above that Cerro del Gentil was a place of great importance for the sequential groups of people who used the site over the course of more than a thousand years. Through our excavations this past summer we have established the existence of an early Paracas occupation, followed by Topará and then Carmen phases.

From a regional perspective, we have learned that Chincha Valley is home to a number of Paracas sites. The manner of construction and the cardinal orientation of the mound at Cerro del Gentil corresponds to what is known of contemporaneous Paracas monumental architecture in Chincha and in the valleys to the south. From the material collected from Sector A we presume that the mound was probably an area of communal, including elite, activity and possibly habitation. We also may remark that the site is somewhat defensible due to its location at some elevation above the valley floor.



Figure 9. Paracas postfire resin-painted pottery at Cerro del Gentil.

From additional evidence we have gathered in Sector B and the various looted contexts, we now understand that Cerro del Gentil was the site of numerous, semi-permanent, and perhaps seasonal visitations, which may have been the result of ritual activity at the site. Though further work is needed to understand the domestic activity that sustained these successive occupations, it is apparent from the impressive amount of shell we collected and analyzed that marine resources were an important subsistence base of the domestic economy. This reliance on a marine diet is not unprecedented in early Andean ranked societies (Moseley 1975). It is possible that an industry of collecting and processing marine resources may have facilitated trade with the highlands; certainly the distance of the site from the sea (more than 15 km) suggests some sort of exchange relationship with people living closer to the coast.

In the coming field seasons we hope substantially to expand our understanding of Cerro del Gentil and the surrounding valley. Pursuant to this aim, more excavations will be undertaken in Sector A in order to determine the architectural layout of the Paracas platform mound in greater detail. A more complete understanding of the subsequent phases of construction and their respective dates will be illuminating, as will a better understanding of any ritual activity or possible elite habitation on the mound.

Additionally, we plan to conduct more extensive surveys in the mid-Chincha Valley with the purpose of identifying any Early Horizon sites that remain to be discovered in the area surrounding the site. Remote sensing may be pursued at individual sites, particularly at the quarry area of Cerro del Gentil, in order to obtain nonintrusive information about hidden architectural features. Hopefully, these techniques will provide data concerning the location and spatial layout of houses in suspected domestic areas, information that we have not yet successfully acquired.

Outside the field, further lab work will help us better characterize and contextualize the diverse array of artifacts recovered from the various excavation areas at Cerro del Gentil. The most important task will be to determine whether the Paracas and Topará ceramics recovered from the site are locally made or imported. The answers to these questions will have great significance for our understanding of how Paracas and Topará influenced the valley, and whether or not the ceramic evidence is a manifestation of embedded political influence or trade from nearby political centers.

These specific approaches are ultimately in the service of our grander research goals. First, we must determine the relationship between the various Paracas mounds in the valley. The significance of the mounds as social or political units embedded in a larger sphere of intravalley and regional interaction can, of course, be illuminated only through further work at individual Paracas sites and through a consideration of these sites as a sphere of cultural interaction.

Second, we must develop a new understanding of the relationship between Topará and Paracas as successive ceramic traditions, but more importantly, as social and political entities that may have interacted in the valley and at the site. Along with

the establishment of a more secure chronology, this particular vein of our research will require us to characterize the nature of possible interactions and whether these were mediated by trade, ritual, warfare, or some combination of the three.

Finally, we are determined to achieve a better understanding of the late phases of occupation at Cerro del Gentil and of the entire Chincha Valley. It is now generally understood that Paracas and Topará influence in the region give way to a substantial Carmen occupation some time in the beginning of the first century C.E. The large amount of Carmen material at the site makes this transition intriguing, for the site and the valley may represent a center of a Carmen society involved in some sort of competition with the Nasca sphere of influence to the south.

The inauguration of the Chincha Valley Project represents a critical revitalization of South Coast studies, particularly in areas peripheral to the cultural centers of Ica and Nasca. We hope that successive seasons of research will provide ample data to re-explore the development of social complexity in a region that has so fundamentally contributed to scholarly and popular interest in Peruvian archaeology. *

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Researcher's Notebook

Ancestral Pueblo Villages in the Petrified Forest

Travelers to the Petrified Forest of Arizona are often surprised that this seemingly desolate place was long settled by ancestral Pueblo people who were able to survive and even thrive in an area in which few people today spend more than a couple of hours passing through. Since 2008 UCLA archaeologists have been working in Petrified Forest National Park and surrounding areas to document sites from the two major periods of village formation in the region (ca. 600–800 and 1275–1450 C.E.). This research has resulted in the documentation of dozens of little-known sites, including a few villages, Twin Butte, Wallace Tank, and Stone Axe, that were among the largest in the Little Colorado Valley. Our work continued in 2011 with survey around Stone Axe, a two-hundred-room adobe village that may have been among the last pueblos built in the region prior to migrations in the 1400s C.E. to the Hopi Mesas and pueblos to the east in what is now New Mexico. Our survey documented surprisingly little prior occupation in the vicinity of Stone Axe in comparison to contemporary settlements, but we were able to define an extensive area of agricultural fields, features, and processing facilities.

In addition to fieldwork, since 2011 I have traveled to museums in both the Southwest and the



Figure 1. Adobe bricks exposed by 2009 looting at Stone Axe Pueblo.

eastern U. S. to examine collections from projects conducted in the Petrified Forest prior to 1950 in order to obtain samples for radiocarbon dating and instrumental neutron activation analysis of pottery. One surprising find is that one of these projects, the Museum-Gates Expedition of 1901 sponsored by the Smithsonian and Peter Goddard Gates, had an unexpected Los Angeles connection. Gates, who also accompanied the project in the field, was a prominent resident of Pasadena. The project photographer was Adam Clark Vroman, the founder of Pasadena's Vroman's Bookstore and a prolific photographer of American Indian life in the 1890s and early 1900s. Photographs and artifacts from the expedition held by the Natural History Museum of Los Angeles County and the Autry National Center will provide greater context for artifacts now curated by the Smithsonian. Over the next year, I hope to complete the current phase of research, including analysis of both the large body of survey data we collected and the nearly three-hundred compositional samples that have been analyzed by the Archaeometry Lab at the University of Missouri Research Reactor.

—Greg Schachner, *Department of Anthropology, and Cotsen Institute of Archaeology, UCLA.*

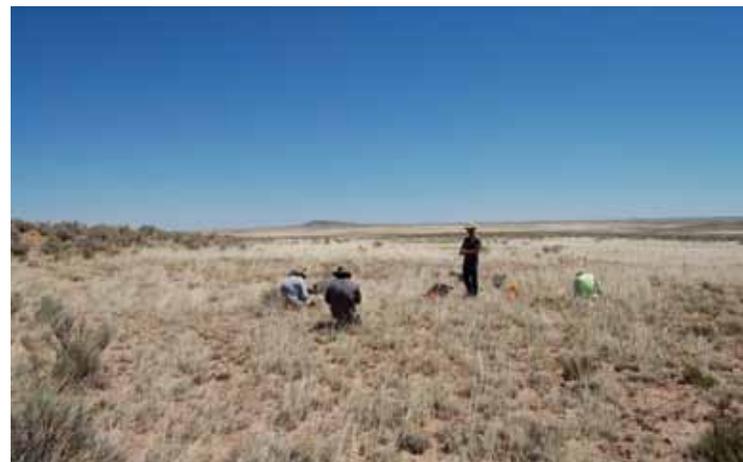


Figure 2. Survey crew in 2011 recording a Pueblo II (ca. 1000–1150 C.E.) period pit structure (left to right: Matthew Peeples [Archaeology Southwest], Reilly Murphy [UCLA 2009], A. J. White [UCLA 2011], and Jason Sperinck [United Nations]).

Imaging Skeletal Remains with Ground-Penetrating Radar

Ground-penetrating radar (GPR) is a geophysical method that is used routinely to locate unmarked burials. The method is based primarily on detecting contrasts in relative permittivity—an electromagnetic property that measures a material's capacity to store electrical energy and that is strongly dependent on water content. Typically, graves are located by detecting secondary features such as the burial pit (i.e., the contrast between background and backfill materials) or the burial container (i.e., the contrast between container and backfill material). It is commonly assumed in the literature that bones are too small and have insufficient contrast to be detectable by GPR.

Recent work in Iceland has yielded one of the best-documented cases for the direct detection of skeletal remains. Detailed GPR surveys were

conducted at a Viking Age Christian churchyard on the Stóra-Seyla farm in Skagafjörður, northern Iceland. Surveying over the previously unknown site (ca. 1000 C.E.) delineated the remnants of a buried circular turf wall that encloses a church structure and several graves (Fig. 1). The radar profiles over the graves contain strong hyperbolic reflections that emanated from the skeletal remains (Fig. 2). In addition, for one of the graves an air-filled void within the chest cavity had been detected as noted by reflections with normal polarity (white-black-white banding), which indicated a boundary towards increasing microwave velocity. During excavation, the soil surrounding an intact rib cage collapsed, thus confirming the presence of the void. In general, the skeletal remains were very well preserved and yielded strong reflections that permitted the orientation of the body to be determined.

Whether bones are detectable or not depends on the contrast in relative permittivity of bone and backfill material for a given grave, which can change over time. The best chances for detecting well-preserved

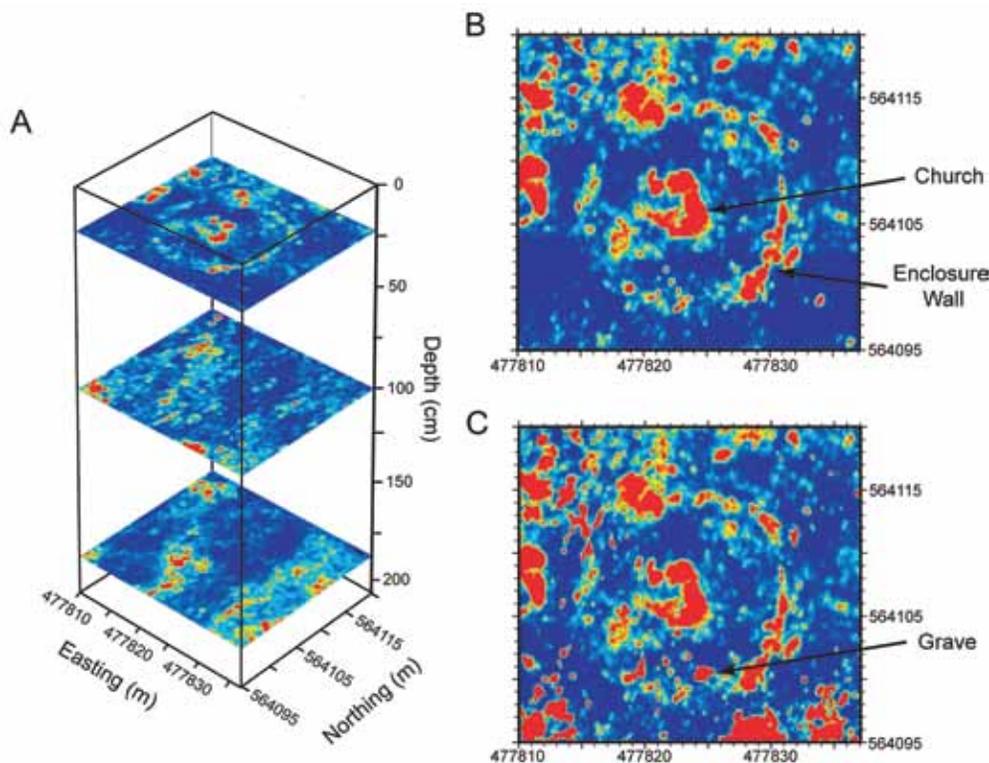


Figure 1. Time-slice and overlay images of the lower churchyard: A) representative time-slice images with red denoting relatively strong reflected energy; B) overlay image superimposing the strongest reflected energy from four time slices covering the depth interval of 21–37 cm bgs. This interval isolates the reflections from the enclosure wall and church; and, C) overlay image of five time slices encompassing the depth intervals of 21–37 and 106–112 cm bgs. The latter isolates the reflections from a grave located south of the church.



Figure 2. Clipped radargrams isolating the hyperbolas associated with the excavated grave in the lower churchyard. The wider hyperbolas are associated with the upper body (C–E) and the narrower ones with the lower body (H–K). Normal polarity banding (white-black-white) is noted for the former set, indicating a boundary toward increasing velocity. Also note that the vertices for the latter set tend to be more pointed. Arrows point to reflections from long bones lying next to the chest cavity.

bone (i.e., bone that has retained its organic material and hydrating water) are when the backfill material is either very moist with high relative permittivity or very dry with low relative permittivity. In dry environments, however, it is likely that the bone will eventually dehydrate and the organics degrade with the passage of time. Consequently, it will be less likely to detect skeletal remains as the relative permittivity and overall contrast decreases, even if the inorganic crystalline component remains intact. Although the conditions at the churchyard appear to be particularly suited for the detection of bone (i.e., a moist environment with good preservation), it is also likely that detection of skeletal remains has been more commonplace than previously assumed or interpreted in the literature, especially at sites with moist soils having a relatively large relative permittivity.

The results from Iceland will be reported in:

B. N. Damiata, J. M. Steinberg, D. J. Bolender, and G. Zoëga, "Imaging Skeletal Remains with Ground-

Penetrating Radar: Comparative Results over Two Graves from Viking Age and Medieval Churchyards on the Stóra-Seyla Farm, Northern Iceland," *Journal of Archaeological Science* (in press).

—Brian N. Damiata, *Cotsen Institute of Archaeology, UCLA*.

Ceramic Traditions in Medieval Jaffa: Continuities Amid Change

In 2007, when I began studying the Islamic and Crusader-era ceramics excavated from Jaffa as the medievalist for the Jaffa Cultural Heritage Project, one of the first things that struck me was how the Crusader assemblage so clearly reflected the diverse influx of people from the Byzantine Empire and also many Western Mediterranean countries into the Levant. Even at the beginning of Frankish presence in Palestine there is clear evidence of contact with the Byzantine Empire in Black Sea amphorae and glazed tablewares from the Aegean, comprising up to thirty percent of the ceramic assemblage. By the thirteenth century, when the Frankish states in Palestine are well established, and their commerce is dominated by Italian and French merchants who trade with Muslim countries as well as the Byzantines, up to forty percent of ceramic finds are imports. From within the Byzantine Empire, localities of origin now include northern Syria, Cyprus, Turkey, and Greece, and from outside, the localities include Italy, southern France, Spain, North Africa, and Egypt. It is easy to be dazzled by the abundant and rich array of glossily decorated imports, which have the potential to illustrate Jaffa's commercial activities, especially when compared with those from Acre, the imports of which differ in noticeable and unexpected ways from Jaffa's. Further research on the imports may also illustrate Crusader Jaffa's geopolitical importance, especially vis-à-vis Acre.

Contrasting with the imported assemblages are the locally produced wares. It has become clear that the locally manufactured ceramics from the Early Islamic through the Crusader and Later Islamic periods reflect continuity rather than change. Throughout what were often tumultuous times politically, the southern Levant in general and Jaffa in particular retained strong regional ties. Clear evidence of this is



Figure 1. MHA 2089. Regional slip-painted bowl.



Figure 2. MHA 3502. Glazed bowl with double slip.

a group of ceramics that appears to originate in Lebanon according to preliminary petrographic studies; this group is present in Jaffa from at least a century before the First Crusade, and continues as a significant portion of the ceramic assemblage throughout the Crusader and Mamluk eras (Figs. 1, 2). Thus another major component of my research is a clearer definition of locally or regionally made wares. These include the “Lebanese” types and another group of regionally made wares that originates in Acre and perhaps other coastal sites in Palestine—maybe even Jaffa itself. By collaborating with researchers who study other medieval coastal sites (such as Ascalon, Caesarea, Acre, and Beirut), while simultaneously using the tools of petrography and Wavelength-Dispersive X-Ray Fluorescence, I hope to elucidate the local production of ceramics in the southern Levant in the Early Islamic, Crusader, and Mamluk periods.

—Katherine Strange Burke, *Cotsen Institute of Archaeology, UCLA*.

Gender and the Ideal

My recent research has taken two rather different directions (forthcoming publications cited below). On the one hand, I have studied private art of the Archaic Greek through Imperial Roman periods representing violent Greek and Roman competitions, and, on the other, I have examined the survival of the classical ideal in artistic representations of women from the fifth century B.C.E. through the first millennium C.E.

Greek combat sports were associated with individual achievement, persistence, and acceptance of pain. Fighters in the “heavy sports” (*barea athla*: wrestling, boxing, and pankration) fought nude, as free men and equals, for personal and regional glory. Although athletes were generally idealized, the heavy fighters were more likely to have visibly bulky bodies or even amusingly big bellies and rear ends. In time, Hellenistic combatants’ bruises, cuts, and battered faces clearly showed the price they paid for victory (Fig. 1). Except in Greek contexts, Roman public combatants—especially gladiators—were degraded by competition, although ennobled by martial valor. Wealthy sponsors referenced themselves in art (as judges who decided victory or defeat) by showing the gazes of referees and combatants looking out of the artwork toward them (Fig. 2).

The ideal of classical femininity established in fifth- and fourth-century B.C.E. images of women influenced Roman and then Christian representa-



Figure 1. Black-figure amphora of the late sixth century B.C.E. Two boxers with big bellies and posteriors are aligned in axial symmetry. Blood spurts from one boxer’s nose. Photo: courtesy The British Museum.



Figure 2. Second-century-C.E. mosaic from Zliten (Bar Duc Ammera) showing gladiatorial combats (top register) and damnatio ad bestias (right side). National Museum, Tripoli. Photo: courtesy Deutsches Archäologisches Institut.

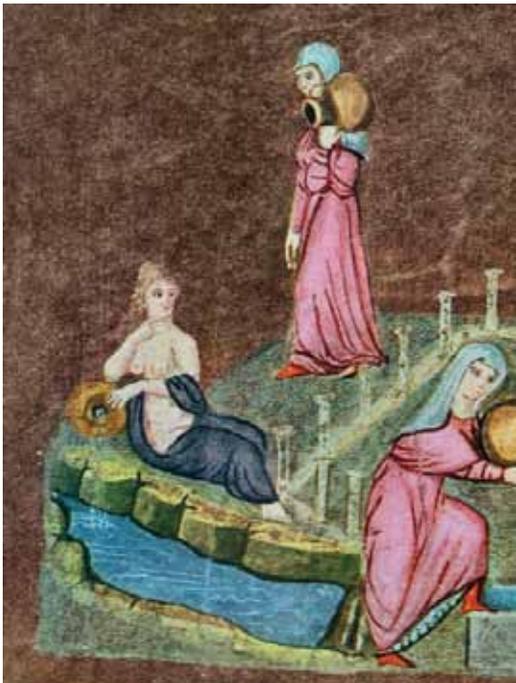


Figure 3. Rebecca and Eliezer at the well, from the Vienna Genesis (Gr 31 f.7r, vellum), Byzantine School (sixth century). Original in the Österreichische Nationalbibliothek. Photo: courtesy The Bridgeman Art Library.

tions for the following thirteen hundred years. The timeless beauty of pale, oval faces, perfected *contrapposto* poses, and flowing drapery over sensual bodies was mitigated for centuries by stances, gestures, and gazes signifying modesty. The Vienna Genesis illuminated manuscript of the sixth century C.E. offers a fascinating look at the intersection of both sexuality and restraint, and classical and Christian motifs (Fig. 3). As Rebekah draws water for Eliezer at the well, she bends her knee upon its rim in a classical pose to allow the fabric of her modest skirt to pull against her thigh. A barely draped river goddess reclining nearby twists to expose her breasts, her drapery emphasizing her pubic triangle, as she

makes an unlikely gesture of modesty. By the end of the first millennium C.E., however, Christian ideals of chastity influenced the vision of feminine beauty (exemplified by Madonna imagery), and pagan artistic standards for and motifs of female beauty were increasingly devalued.

—Shelby Brown, *The J. Paul Getty Museum, Getty Villa*.

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Advances in the Archaeology of War

The archaeology of war and warfare has been revolutionized over the past decade. Advances in theory and conceptualization during the 1990s allowed for a new substantive discussion of the role of warfare in human history. Capitalizing on the insights of scholars such as Winifred Creamer, Jonathan Haas, Lawrence Keeley, and Steven LeBlanc, dramatic cultural inferences pertaining to the human propensity for conflict were put forward. At the same time remarkable new information on conflict in archaeological contexts was brought to light. Evidence of war was uncovered from sites ranging from Roman and medieval battlefields in Europe to the streets of Chalcolithic cities in Syria.

The challenge faced by archaeologists interested in conflict was thus to capitalize on these advances in method and concept and to develop dynamic case studies. These approaches quickly moved beyond whether or not war had taken place and instead focused on its manifestation and impact. One new direction was to reevaluate traditional patterns of evidence used to identify warfare and use them to understand the broader cultural role of conflict. Thus UCLA Ph.D.s Mark Allen and Elizabeth Arkush each analyzed fortifications in local context, gaining profound insights into how war structured social and

political organization in cases concerning the Maori (Allen) and Late Intermediate Peru (Arkush).

My own work at Burnt Corn Pueblo in northern New Mexico tackled the subject of warfare in Ancestral Puebloan society (Fig. 1). Our study—funded by the National Science Foundation and recently published in the *Anthropological Papers of the University of Arizona* (2011)—involved excavation, landscape survey, and reanalysis of previously collected materials from other sites in the region. Thus we were able to see how conflict “looked” at these multiple scales. Extensive burning of villages and outlying farmsteads, long-term abandonment, and possibly ritualized clearance of structures suggest a complicated context for violence in the fourteenth-century Southwest.

Moving forward, there are three principal challenges facing archaeologists studying war. The first is the matter of method: differentiating evidence for “war” from that reflecting “accident,” or—in particular—some other culturally mediated process remains firmly based in the collection and investigation of archaeological data. There is no silver bullet for this problem, but targeted research designs will produce increasingly reliable results.

Second, we must become increasingly sophisticated in our understanding of the social manifestations of conflict themselves. Concepts such as “feuds,” “raids,” and “riots” all incorporate interpersonal violence, but are they “war”?



Figure 1. Excavations at Burnt Corn Pueblo, New Mexico, 2005. Photo: James Snead.



Figure 2. 3rd Michigan Memorial, Gettysburg National Battlefield, 2010. Photo: James Snead.

Finally, the study of warfare in the human past provides an excellent opportunity for the rapprochement of history and archaeology. War is a profoundly historical process. By looking at war in relatively modern settings through the study of battlefields, historical archaeologists are making remarkable discoveries (Fig. 2). Brought together with more strictly archaeological research set deeper in time and within different cultural contexts, such approaches will ultimately lead us to our shared goal: understanding why humans go to war.

—James E. Snead, Department of Anthropology, California State University, Northridge, and Cotsen Institute of Archaeology, UCLA.

Late Antique and Byzantine Monuments and the Topography of Southern Caria

The Mandalya Project includes a historical, archaeological, and art historical study of Late Antique and Byzantine monuments, sites, and settlements in southern Caria, drawing on the fieldwork from 2003 to 2011. The work builds on the research of *Early Christian and Byzantine Churches at Iasos in Caria: An Architectural Survey* (2004).

Caria was a large region south of the Meander River in western Asia Minor. The Gulf of Mandalya was included in the *territorium* of the ancient city of Iasos. The Iasian *chora*, which constitutes the nucleus of the Mandalya survey area, had an intensive road network in the Hellenistic period, along which small villages and farms were built; these spawned necropoleis,¹ while Archaic sanctuaries remained in use. A part of the Hellenistic and Roman sites show continuity of life throughout Late Antiquity, as do several settlements established *ex novo* in the Early Byzantine period.

The evidence in the survey area comprises the remains of several Late Antique villages, which are particularly noteworthy: These include several churches, small provincial bath buildings, as well as the ruins of identified (e.g., cisterns, necropoleis, fortifications, towers) and unidentified buildings and building groups. Surface finds collected during the survey help to date the sites. I investigated the types of identifiable buildings, settlements, and other sites; their positioning and distribution within the territory; and the factors influencing distribution. I explored the relationship among settlement areas and their influence on the rural landscape, as well as their association with the area's major cities, Iasos and Bargylia. Emphasis is placed on the identification and interpretation of rural settlements (e.g., villages, habitats, farms, and agricultural establishments) in terms of land use and management and identification of economic activities and types of production that supported these settlements.

Written sources indicate that there were prosper-

ous villages in Late Antique Anatolia. The recent investigation in the Gulf of Mandalya has likewise demonstrated the continuity of life in Late Antiquity, either at already existing settlements or through those founded *ex novo* on the sites of earlier settlements. Several Late Antique villages (three of which are within ca. 6–7 km of Iasos), along with innumerable settlement units, farms, agricultural terraces and establishments, and remains of numerous monuments in the countryside confirm the prosperity of urban *territoria* and a proliferation of rural settlements in Late Antique Caria. They span the period at least from the sixth century B.C.E. to the seventh century C.E. Continuation of habitation and land use during the Ottoman period is confirmed by the presence of a dense network of cisterns and cemeteries.

—Ufuk Serin, *Department of Architecture, Middle East Technical University, Ankara, Turkey; School for Advanced Research on the Human Experience, Santa Fe; and Cotsen Institute of Archaeology, UCLA.*

New Discoveries at Verin Naver, Armenia

The Bronze Age of the South Caucasus (3500–1100 B.C.E.) is characterized, among other features, by impressive burial mounds—kurgans with abundant grave goods of the local elites. Groups of kurgans, sometimes forming large funerary fields not associated with substantial settlements, have led scholars to conclude that they represent sites of mobile pastoralists. The Verin Naver necropolis is one such field; once covering over one hundred hectares, it is located 25 km west of the Armenian capital, Yerevan, in the Aragatsotn province on the southern foothills of Mount Aragats.

Excavations at Verin Naver were initiated in 1976 by a team from the University of Yerevan and later continued by the Research Center for Historical-Cultural Heritage of the Ministry of Culture of the Republic of Armenia; both periods of excavation were directed by the author. The excavation of the largest kurgan (50 m in diameter and 2 m high), begun in 2011 (Fig. 1) and completed in July 2012, revealed two burial chambers (Grave 1A and Grave 1B).

1 The Mandalya Project includes a comprehensive archaeological survey of the Gulf of Mandalya, at least from the Hellenistic to the Byzantine period. This project is coordinated by Professor R. Pierobon Benoit (Department of History, University of Naples Federico II).



Figure 1. General view of Kurgan 1 after the removal of surface dirt.

The burial chamber of Grave 1A, built of large blocks of tuff and surrounded by a circle of river boulders, had a dromos (entrance) filled with large tuff slabs (Fig. 2). Inside the burial chamber, gold jewelry, carnelian beads, Egyptian faience, and glass were found, along with a microlithic point of green obsidian, sourced to the southern parts of the Armenian Highlands, specifically Mount Nemrut near Lake Van. Also found in the burial chamber were the bronze pommel of a dagger handle depicting a six-pointed “star of David” and black-burnished pottery, common to the early stage of the Late Bronze Age (ca. 1600–1400 B.C.E.). Unique among the pottery assemblage was a large black-burnished bowl with surface decorations of incised ornamentation consisting of several rows of arrowheads. Another vessel was decorated with a burnished frieze of isosceles triangles, probably symbolizing mountains, above a canine-chasing deer scene (Fig. 3). Completing the circle was the image of a dragon-snake. Especially noteworthy among the ornaments found in this grave are central beads of a necklace, made of

of a silver tube with two double spirals of gold wire at both ends of the tube. Eliso Kvavadze, of the Institute of Paleobiology of the National Museum of Georgia,



Figure 2. Grave 1A burial chamber. Photo courtesy of the Ministry of Culture, Republic of Armenia.

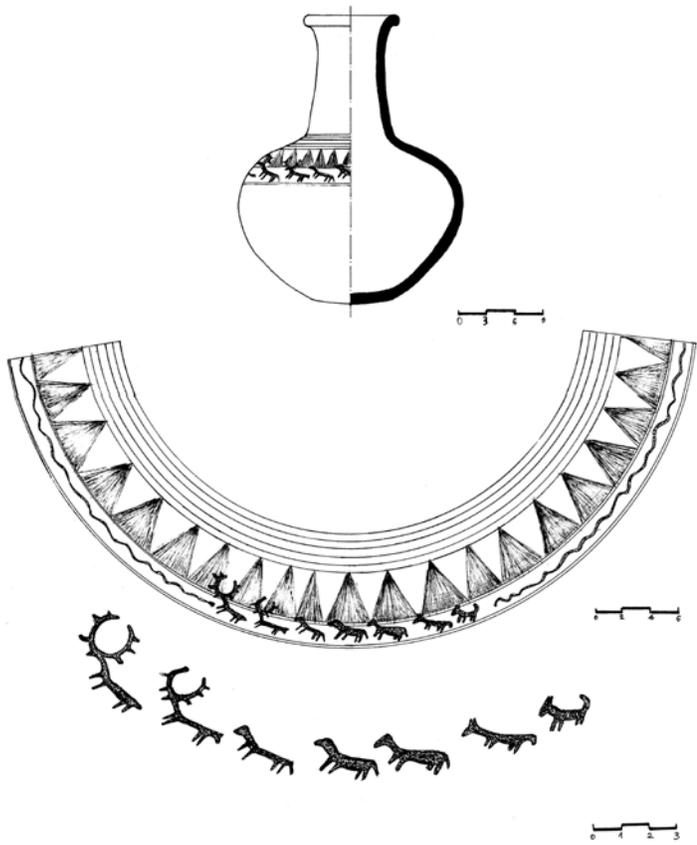


Figure 3. LBA vessel with a mythological scene, Grave 1A.

analyzed soil from the same context and identified traces of flax, hemp, and wool fabrics that were dyed with gray, green, pink, blue, and black pigments.

The size of the burial chamber of Grave 1B, with its axis in a strict north-south alignment, is 17 x 2.2–3.0 meters, including the dromos, which widens slightly to the north. Cut into the bedrock of bright orange tuff with a basalt axe, the chamber walls were preserved to a height of six to seven rows of tuff slabs. The faunal assemblage discovered in the chamber consisted of three or four canines, as well as sheep and cows.

Several vessels were laid along the walls, some presumably for ritual purpose. Fine glass beads were found—among them apotropaic eye beads—as well as human bones showing traces of trauma to the phalanges. Among a large number of imported goods were glazed clay beads from Babylon, sea-shells from the Persian Gulf, purple garnet beads, and nephrites. In the same chamber of Grave 1B was a red jasper stamp-seal in the form of a truncated pyramid with a drilled hole for stringing and the image of a horse engraved on the base. Related to the horse seal, the skull of a sacrificed horse was discov-

ered in the dromos, and pelvic bones were found in the burial hall.

A chariot occupied the central part of the funeral chamber, though only its bronze parts remain. Most notable of the multiple bronze details found in situ were horse bits, tubular decorations of the yoke, two horn-shaped guides holding the reins in place, and the figurine of a bird on an anchorlike base attached to the pole. Two symmetrically placed bronze hoops, used to give shape to leather quivers attached to the chariot, were found alongside more than sixty arrowheads of red flint and translucent obsidian (Fig. 4). Hundreds of nails and nail-heads that may have decorated the cart were scattered around it and the central part of the hall. In the center of the northern part of the chamber, cremation ashes were scattered on a raised platform. The placement of a cart most likely determined the long and narrow plan of the chamber. The distribution of bronze details belonging to carts and chariots is analogous to the kurgans of Lchashen, Lori-berd, and those from the basin of the Shamkhor River, and helps confirm this conclusion.



Figure 4. Arrowheads from Grave 1B.

The most unique discovery was five portrait medallions under the ash layer of cremation (Fig. 5). These medallions, made of bitumen fixed in a circular bronze frame, were covered with gold foil (Fig. 6). The single-sided medallions feature the frontal portrait of a male surrounded on the largest sample by a circle of animal figures, including pairs of rams lying on both sides of a tree of life. This portrait presents a bearded man with wavy hair parted in the middle and three spiral-like ringlets that fall symmetrically down each side; a long thick beard runs down in vertical locks; large almond-shaped eyes with brows focus on the viewer; and the mouth features full, closed lips. The one large medallion (8 cm in diameter), and the four others of smaller size (5 cm), as well as the buckles found nearby, indicate that they were details fastened to leather or to one another. Ancient Near Eastern reliefs with similar depictions lead us to suppose that these medallions decorated a crown or chest piece worn by a royal person.

Similar rare medallions without known provenience have appeared at different times on the antiquities markets and currently embellish the collections of the Louvre, the British Museum, and the Metropolitan Museum of Art; these are usually attributed to the productions of southwestern Iran during the Middle Elamite period. The medallions found at Verin Naver are the only examples excavated in a secure archaeological context.

The discoveries at Verin Naver attest to a complex world of mythological ideas and ritual actions among the Bronze Age inhabitants of Armenia. Pictorial friezes on pottery—similar to those described above—have been interpreted by scholars as reflections of Indo-European myths. The historical memory recorded in the fifth and seventh centuries C.E. by the works of Movses Khorenatsi and Sebeos indicate that the foothills of Mount Aragats served as the ancestral domain of prehistoric Armenian patriarchs. The necropolis of Verin Naver helps to provide a physical link for those memories from the remote past.

—*Hakob Yervand Simonyan, Research Center for Historical-Cultural Heritage, Ministry of Culture of the Republic of Armenia.*

—*Edited by Emily Uyeda Kantrim.*



Figure 5. Bitumen medallion with bronze frame and traces of gold-foil gilding.



Figure 6. Replica medallion produced by the Ministry of Culture, Republic of Armenia.

Students' Research Experiences

Comparative Notes from Egypt and Peru

As part of the Cotsen Institute of Archaeology initiative to give UCLA archaeology graduates students the chance to experience archaeology in other parts of the world, to compare methods, as well as to experience both varying research and variability of cultural circumstances, Ben Nigra and Karl La Favre spent the fall of 2011 in Egypt, while Rachel Moy and incoming student Rose Campbell participated in Peruvian projects during the summer of 2012. These are their brief impressions of the (ex)change of venue.

WILLEKE WENDRICH¹

Peruvian Archaeologists in Egypt

BEN NIGRA²

Having spent more than half a decade conducting fieldwork in the Andes as a student, the opportunity to work at Kom Aushim as part of the URU (UCLA/Rijksuniversiteit Groningen/University of Auckland) Fayum Project provided a vivid counterpoint to archaeological practice in the New World. As an anthropologist, I might emphasize the overt differences stemming from modern cultural practices, food, dress, or language. I might compare the trajectory of ancient Andean and Egyptian societies or focus on the presence or absence of textual records. The admixture of these factors created an experience that was profoundly novel for me and that greatly influenced my approach to research, not to mention daily life. Here, however, I will try to go beyond what

might appear obvious and give an account of the differences that were most unexpected.

I was struck by the scale and longevity of archaeological projects in Egypt. Perhaps this is unique to the Fayum Project, but I got the impression that most field research was conducted by very large groups of people with staff representing multiple universities. In the Andes it is quite common to join a small research endeavor, which in some cases boasts less than a dozen people involved. In Peru, for example, all one needs is a Peruvian codirector and a permit from the Ministerio de Cultura. Large Andean “projects,” which span multiple decades tend to be broadly regional in scope, send out tendrils to multiple sites, and serve as central hubs for whomever—Programa Collasuyu, Programa Contisuyu, etc. Smaller projects tend to last only five years or so and focus tightly on one or two sites.

The time-depth of archaeological inquiry in Egypt was also striking. There is truly an “archaeology of archaeologists” to be done, as my experience studying the Beyt Sobek house soon taught me. It is possible, in the Fayum, to immerse oneself in the residue of projects that took place nearly a century ago. Michigan archaeologists in the 1920s were able to build a massive habitation complex within the

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² Fourth-year UCLA Archaeology IDP doctoral student with focus on Peru.

limits of Karanis—something completely impossible by today’s standards, and something that I have never seen or experienced in Peru. I was fascinated by the Graeco-Roman city at Kom Aushim, but I was equally enlivened by imagining how those first archaeologists would have lived—what they were eating, who was cooking, what about the old rusted “Niagara” toilet tank, the stables for the horses, the feuds between British and American teams, the rooms specially built for photography, and what happened when someone became ill—all issues that we still deal with (food, comfort, transportation, restrooms, lab space, illness, internal politics), albeit with twenty-first-century approaches and profoundly modern materials. I imagine that similar situations exist elsewhere in Egypt.

In the Andes, real scholarly work by large teams of researchers began only sixty or seventy years ago. Up until that point, a lot of early research involved exploratory expeditions to archaeologically uncharted areas, building chronologies, and discovering large (and extremely valuable, from a scientific perspective) urban areas and monumental complexes. My understanding of Egypt’s archaeology is that much of the “big stuff” was either available to be understood through text (as soon as it could be deciphered), visited by people regularly or semiregularly over the past millennia, and/or was otherwise in the public’s consciousness. I cite as my example ancient Greek, medieval Arabic, French, and English graffiti at Philae Temple in Aswan, Thebes, or on the Giza Pyramids—Egypt’s antiquities have been available to the scholarly mind for much longer than that of Peru. The arrival of the Spanish in Peru and the abrupt shock to a uniquely Andean social system in many ways define what is known and what is left to be discovered. Machu Picchu wasn’t “discovered” by Westerners until 1911, and is now the most commercially productive piece of cultural heritage in South America, probably in the entire Western Hemisphere. I mention Machu Picchu because I think it really represents an important paradigm of Andean archaeology, whether archaeologists are inclined to believe it or not: the idea that there are very large, forgotten things out there, be they in the Amazon, or in the mountains, or buried under coastal sands. There are no precolonial accounts of visits across Peru and no indigenous documents, and a ton of valuable knowledge of where and what things are

was lost with the depopulation of the New World from disease following war, conquest, andquisition. Hence the enormous need for Andeanists to conduct massive regional survey work, to rectify the nearly complete lack of knowledge of precolonial history in the Peruvian Amazon, and to recognize the fact that there are many Andeanists and plenty of sites for everyone. I am tempted to call this the “El Dorado Factor.”

KARL LA FAVRE³

Having participated in archaeological fieldwork in Peru and Chile since 2006, I set off for new experiences in Egypt during the fall quarter in 2011. Although I did not realize it until well after I returned from Egypt, the timing of my first archaeological experience outside of the Andes was perfect. Living and working in the Andes had become familiar and comfortable. There, I could unconsciously perform tasks that had once been fierce battles. In contrast, my Egyptian experience began with uncertainty before my arrival there. In the Frankfurt airport, my travel companion, Ben Nigra, was chatting with another traveler and mentioned that we were headed to Egypt. The man solemnly responded, “Is that a good idea?” He was probably referring to the most recent wave of news stories about Egypt: just days earlier, a Coptic march in Cairo had turned into a major violent clash. Ben and I were too optimistic about our trip to be worried, but who were we, with only a few words of Arabic between us, to really say “yes” or “no”?

The seemingly simple task of securing a dinner our first night in Cairo was a comically difficult process. My first, strenuous effort was rewarded with a small snack rather than what we sought. We headed to another location where the simplicity of the menu (one option: rotisserie chicken) played in our favor, and we returned to our hotel with an enormous meal. The extra effort—not to mention the additional hunger developed during the process—made that dinner especially satisfying and memorable.

The optimism we had for the trip was very quickly matched and then exceeded by reality. Our Egyptian experience began with a few weeks of travel

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up and down the Nile. I had already seen many stunning, profoundly interesting archaeological sites during my travels in the Andes and the U.S., but nothing I had experienced before was quite as viscerally striking as climbing up into the Pyramid of Khufu or walking through the tombs of the Valley of the Kings.

After these travels, I participated in archaeological fieldwork with the URU Fayum Project. Parallel to my interest in the Archaic and Formative periods of the Americas, I worked on the Neolithic aspect of the Fayum Project. Together with “AJ” White, a recently graduated UCLA student, I recorded Neolithic heat-retainer hearths in an area threatened by agricultural development. Despite my total lack of experience working in Egypt, Professor Wendrich generously treated me as if I were a veteran: “AJ” and I drove off together each morning as a relatively autonomous team. Working in a small, self-directed team allowed for an important realization: the novel challenges of being pushed well outside of my Andean comfort zone were so exciting that they never felt difficult. I understand in hindsight that this had, in turn, helped foreshadow a different kind of novel experience—taking charge of my own project for my doctoral dissertation. As I write this, I am in the midst of that process, and it is for this reason that I began by saying that I now realize that my Egyptian foray was perfectly timed.

Egyptian Archaeologists in Peru

RACHEL MOY⁴

My journey to Peru, which took me to two separate archaeological projects, made it clear that Egypt and Peru are far away from each other, not only in regard to physical distance but also in archaeological theory, methods, and interpretation. However, despite differences and due to this amazing opportunity, I see the potential to apply aspects of the Andean archaeological outlook to my own area and interests. I first visited the Vitor Archaeological Project, sponsored

by the University of Chicago and the Peruvian Ministerio de Cultura. The goal of this project is to research and preserve the cultural heritage of the beautiful Vitor Valley in southern Peru. Initially, I worked on the cartography team, mapping large sites and traveling through the areas in between, rather than staying in a single trench or excavation sector. After a few weeks, the overall landscape of the valley unfolded before me, and I began to see parallels to the Egyptian landscape. I am personally interested in movement across the ancient landscape, and previous projects addressing movement through the valley and access points, such as *quebradas* (dry riverbeds), grabbed my attention. The control of movement and people, I soon realized, was something I had often neglected in my own research. After working on cartography, I moved to assisting in surface collection of a looted mortuary site. I was initially astonished by the remarkable preservation of wood, textiles, basketry, hair, and even some soft tissue that remained on the surface, due to the environmental conditions, relatively recent age (in comparison to Egypt), and lack of previous research.

This lack of previous research marks a particular contrast to Egypt, which has a long and varied history of scholarship. In Peru, many questions are still open to being addressed, and large areas remain untouched by archaeological inquiry. This fact was made even more evident when I arrived at my second project. The Chincha Archaeological Project is sponsored by the University of California, Los Angeles, and the Universidad Nacional Mayor de San Marcos. This project focuses on Paracas culture, on which very little work has been done, which made every discovery new, exciting, and wide open to interpretation. At this site I was exposed to very different excavation methods and methodology. The excavators used horizontal exposure, digging down extremely slowly and carefully. Every time a group of artifacts was discovered, it was drawn, photographed, and catalogued. I also noted that both projects had a Peruvian codirector and collaborated with other Peruvian archaeologists. During this valuable experience I was exposed to a number of new ideas and ways of thinking, and I discovered a new love for the country of Peru, its culture, and its people.

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ROSE CAMPBELL⁵

Although I have studied ancient Egypt for several years, I am especially interested in cross-cultural interactions and influences. In particular, I am fascinated by the ways mortuary behavior evolves through time. When I was offered the opportunity to excavate an ancient cemetery in Peru in the summer of 2012, I looked forward to expanding my experience into South America and comparing the ancient cultures of Peru to the vastly different culture of the ancient Egyptians.

Since my research is primarily concerned with mortuary archaeology and bioarchaeology, excavating a cemetery provided an excellent opportunity to compare the mortuary behavior of an ancient Peruvian culture (in this case, the Ramadas culture) with that of ancient Egypt. The deep, circular graves in Peru contrasted sharply with the tombs and shallow pits favored by the Egyptians, and while Egyptian graves often held numerous provisions for the afterlife, the Ramadas culture seems to have been less concerned with taking material goods to the grave.

One of the most interesting aspects of my experiences in Peru and Egypt was the differences in looting behavior. The Ramadas cemetery had been heavily looted, and of course most Egyptian cemeteries were looted centuries ago. I found it fascinating that the primary objects sought by Peruvian looters were textiles; Ramadas textiles were often woven in bright colors with geometric patterns, and some even had patterns of vibrant feathers sewn into the fabric. Though Egyptian graves generally contained some linen or other fabric, these were largely ignored throughout the centuries by looters who favored vessels crafted from precious materials, such as gold, silver, and gemstones.

Attitudes toward human remains also differed cross-culturally. In Egypt, looters often simply pushed aside the human remains rather than removing them from the grave, but at the Ramadas site, human remains had been extracted from the graves and discarded at random throughout the cemetery. This may have been due in part to the looting of colorful textiles wrapped around the body for burial in the Ramadas tradition.

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Overall, basic archaeological methods are much the same from country to country, but the nature of the site being excavated has an enormous influence on which methods are suitable. In Egypt's Delta region, the soil consists mainly of clay, and a high water table meant that I was often digging through mud or water, even in relatively shallow excavation trenches. The high elevation and arid climate of southern Peru, combined with a thick layer of volcanic ash from an eruption in 1600 C.E., necessitated a different approach than the mud of northern Egypt.

Excavating in Peru provided an excellent opportunity, not only to examine mortuary behavior of another ancient culture, but also to study a cultural group far removed from ancient Egypt, both geographically and temporally. My experiences gave me valuable insights into the ways that humankind has viewed and responded to death throughout the millennia. *

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Surveying Landscapes: Some Thoughts on the State of Survey Archaeology in Anatolia

OWEN DOONAN¹

Fifteen years ago several colleagues and I began the Sinop Province Regional Survey, one of the first international systematic surveys in Turkey that was based on the methods developed by a number of Mediterranean-based archaeologists in Italy and the Aegean (Cherry 1983).² In an influential article just a few years before we began our survey, Susan Alcock rightly noted that the state of systematic survey archaeology in Anatolia was insufficient to make the kinds of inferences about Hellenistic and Roman land use that were possible in Greece, and in parts of Italy and North Africa (Alcock 1994). There has not really been an evaluation of the state of systematic survey and landscape archaeology in Anatolia since, despite some very significant advances. This paper offers some first thoughts on the subject as I prepare to organize a series of conferences and workshops intended to promote problem-oriented approaches to archaeological survey in Anatolia by Turkish-led research teams. I would also like to highlight some trends in the practice of systematic archaeological survey in Anatolia that may promote valuable innovations as the discipline moves forward (Fig. 1).

The state of landscape archaeology in Anatolia is particularly challenging to assess, much less synthesize, because the region straddles critical divides in academic cultures as well as cultural-historical zones. At least four major archaeological survey traditions are commonly practiced in Anatolia in addition to general survey, which will not be covered here:

1) Near Eastern tradition, particularly in the case of the prehistoric or protohistoric horizons in all of Anatolia. These are often site-focused and have an interest in contextualizing sites within an ecological context or groups of sites in an ecological setting (e.g., Project Paphlagonia, Konya Plain, Amuq Survey).

2) Graeco-Roman nonsite research similar to the work carried out by Cherry, Alcock, and others in Greece, Cyprus, North Africa, Spain, and Italy (e.g., Sinop Regional Archaeological Project, Rough Cilicia Archaeological Survey, Goksu Valley Archaeological Project, Hacimusalar Survey, Avkat Survey)

3) Historical/topographic tradition (Graeco-Roman, Byzantine), emphasizing sites of major historical interest and their immediate vicinities; the tradition is driven by interest in monuments, inscriptions, and elements that can lead to a historical interpretation of places (e.g., Miletus Survey, Sagalassos Survey).

4) Rescue survey, necessitated by regional-scale dam and construction projects (e.g., Keban, Ilisu, Carchemish dams, Baku-Ceyhan Pipeline).

The first three of these approaches are deeply based in diverging intellectual traditions. Each makes use of a distinctive orientation to the landscape and addresses fundamental research questions through distinctive sets of methodologies and question frameworks. Because of these differing fundamental frameworks it is difficult to compare

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² Turkey, particularly the Asian part of the country, is often referred to as "Anatolia" by archaeologists and historians.

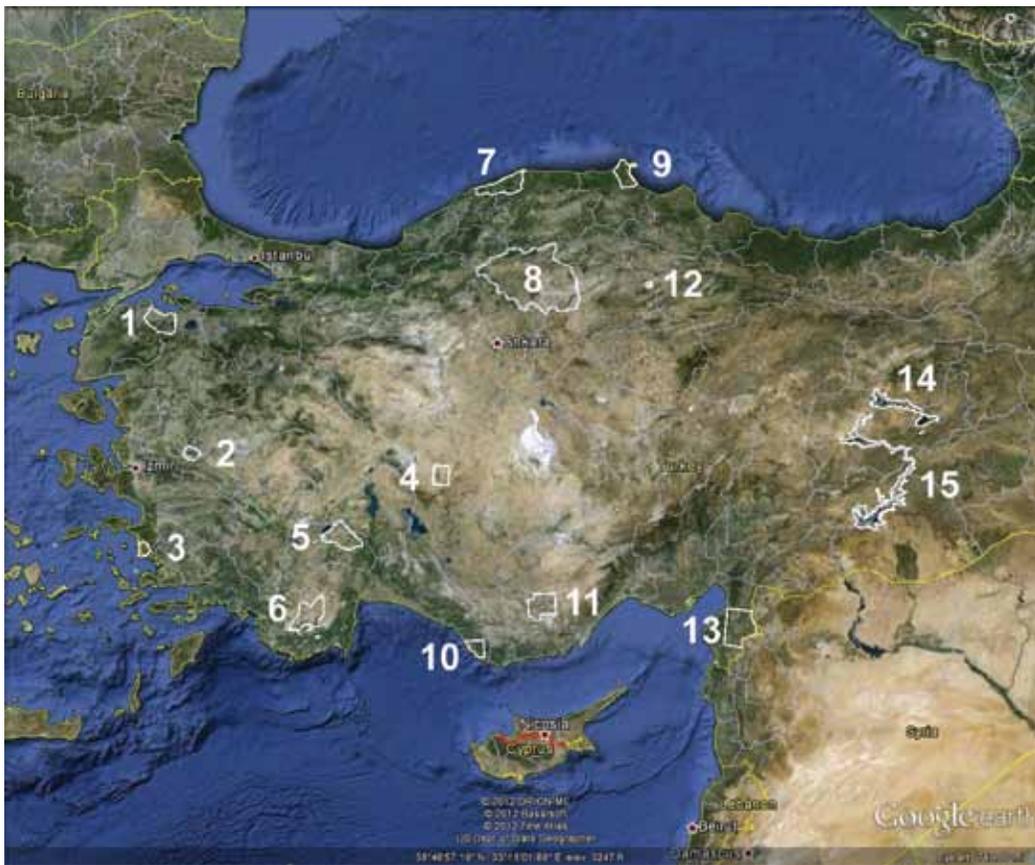


Figure 1. Map of Turkey with the locations of archaeological surveys marked. Map © Google Earth 2012; survey outline data from Mediterranean Archaeology GIS (Foss and Schindler 2008) and published sources.

- 1 Granicus
- 2 Central Lydia
- 3 Miletus
- 4 Yalbur Konya Plain
- 5 Hacimusallar
- 6 Sagalassos
- 7 Cide
- 8 Project Paphlagonia
- 9 Sinop
- 10 Rough Cilicia
- 11 Goksu Valley
- 12 Avkat
- 13 Amuq Valley
- 14 Keban Dam
- 15 Ilisu-Carchemish Dam

results of archaeological surveys from differing traditions with one another directly. The problem of comparability has been examined recently by Susan Alcock and John Cherry in their path-breaking volume, *Side-by-Side Survey* (2004).

The Near Eastern tradition of survey (as practiced in Anatolia) is often concerned with the relationships of settlement sites to each other and to their surrounding ecological and social contexts, and problems like the origin and spread of social complexity, or the economic and social transitions associated with profound transformations like Neolithization or historical trends discerned in the rich textual sources. Sites of greatest interest are frequently highly visible mounds formed by multiple layers of settlement remains, called *höyüks*, also known in Near Eastern archaeology as *tells*, and can often be discerned at a distance or by remote sensing. *Höyüks* tend to be well-defined spatially, although in many cases a “lower town” can develop around the more visible main mound. Many of the questions that drive surveys of *höyük*-dominated landscapes are on large spatial scales that make intensive pedestrian surveys impractical (Wilkinson, Ur, and Cassana 2004). Important differences in the preservation and visibility of sites in different cultural and environ-

mental situations can also affect the selection of very different research designs in terms of scale and approach (Wilkinson 2003: 7–10; Wilkinson, Ur, and Casana 2004; Peasnell in press; see papers in Tuna and Doonan 2011). A number of recent surveys, arising from a fundamentally Near Eastern methodological and theoretical framework, have also included a significant off-site intensive pedestrian survey component that provides data on flat sherd scatters and other small sites more typical of later periods (Verstraete and Wilkinson 2000; Matthews and Glatz 2009; Düring, Glatz, and Sereflioglu 2012).

Project Paphlagonia was an ambitious survey that covered an area of nearly 8,500 km² in north-central Turkey. This area has been marginal and peripheral through many historically attested periods from the second millennium B.C.E. onward. Major concerns included basic documentation of an almost completely unknown area, documentation of settlement patterns, land-use practices, demography through time, and the impact of a sequence of neighboring imperial entities on this quiet place. The need to develop a basic picture in vast areas quickly led the team to conduct several seasons of extensive survey (1997–99 seasons), followed by two seasons of higher resolution, intensive pedes-



Figure 2. Tokar Mevkii, a badly looted Iron Age mound in the Yalbur survey area, illustrates the archaeological palimpsest of cultural remains, with a spring, a series of sheepfolds, a quarry, a rock-cut cultic feature, and another mound in the distant view. Courtesy of O. Harmansah, Yalbur Archaeological Survey.

trian survey seasons (2000–01; Matthews and Glatz 2006: 11–25). The intensive survey examined ten sample areas (each 40 km²) that covered a range of environmental and topographic conditions across the region. Each sample area was investigated in five 0.8-km² transects (Matthews and Glatz 2006: 16–25). One of the interesting observations offered in the final publication is that the intensive survey did not really overturn any of the main conclusions emerging from the extensive survey (Matthews and Glatz 2006: 16).

One of the most interesting new surveys in Anatolia is the Yalbur Yaylasi Archaeological Landscape Research Project, an investigation centered in the region around a Hittite dam and sacred pool complex in south-central Turkey. The research program includes geomorphological and ethnographic studies, and is noteworthy for its explicit concern with contemporary practices and attitudes concerning the landscape, including premodern anthropogenic features (Fig. 2). Intensive field walking is projected as an important component of this survey so that off-site features will be recorded as well as sites (Harmansah and Johnson 2012).

The second and third group of surveys outlined

above overlap closely in terms of the cultures they investigate. The difference between groups two and three reflects more an attitude toward the practice of archaeology and history of Graeco-Roman and related cultures. The former has arisen out of the New Archaeology background of the 1970s and 1980s, and shows particular concern with the rural landscapes of the Graeco-Roman world. The third group, that is, historical-topographical surveys, collect a comprehensive body of historical, artistic, archaeological, and topographical evidence relating to particular sites or groups of sites. These projects have a long history in Anatolia and until recently have represented the norm for researchers interested in Graeco-Roman cultures (among many examples, see Stephen Mitchell's surveys in Pisidia-Mitchell 1995 and Mitchell and Waelkens 1998). In the past decade such surveys have in some cases ventured beyond the main settlements into the agricultural hinterland, such as Sagalassos (Vanhaberbeke and Waelkens 2003) or Miletus (Lohmann 1999). Others have prioritized highly visible monuments like tumuli while employing techniques that record off-site evidence as well, such as the Central Lydia Archaeological Survey (Luke and

Roosevelt 2009) or the Granicus River Survey (Rose et al. 2007). Although surveys like these provide rich information on rural settlements in the hinterlands of major towns, they strongly prioritize the sites found with the assistance of local informants or through prospecting and tend to have less interest in near-site or off-site areas.

The intensive, systematic pedestrian survey approach is the predominant survey framework for landscape archaeology projects in the Mediterranean over the past thirty years. These methods were first widely applied to Mediterranean archaeological surveys in the 1970s and 1980s and rapidly grew in popularity because of their combination of relatively high data resolution and reliability, nondestructive nature, and rich potential for exploring the agricultural landscapes of Bronze Age and Graeco-Roman cultures (Cherry 1983). By the early 1990s a sufficient number of projects using this methodology had been carried out to permit synthetic discussions of well-documented areas, such as Susan Alcock's landmark study of Messenia in Greece (Alcock 1993) or her broader survey of Hellenistic rural landscapes (Alcock 1994). Notwithstanding the broad interest in this method in much of the Mediterranean region, as of the mid-1990s very little work of this kind had been carried out in Anatolia (Alcock 1994). Several major surveys begun in the mid-1990s have striven to extend this methodology into difficult mountain regions: the Sinop Regional Archaeological Project (Doonan 2004a; 2004b), the Rough Cilicia Archaeological Survey (Rauh et al. 2000), and the Hacimusalilar Survey (as yet largely unpublished). Among these early intensive systematic surveys the Hacimusalilar project stood out as one of the most technically advanced and methodologically ambitious, with highly detailed mapping and sophisticated applications of Geographic Information Systems [GIS]. Unfortunately almost no results from this survey are available in published form. Although final publications are still in progress for the Sinop and Cilicia surveys, many interim reports and articles have been published about them (for updated bibliographies see the respective websites listed below). Both the Cilicia and Sinop surveys have attempted to generate data that would be comparable to the intensive systematic survey data from projects elsewhere in the Mediterranean in difficult mountain terrain (Fig. 3).

The Euchaita/Avkat Project is focused on the ter-

ritory surrounding the Byzantine town of Euchaita in north-central Turkey. The project aims to integrate archaeological survey, excavation, environmental, and textual studies to establish a diachronic record for the region and to establish detailed models for settlement, land holding, and demography of particular interest to the Byzantine phases of settlement. Epigraphic and opportunistic surveys are combined with intensive systematic field walking to create a record in a radius of approximately two-days walk from the geographic center of the survey at the village of Avkat. High resolution surveys on selected sites permit detailed analyses of the structure and function of surface assemblages, and thus permit inferences about the organization and function of large complex sites (Fig. 4).

The Sinop Regional Archaeological Project is investigating the Sinop promontory, an ecologically diverse region extending approximately 25 x 25 kilometers (ca. 525 km²) into the central Anatolian coast of the Black Sea. Similar to the Paphlagonia survey, the region is sampled in a series of quadrats chosen to represent diverse topographic and environmental features of the promontory. Within each quadrat the field team, spaced at ten-meter intervals, walks a sample of fields chosen to maximize visibility while representing the range of conditions within the quadrat. Fields, slopes, forests and ravines offering



Figure 3. Rough Cilicia Archaeological Survey team recording an outcrop along the rim of the Adanda Canyon in Gazipasha / Antalya, 2000 season. Courtesy of N. Rauh, Rough Cilicia Archaeological Project.



Figure 4. Highly intensive on-site survey in Avkat, 2009 season. Courtesy of J. Haldon, Avkat Survey.

little potential for the intensive survey methodology are investigated within each quadrat, so the entire area is sampled at either a higher or a lower level of resolution. The multitiered approach works well, since the systematic intensive methodology is highly effective at detecting Hellenistic, Roman and early Byzantine on- and off-site evidence, while the more general survey method is effective for identifying preclassical and later-period remains (e.g., Medieval or Ottoman; Fig. 5). Geomorphological, environmental and textual studies are integrated into the research program.



Figure 5. Early Byzantine building found less than a hundred meters south of a ceramic scatter in an agricultural field in 2011. The forest is so dense that the structure would have been impossible to find without a tip from a local informant. Courtesy of O. Doonan, Sinop Regional Archaeological Project.

DISCUSSION

It should be apparent that there is currently a healthy diversity in archaeological surveying as currently practiced in Anatolia. Although the important goals of cross-project coding and strict comparability are frustrated by this diversity, important opportunities for innovation remain. Projects with a more “Near Eastern” focus, like Project Paphlagonia and the Amuq Survey, are moving toward a synthesis of “Mediterranean” and “Near Eastern” survey methods and concerns, while surveys arising from the more recent Mediterranean framework (Sinop, Cilicia, Avkat) are also making use of extensive and opportunistic strategies. These hybrid and more flexible approaches take into account the great variety of conditions on the ground that affect visibility and preservation, an important problem stressed by Wilkinson (Wilkinson 2003). Post-process concerns are just starting to emerge, as in the Yalburt Survey.

An ongoing initiative I am co-organizing with the Centre of Research and Assessment of Historical Environment–Middle East Technical University [TAÇDAM] will promote the use of intensive systematic archaeological survey techniques by Turkish archaeologists through a series of workshops and teaching materials. With the collaboration of the energetic young generation of Turkish colleagues, we hope that Turkey will soon be covered by many new systematic survey projects and that it will finally be possible to evaluate a rich survey record that does justice to the remarkable history of Anatolian landscapes. *

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WEBSITES OF INTEREST

A great wealth of survey data from Turkey is available on the Internet. Several important websites offer information about surveys and other kinds of research that has relevance for archaeologists interested in regional scale research. The Ministry of Culture and Tourism publishes the proceedings of the annual symposium on Surveys and Excavations on its website. Back issues of the survey volumes are available at <http://www.kulturvarliklari.gov.tr/TR,44761/arastirma-sonuclari-toplantilari.html> and those of excavations at <http://www.kulturvarliklari.gov.tr/TR,44760/kazi-sonuclari-toplantilari.html>.

TAY (Archaeological Settlements of Turkey) offers information on thousands of sites in a searchable GIS format at <http://tayproject.org/enghome.html>.

Current Archaeology in Turkey is another site that presents recent results from hundreds of sites across the country. The site provides a brief list of recent surveys but the main focus is on excavations: <http://www.une.edu.au/cat/index.php>.

TAÇDAM (Centre of Research and Assessment of Historical Environment—Middle East Technical University) provides access to information about the surveys and other archaeological projects carried out in the salvage programs of south-east Turkey at <http://www.tacdham.metu.edu.tr/>.

On a more ambitious scale, the *Mediterranean Archaeology GIS* at DePauw University is making metadata available from hundreds of surveys across the Mediterranean at <http://cgma.depauw.edu/MAGIS/>.

Many of the surveys discussed in this article also make rich information widely available through their project web sites, listed here: *Avkat Survey*: <https://www.princeton.edu/avkat/index.xml>; *Amuq Valley Survey*: <http://oi.uchicago.edu/research/projects/amu/>; *Miletus Chora Survey*: <http://www.ruhr-uni-bochum.de/milet/in/chora.htm>; *Central Lydia Archaeological Survey*: <http://www.bu.edu/clas/>; *Project Paphlagonia*: <http://www.ucl.ac.uk/paphlagonia/>; *Rough Cilicia Archaeological Survey*: <http://visiblepast.net/see/cilicia/rough-cilicia-overview/>; <https://engineering.purdue.edu/~cilicia/>; *Sagalassos Survey*: http://www.sagalassos.be/en/research/surveys/territorial_survey/; *Sinop Regional Archaeological Project*: <http://www.nml.cuny.edu/srap/>.

Journals of an Armchair Archaeologist (or, *Some of the 7,000 Reasons to Join the Director's Council*): To Armenia via Russia

PATTY CIVALLERI¹



As one of the early members of the Director's Council (DC), I have enjoyed the pleasure of trekking to some of the more remote, exotic, and even mythical places on earth. I have done so as a guest of many of the professors of archaeology and cultural history from the elite Cotsen Institute of Archaeology at UCLA. Over the past decade we have explored ancient rock art in nearby places such as Little Lake in California, Chaco Canyon in New Mexico, and the most famous examples of rock art in the world: the giant and mysterious Moai statues on the remote Easter Island. In addition, we have journeyed to many ancient havens of archaeology such as Egypt, Bolivia, Peru, China, Greece, and, most recently, to Russia and Armenia.

The Director's Council was formed to entice nonacademics/nonarchaeologists (newbies—such as myself) to form a group of “armchair archaeologists” from the community, those who have taken different paths in life but have held dear a love of cultural history. The DC has grown into a group of individuals who love the depth of knowledge gained from traveling with the real experts—enabling us to glean from a far deeper source of information and experience than we could ever hope for on a “regular” commercial tour. The members provide an unprecedented form of support to the ongoing research and educational efforts of the Institute as well. In return, its members enjoy several exclusive dinners and lectures each year on campus that feature distinguished speakers from active excavations and research sites from all over the world. Which brings me to my main point . . .

Approximately three years ago, as DC members, my husband Roger and I attended a wonderful Institute dinner-lecture given by the esteemed Dr. Gregory Areshian about his ongoing research and discoveries in the remote cave called Areni-1 in the faraway country of Armenia. He and his colleagues had found in this cave, among other things, the world's oldest leather shoe, the oldest wine press (complete with desiccated grape seeds and skins still attached to stems) dating back six thousand years, and even an intact human brain! During dinner that evening, he told stories that took our breath away: stories of the lives of the ancients who used this cave over the millennia, as a ritual site and who knows what else. We were so enraptured with his tales of long ago that we asked (invited ourselves!) if we could possibly someday join him in Armenia to see this cave with our own eyes. With his characteristic warm and gracious smile, he asked, “When would you like to leave?”

¹ Director's Council member, Cotsen Institute of Archaeology, UCLA.



Hermitage Museum Director Mikhail Piotrovsky arranged for our day-long trip to the famous Peterhof Palace—sometimes called the “Versailles of Russia”—the eighteenth-century summer palace of the Russian emperors on the southern coast of the Gulf of Finland. Founded by Peter the Great, Peterhof was used only to entertain guests, never as a residence. Today this complex of palaces and gardens is recognized as a UNESCO® World Heritage Site.

Fast forward to this past September 2011...



In the Office of the Director of the Hermitage, Mikhail Piotrovsky (fourth from left). Housed in five different palaces of imperial Saint Petersburg, the State Hermitage Museum features more than three million items that represent the development of world culture and art from the Stone Age through the twentieth century.



Kecharis Monastery (eleventh–thirteenth century C.E.) in the forests of the modern ski resort town of Tsakhkadzor. Christian architecture of the medieval times is the most distinguished feature of the Armenian civilization from the fifth through the first half of the fourteenth century.



Tghit is a Late Bronze and Early Iron Age (fifteenth–tenth century B.C.E.) cyclopean fortress sometimes referred to as the Machu Picchu of the Caucasus. An extremely difficult place to reach, we rode up in a UAZ Russian military vehicle until the river boulders got too big to traverse comfortably. So we simply walked the rest of the way up to this beautiful site that overlooks Mount Ararat in the remote distance.

Dr. Areshian escorted our small contingent of DC members through Moscow and St. Petersburg, then on to Armenia. This group included Harris and Margaret Bass, Charles Steinmetz, Emily Kantrim, Roger Civalleri, and myself. Once in Armenia, we were joined by Cotsen Institute Director Charles Stanish and his Armenian project codirector, the Director of the Institute of Archaeology and Ethnography of the National Academy of Sciences of Armenia, Pavel Avetisyan; Laura Steinmetz; Cotsen Institute graduate student Kristine Martirosyan-Olshansky; and Cotsen Institute doctoral student Lyssa Stapleton.

It's natural to start an archaeological trip to Armenia by visiting the art and archaeology collections of the Hermitage Museum of Saint Petersburg in Russia, second in size only to the Louvre in Paris. The Hermitage conducted extensive archaeological research in Armenia, spearheaded by its two long-term directors, distinguished Near Eastern archaeologists Joseph (Iosif) Orbeli (Hermitage director in the 1930s–1940s) and Boris Piotrovsky (the director in the 1960s–1980s). Because Gregory had been Boris Piotrovsky's disciple and doctoral student, we had unprecedented access to closed collections and back rooms, in addition to the wealth of exhibitions and displays. The current director, Mikhail Piotrovsky, son of the late director, invited us into his office for a visit after we spent a delightful day in that immense treasury of world civilization.

After spending the first week in Russia, the second week was spent in Armenia, where we trekked each day to several archaeological sites scattered throughout the Armenian countryside and coastal regions around Lake Sevan. Because some of the sites have no formal roads leading to them, we hiked

for miles each day over boulders, up cliffsides, and through riverbeds. Roger and I were able to spend two nights in a local farmhouse bed-and-breakfast with a wonderful family with whom we are still in contact. The others in the group chose to stay overnight in a hotel that is literally steps away from the famous cave of Areni-1. Having a private tour of the cave and a thorough explanation of all of the artifacts while standing in front of the trenches was an amazing experience. Chip Stanish joined us in visiting the National Museum of History of Armenia in Yerevan, where we were able to see “the shoe”! Director Anelka Grigoryan granted us an exception to photograph within the museum, and Gregory showed us the many artifacts and scale models of sites around Armenia that we had already visited, which helped complete the picture of the culture we were learning about. On one of our last evenings together, our group had dinner with Chip's Armenian excavation's codirector, Pavel Avetisyan, and once again we were treated to an insider's view on the international cooperation between these institutions.

The experience was educational, enlightening, and quite healthy (some of us lost a few pounds on this trip!). But most of all, Cotsen Institute archaeologists assuaged our wanderlust and thirst for all things archaeological, as we all came home to California with an enhanced perspective of Armenia, Russia, the world, and, most of all, of ourselves. And for this we will always be indebted to our wonderful friends at the Cotsen Institute. ✨

If you are interested in more information regarding the Director's Council and the Friends of Archaeology, please contact Helle Girey (foa@cioa.ucla.edu).

INSET BELOW: Garni Temple:
Our first day of exploration set a really exciting tone to the trip. We ventured east from Yerevan to visit the royal summer residence of the Armenian Arsacid Dynasty (Late Roman period, mostly early third century C.E.). On the way, Charlie Stienmetz whispered, "You'll think we're in Greece." I didn't know what he meant until we saw the beautiful temple in Ionic-Roman style rising on the edge of the enormous canyon of the Azat River and surrounded by the remains of palace and monumental fortifications.



Roman-style bathhouse with mosaic floor in the Arsacid palace at Garni, early third century C.E.

RIGHT: From Garni, we proceeded to one of the most astonishing structures I have ever seen—the Geghard Monastery. This large thirteenth-century monastery is disguised from passersby, for it was carved into the stone cliffs deep inside a canyon. The interior consists of several churches, tombs, and a multitude of prayer caves, all with a defensive wall around the exterior. *Geghard* is the Armenian word for *lance* or *spear*. It is said that the lance that pierced the body of Jesus Christ during the Crucifixion was kept here before being transferred to the Holy See of the Supreme Patriarchs of the Armenian Christian Apostolic Church in Echmiadzin. Today, Geghard enjoys UNESCO® World Heritage Site status, and because it is a convenient day trip from Yerevan, it is appreciated by students and tourists alike.





LEFT: Tghit. Cyclopean tower flanking the gate of the Late Bronze Age citadel.



INSET: Church of Saint Hripsime in Vagharshapat (Echmiadzin), early seventh century C.E.

BELOW: Zvartnots Cathedral near Vagharshapat, mid-seventh century C.E. This structure was built to dwarf all other Christian churches and cathedrals in the Caucasus by its sheer grandeur. Today, although reduced to the remains of the first floor and columns that you see here, Zvartnots is still among the most spectacular historical sites in Armenia and lends its name to the international airport in Yerevan.



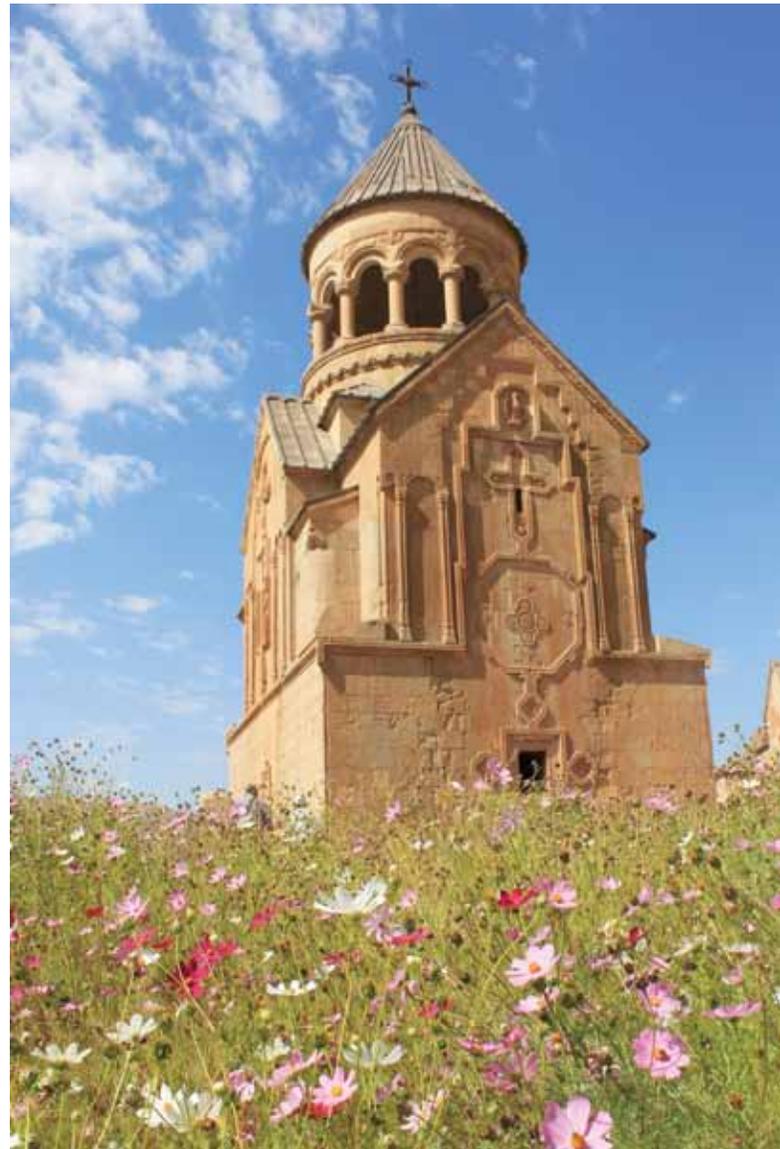


ABOVE: Central hall of the Selim Caravanserai (road inn) in the Selim pass (8,000 feet above sea level). Built in 1332 C.E. by the Orbelian family of Armenian grand princes, this unique structure represents the final period of the existence of the system of "Silk Roads." We traveled through valleys, plains, high elevation passes through mountain ranges, orchards, forests, and semi-deserts, always amazed by the diversity of the natural and historical environments of Armenia.



ABOVE: Lyssa Stapleton receives fruits from our new friends in Aragyugh. Continuing down the mountain from Tghit, we reached the Aragyugh village, where we met a local woman walking down the road who invited us into her home. Once there, her family began to bring out the food and the rich and delicious Armenian coffee. Upon leaving, our new friends gifted us with fruit from their trees, and off we went toward Yerevan. The beauty of this experience was in its spontaneity.

RIGHT: Noravank Monastery, mausoleum of the Grand Prince Burtel Orbelian and his family. The chapel of the Virgin Mary forms the second floor and the bell tower the third. It was designed by the architect and sculptor Momik and completed in 1339 C.E.





LEFT: Khachkars (cross-stones) at the Kecharis Monastery. Khachkars were erected on different occasions: to commemorate political events, military victories, major construction projects, but most often as funerary monuments.



Excavations under the rock-shelter before the mouths of the three galleries of the Areni-1 cave complex, Vayots Dzor Province of Armenia. Areni-1 was the highlight of our journey (and the main reason why we were in Armenia to begin with). Along the way, we visited the incredible dig site at Dvin, which is nearly three times larger than the City of Troy.

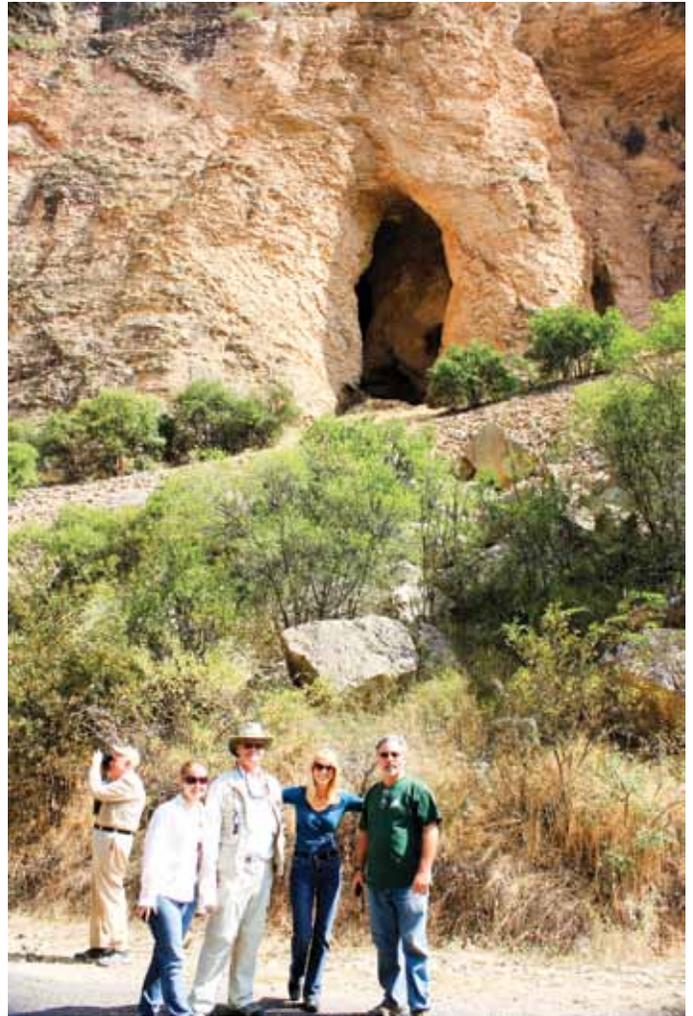


Charles Steinmetz (right) and Roger Civalleri exploring the excavated area of Trench 2 inside the Central Gallery of the Areni-1 cave complex. With the real world outside, I marveled at the fact that I was walking through some 6,000 years of naturally preserved human history. The items that have gained worldwide acclaim are the world's oldest leather shoe and the remains of the oldest wine press.

INSET: The famous shoe dating back 5,500 years on display at the National Museum of History of Armenia.



Jewish cemetery in Eghegis. During the Mongol domination of the second half of the thirteenth and early fourteenth centuries C.E. many principalities of Armenia experienced economic and cultural prosperity. This attracted immigrants from other countries.



Standing in front of enormous unexplored caves in the Noravank Gorge. There are dozens of unexplored and yet-to-be-discovered caves in the Vayots Dzor Province of Armenia.



In the office of the Director of the National Museum of History of Armenia. Front row, right to left: Anelka Grigoryan, Laura Steinmetz, Margaret Bass, Emily Kantrim; back row, right to left: Pavel Avetisyan, Charles Stanish, Gregory Areshian, Roger Civalleri, Harris Bass, Charles Steinmetz.



Cotsen Institute of Archaeology Open House 2012

High school students by the busload, college students with their professors, families with children, and many curious adults were at the A level of Fowler punctually at 1 pm. Outside in the Amphitheater they could see Lana Martin operating the flotation machine, separating small lightweight organic matter from the dirt. Terisa Green, our graduate from 1999, was flintknapping black obsidian into bifaces. The Bruin Bear, from the Spirit Squad at UCLA, was making the rounds, and everyone wanted to have a picture taken with him. Charlie Steinmetz was in top form introducing stone tools to the appreciative audience of high school students. Once inside, the visitors were handed maps of the laboratories, display rooms, and the very popular children's activity room. There were some pretty tall children in that room who were having a good time deciphering Egyptian hieroglyphics and learning how to wrap a mummy!

The lecture by Professor Kara Cooney, Department of Near Eastern Languages and Cultures at UCLA, entitled "The Apex of Mummification in Ancient Egypt," filled every seat in our 325-seat auditorium.

This year the open laboratories were the Anatolian, Ceramic Analysis Research, Chilean, East Asian, Egyptian, Mediterranean, Old Stone Age, South Asian, Southwest, Zooarchaeology, Mesopotamian, and Rock Art Archive. We also had the Virtual Reality Demonstration and a DVD room for people worn out by the panoply of activities, who could watch archaeological and ethnographic films.

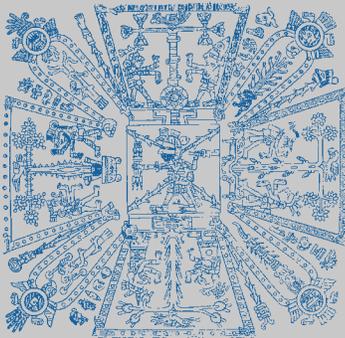
The comments overheard were all very similar—many were surprised that they

Friends of Archaeology Dinner Lectures 2012–13

Open to members of the Cotsen Institute of Archaeology support group—Friends of Archaeology (FoA).

For information regarding joining FoA, please visit:

<http://www.ioa.ucla.edu/support/foa>



23 October 2012

Reception and dinner at the Fowler Museum Terrace with Professor Karl Taube, University of California—Riverside, distinguished scholar on pre-Columbian cultures of Mesoamerica.

After dinner public lecture by Professor Taube in Lenart Auditorium.

"Ancient Maya Calendars, Cosmology and Creation: 2012 and Beyond"

15 January 2013

Reception and dinner at the Sequoia Room, Faculty Center.

Lecture by Professors Giorgio Buccellati and Marilyn Kelly-Buccellati, Near Eastern Languages and Cultures and Cotsen Institute of Archaeology.

"In the Eye of the Storm: Our Presence in Syria, 2011–12"

30 April 2013

Reception and dinner at the Sequoia Room, Faculty Center.

Presentation by three of our top doctoral candidates from the Archaeology Graduate Program at Cotsen Institute of Archaeology.

"Academic Excellence at the Cotsen Institute"



did not know what was under the Fowler Museum, others marveled at the diversity of work done at the Institute. The enthusiasm of faculty and graduate students staffing the laboratories was infectious, each and every one trying to impress our visitors with the quality and excitement of their research.

The 2013 Open House will be on 4 May 2013. Check our webpage for details at www.ioa.ucla.edu.

—Helle Girey, *Cotsen Institute of Archaeology, UCLA.*

Cotsen Institute of Archaeology Public Events 2012

6–7 January

New Perspectives on Chinese Archaeology An International Symposium

Cotsen Institute of Archaeology and Center for Chinese Studies, UCLA

Liu Li (Stanford University)
Li Xinwei (Institute of Archaeology CASS)
Yan Yunxiang (UCLA)
Li Min (UCLA)
Kuei-chen Lin (UCLA)
Shang Yantao (South China Normal University)
Lang Jianfeng (Shandong University)
Yuan Yanling (Chongqing Normal University)
Anke Hein (UCLA)
David Schaberg (UCLA)
Hanmo Zhang (UCLA)
Guolong Lai (University of Florida)
Lothar Von Falkenhausen (UCLA)
David Schaberg (UCLA)
Norman Yoffee (University of Michigan)

Keynote lecture 1 by Liu Li, Professor of Archaeology, Stanford University.

Keynote lecture 2 by Norman Yoffee, Professor Emeritus, University of Michigan.

11 March

“Excavating at the Ancient Port of Constantinople”

Lecture by Dr. Ufuk Kocabaş, Director of Istanbul University’s Yenikapi Shipwrecks Project; cosponsored by the Archaeological Institute of America.

13 March

“New Views on the Art and Architecture of the California Missions”

Lecture by Dr. Julia Costello, Foothill Resources.

14 April

“A License to Loot or Archaeological Rescue: The Treasure Act and Portable Antiquities Scheme in England and Wales”

Lecture by Dr. Roger Bland, Department of Portable Antiquities and Treasure, The British Museum; cosponsored by the Archaeological Institute of America.

12 May

Cotsen Institute of Archaeology OPEN HOUSE

Visit our laboratories and archives, see virtual-reality demonstrations, and hear lectures by our faculty.

23 October

“Ancient Maya Calendrics, Cosmology and Creation: 2012 and Beyond”

Lecture by Professor Karl Taube, University of California—Riverside.

4 December

“Settlement Pattern Studies and the Emergence of the Current Model of Ancient Maya Civilization”

Lecture by Dr. Jeremy A. Sabloff, President of the Santa Fe Institute.

Noon Talks

The 2011–12 academic year was yet another successful one for the Cotsen Institute of Archaeology's weekly Pizza Talk lecture series. These informal talks give members of UCLA's archaeological community the opportunity to share their recent or ongoing research in a supportive forum of interested, top-notch archaeological scholars and receive feedback to help them refine their work moving forward or assist them in preparing presentations for upcoming conferences or more formal talks.

Many of UCLA's graduate students take advantage every year of the opportunities the Pizza Talks provide, and this year was no exception. Cotsen IDP graduate students Joseph "Seppi" Lehner, Evan Carlson, and Myles Chykerda each presented their research. Other archaeology graduate students from affiliated departments at UCLA participated in the Pizza Talk series as well, including Eric Fries (Anthropology), Ece Okay and Michael Rocchio (Architecture & Urban Design), and Amy Karroll (Near Eastern Languages and Cultures).

Some of the major highlights of this year's Pizza Talk series included such dynamic audience favorites as Professor Jacco Dieleman (UCLA-NELC) on "Egyptian Burial According to the Artemis Liturgical Papyrus"; Professor John Papadopoulos (UCLA-Classics) on "Framing Victory: Salamis, the Athenian Acropolis, and the Agora"; Professor Kara Cooney (UCLA-NELC) on "Coffin Reuse in the Twenty-First Dynasty: Evidence from Egyptian Collections in Northern Europe and Italy"; Professor David Scott (UCLA/Getty Conservation Program and Department of Art History) on "Modern Antiquities: The Looted and the Faked"; as well as Vanessa Muros (UCLA/Getty Conservation Program) on "Holy Mammoth, Batman! Conservation Education and Outreach for the Preservation of a Columbian Mammoth"—and many others too numerous to name.

Because many of UCLA's archaeology students recently advanced to candidacy and will conduct dissertation research during the summer 2012 field season, and because of the great deal of exciting work being carried out by our archaeological faculty, the Cotsen community eagerly looks

forward to yet another interesting batch of Noon Talks to debut in the academic year 2012–13.

—*Kathryn Chew, Cotsen Institute of Archaeology, UCLA.*

International Symposium: New Perspectives on Chinese Archaeology

Organized under the joint auspices of the Cotsen Institute of Archaeology and the Center for Chinese Studies, an international symposium on "New Perspectives on Chinese Archaeology" was held at UCLA on 6–7 January 2012. Professors David Schaberg (Dean of the Humanities, UCLA) and Yunxiang Yan (Director for the Center for Chinese Studies, UCLA) gave the introductory speeches for the conference.

To highlight the importance of research in Chinese archaeology and its relevance for archaeological research in a comparative perspective, the conference featured two keynote speakers. Professor Liu Li, a prominent scholar of the archaeology of China (Stanford University) and Professor Norman Yoffee, a leading scholar on archaeological theory and Near Eastern archaeology from the University of Michigan. In her keynote lecture entitled

"Archaeology under a Microscope," Professor Liu demonstrated the enormous potential of residue and use-wear analysis for the study of the material culture from early China (Fig. 1). Professor Yoffee's keynote speech, "Early Cities and the Evolution of History," concluded the conference by placing the evolution of early Chinese cities in a comparative perspective, one in which he highlighted the "fragility" of the proto-urban development in early China during the second millennium B.C.E.

Scholars from Chinese and American universities as well as faculty and graduate students from UCLA presented their research papers on three major areas of Chinese archaeology (i.e., prehistoric archaeology, Bronze Age archaeology, and the study of the intersections of material culture, archaeology, and cultural memory). As Yan Yunxiang pointed out in the opening speech, the symposium highlighted the intellectual legacy of the late Professor K. C. Chang, whose influence on Chinese archaeology is apparent both by the number of presenters in the room he and his students trained and by the research orientation of many presentations.

The presentations in the prehistoric archaeology group dealt with highland adaptation and interregional interactions. Jeff Brantingham's (UCLA) presentation discussed the date and impetus for the



Figure 1. Professor Li Xinwei, Chinese Academy of Social Sciences (left); graduate student Lin Kuei-Chen, UCLA (center); and Professor Jeff Brantingham, UCLA (right), shared the podium at the conference. Photo Ellen Hsieh.

colonization of the Tibetan Plateau during the Neolithic period. The issues of prehistoric interaction and exchange in western China were pursued by two case studies on the Sichuan region: Anke Hein's (UCLA) presentation on "Movements along the Western Part of the Crescent-Shape Exchange-Belt—The Prehistoric Liangshan Region as a Multi-Cultural 'Intersection'" provided a comprehensive case study on the western highland regions of Sichuan; Lin Kuei-chen's (UCLA) report on ceramic analysis and its relation to craft production in the Chengdu Plain focused on the trade network associated with the ceramic industry inside the Sichuan basin (Fig. 2). Both presentations represent the current research by these advanced graduate students from UCLA. From a macro-regional perspective, Li Xinwei's (Institute of Archaeology, CASS) paper, "Old Model, New Evidence: Rethinking the Chinese Interaction Sphere," elaborated on K. C. Chang's model of the prehistoric Chinese Interaction Sphere by stressing the elite network for the exchange of prestige goods and esoteric knowledge during the late fourth millennium B.C.E.

The Bronze Age group featured three visiting scholars from China. Lang Jian-feng's (Shandong University) presentation on "The Religious Belief of the Lower Reaches of Changjiang River in the Bronze Age" traced the resilience of a ritual performance involving a distinctive type of cylinder in southern China since the third millennium B.C.E. In his paper on "The Military in Western Zhou Bronze Inscriptions," Shang Yantao (South China Normal University) investigated the structure of Zhou military organization based on his analysis of bronze inscriptions. Yanling Yuan's (Chongqing Normal University) discussion of the "Manufacturing Organization of Chu Style Bronzes" focused on typology, techniques, and décor. These presentations are representative of the on-going research efforts of the younger generation of scholars from China.

The last group worked on the intersections of text, archaeology, and material culture. Lai Guolong's (University of Florida) presentation on early Chinese screens from archaeological contexts explored the intersections between body



Figure 2. Keynote speakers Professor Liu Li, Stanford University (center), and Professor Norman Yoffee, University of Michigan (right), engaged in discussion with the speakers. Photo Ellen Hsieh.



Figure 3. Professor John Papadopoulos (center), classical archaeologist and Chair of the Archaeology IDP program at UCLA, brought a comparative perspective to early China. Photo Ellen Hsieh.

techniques, space, and the discourses of political authority. The entangled relationship of power, text, and material culture was explored in Hanmo Zhang's (UCLA) presentation entitled "The Writing in the Wall: Talismanic Uses of Manuscripts," and offers a fresh and provocative interpretation of the nature of excavated texts. Finally, the presentations by two conference organizers focused on the intersection of archaeology and cultural history. Lothar von Falkenhausen's (UCLA) presentation on "Sidelights on Chinese Antiquarianism" explored the practice and intellectual history of antiquarianism in historical China. Li Min (UCLA) investigated the cultural remembrance in a Bronze Age city through diverse mediums in his "Storytellers in the Bronze Age China: Ancestral Landscape, Heirlooms, and Techniques."

The well-attended international symposium generated intellectually engaging discussions from an audience within and beyond the Chinese archaeological community (Fig. 3). The participants and organizers would like to express their sincere gratitude to Helle Girey and Jill Silton; the success of the symposium would not have been possible without the enormous contribution of these two great Cotsen volunteers. We would also like to thank the Cotsen Institute of Archaeology, the Center for Chinese Studies, UCLA, and the Henry Luce Foundation for their support of both the conference and the East Asian Archaeology Program at UCLA.

—Li Min, *Department of Anthropology; Department of Asian Languages and Cultures; and Cotsen Institute of Archaeology, UCLA.*

Friday Seminar Series

The Cotsen Institute Friday Seminar Series takes the form of a symposium in which scholars from across the world are invited to share their most recent research that is relevant to various themes selected by the graduate students. This year, our three diverse themes included “Environmental Archaeology” in the fall quarter, “Methodology” in the winter quarter, and “Identity” in the spring quarter.

Our fall seminars witnessed high audience attendance from the Cotsen community of scholars, namely due to the excellent talks delivered by our guests. At the top of the lineup was Harvey Weiss (Yale University), who delivered a synthesis of Old World human adaptation to climate change in the Near Eastern Bronze Age, mostly from the perspective of precipitation or water availability and drawn from his work at Tell Leilan in Syria. Naomi Miller (University of Pennsylvania) presented archaeobotanical, archaeological, and ethnographic data also from the Near Eastern Bronze Age based upon her long-term work at Malyan in Iran. Melinda Zeder (Smithsonian Institution) discussed the origins of agriculture and livestock domestication in the Near Eastern Neolithic based upon both decades of compiled and cutting-edge palynological, zooarchaeological, and genetic research. Finally, our own Gregory Areshian concluded the quarter with a discussion of the social behavior and both centralized (sedentary) and decentralized (pastoralist) organization that human groups chose when faced with environmental stress.

This winter quarter we were lucky to have four great talks on a variety of topics. Norman Yoffee (University of Michigan) spoke on “The Evolution of Fragility,” a cross-cultural examination of stability and instability in early cities and states. Ortwin Dally (Deutsche Archäologisches Institut) presented on the recent excavations at the Greek settlement of Taganrog on the Russian Sea of Azov. Eric and Sarah Whitcher Kansa (Alexandria Archive Institute) spoke on the growing role of data sharing in archaeology. For our final talk of the quarter, Orhan Bingöl (Ankara University) presented his work on reconstructing the architecture of the Temple of Artemis at Magnesia-on-the-Meander in Anatolia.

The seminars of spring quarter were mostly focused on how archaeological studies might elucidate social and personal questions of “self” and “other.” Wolf-Dietrich Niemeier (Deutsches Archäologisches Institut) presented on his recent excavations at the Greek sanctuary at Kalapodi, including evidence for over 1,000 years of cult continuity. Levent Atici (University of Nevada, Las Vegas) presented on the relationship between animal exploitation and sociopolitical organization at Kültepe Kanesh in Turkey. Joseph Greene (Harvard University) discussed the convergence of osteoarchaeological and textual evidence for ritualized infanticide from Phoenician and Punic Carthage. Finally, Cynthia Colburn (Pepperdine University) presented aspects of her ongoing work on identity, ritual, and adornment in Prepalatial Minoan Crete.

—Brett Kaufman, Hannah Lau, and Catherine Pratt, Cotsen Institute of Archaeology, UCLA.

Second Annual Graduate Student Conference

On 3 March 2012 the Archaeology Graduate Student Association hosted the second annual Archaeology Graduate Student Conference, organized by third-year student Hannah Lau. This all-day event featured twelve talks by graduate students in the Southern California area. Participants from UCLA came from the Archaeology IDP, the UCLA/Getty Conservation program, the Near Eastern Languages and Cultures department, and the Art History department. Students from UC Santa Barbara’s Anthropology department and USC’s Classics department also gave talks. Topics ranged from prehistoric China and Anatolia to Renaissance Italy and Evedland-period Central Illinois River Valley.

—Hannah Lau, Cotsen Institute of Archaeology, UCLA.

Conflict and Cooperation in the Northern Titicaca Basin

ABIGAIL R. LEVINE¹

THE TITICACA REGION

The circum-Titicaca region is a large geological basin situated between two mountain ranges, the Cordillera Blanca and the Cordillera Real, and spans the modern political border between southern Peru and northern Bolivia (Fig. 1). The entire drainage is quite large, covering over 50,000 km²—an area that is more than twice the size of Belize (Fig. 2). The lowest point in the region is the surface of the lake itself, which sits at 3,810 meters above sea level; this high altitude produces a general environment that is cold, windy, and stark (Fig. 3). Nearly 1,000 milliliters of rainfall per year compressed into a four-month rainy season nevertheless makes the region an extremely productive agricultural zone that is well-suited to the intensive cultivations of tubers, such as potatoes, and some grains, such as quinoa. Vast grasslands support large herds of camelids, which are important sources of wool and meat, while the lake provides abundant fish, reeds, and aquatic birds. Quaternary geological formations provide numerous mineral and rock resources, including limestone, sandstone, and an array of fine-grain volcanics, as well as metals such as copper and silver (Burger et al. 2000). These favorable conditions form an important backdrop for life in the *altiplano* region and, together with demographic circumscription, allowed the Basin to become one of the few places in the world where complex societies independently developed. The region was home to a number of increasingly complex polities, including Pukara, Taraco, and Khonkho

Wankané, which exhibited many characteristics of state level societies (Stanish 2003). It may be argued that this trajectory culminated in the formation of the Tiwanaku state in the southern Titicaca Basin circa 600 C.E.

CHRONOLOGIES: NORTH VS. SOUTH

Over the last generation or so, archaeologists have come to recognize that the far northern and far southern areas of the Lake Titicaca Basin were the two areas of the most intense and earliest cultural development. Early archaeological studies of Titicaca Basin chronology assumed a homogenous culture

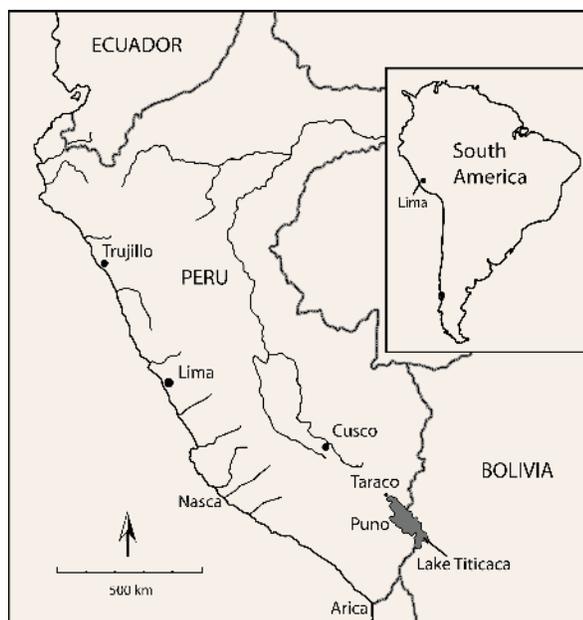


Figure 1. The Titicaca Basin and South America.

¹ Cotsen Institute of Archaeology, UCLA.

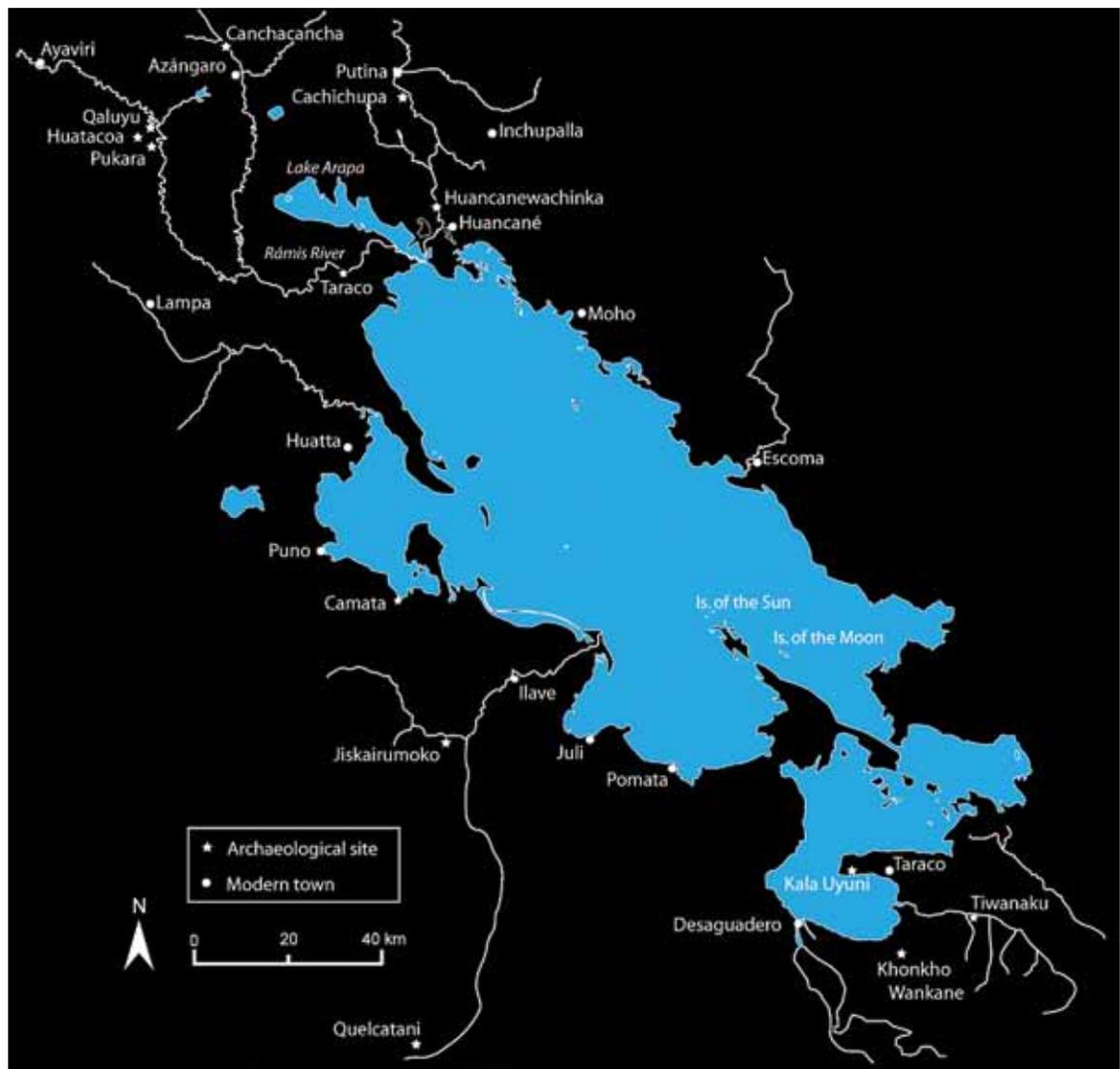


Figure 2. The Titicaca Basin.

history for the entire region (Bennett 1934, 1936). As research progressed, however, scholars noted that the chronologies for the northern and southern sides of the lake followed divergent trajectories, despite some overlap in documented styles (Kidder 1948; Rowe 1956). Recent research has confirmed that the Titicaca region was home to similar, yet relatively independent, geopolitical spheres.

Archaeologically, there are observable differences in the culture histories and settlement patterns of the northern and southern basins, which are conventionally divided by the Ilave River in the west, and the Escoma River in the east (Plourde and Stanish 2006). Recent work suggests that this north-south distinction may be seen as early as the Archaic Period, circa 2500 B.C.E. (Cipolla 2005). Subsequent to these earliest occupations, the earliest ceramic traditions in the north, appearing circa 1400 B.C.E.,

are characterized by mineral tempers, which aids in distinguishing them from the fiber-tempered wares produced in the south at this time (Steadman 1995). While this difference has no functional explanation, it is yet another important reflection of the divergent preferences of these relatively autonomous geopolitical spheres.

The differences between the northern and southern Titicaca areas are especially pronounced in their culture histories and also in the radiocarbon record for the regional polities that ultimately come to define each region. In the southern area Tiwanaku, with its core territory in the Tiwanaku, Katari, and Desaguadero Valley regions, represents the most complex political entity to develop in the Titicaca region (Janusek 2008). However, by the time Tiwanaku expanded beyond its heartland (ca. 600 C.E.), Pukara, the major polity of the north, had



Figure 3. The vast grasslands of the *altiplano*.

long since reached its peak (ca. 100–200 C.E.), and collapsed (ca. 400 C.E.). In the north, the Tiwanaku period corresponds with “Huaña,” a loosely aggregated polity lacking a recognizable fine pottery style (Stanish 2003). Moreover, systematic survey has indicated that north of the Ilave River, the Tiwanaku settlement system deviated significantly from that of the heartland. In the north, Tiwanaku settlement was characterized by discontinuous settlements that are associated with roads and areas that would have been seasonally inundated, a pattern that was well-adapted for the exploitation of natural resources and the movement of trade goods (Plourde and Stanish 2006).

THE MIDDLE AND UPPER FORMATIVE PERIODS

Regional political centers emerged in the northern Lake Titicaca Basin during the late Middle (ca. 1300–500 B.C.E.) and early Upper Formative (ca. 500 B.C.E.–400 C.E.) periods. The Middle Formative is represented by the development of the first ranked societies, which are known collectively and stylistically as Qaluyu, named for the type-site in the northwestern Basin (Plourde 2006; Plourde and

Stanish 2006). This period is associated with highly burnished, elaborately decorated serving wares, as well as the Yaya-Mama religious tradition, which is often considered the first pan-Titicaca Basin elite ideology (Stanish 2003). This tradition is characterized by a suite of features, which include a ritual ceramic assemblage, stone sculpture, and sunken court architecture (Fig. 4). Stone stelae carved in this style—often reaching several meters in height—have been found throughout the Titicaca region, often in association with ritual architecture and paraphernalia, such as incense burners and trumpets (Chávez 1988; Chávez and Chávez 1975).

Middle Formative behavioral trends (favoring supra-household, cooperative labor and increased elite activities) become elaborated during the Upper Formative with the formation of the first territorially expansive polities (Stanish 2001). By the latter half of the Upper Formative, most northern populations fell under the influence of Pukara, located in the northwestern Basin (Fig. 5). Long recognized as a major civic and ceremonial center, the site has been described as “one of the larger, if not the largest, center of a northern Titicaca basin culture” (Kidder 1948: 89). By 500 B.C.E., Pukara was producing a distinctive, elaborate art style including iconic,



Figure 4. Yaya-Mama Stela from Taraco, Peru.

zone-incised polychrome ritual objects; however, by no later than 400 C.E., construction on the site had ceased, along with the manufacture of this art style (Mujica 1987).

In the northern Basin, regional political centers are recognizable by the presence of multiple sunken court complexes that are often associated with elaborately carved stelae and monoliths. These earliest centers would have hosted feasts, markets, and

rituals that brought people together from smaller neighboring villages. By 2500 years ago, a number of these centers had developed in the region, scattered across the *pampa* some 20–25 kilometers apart. While residents of these centers competed for resources and allies, they were also highly cooperative, actively trading a host of high-status and exotic goods, and periodically gathering for feasts and ceremonies (Stanish and Levine 2011).

Regional settlement data suggest that over time, there were fewer and fewer regional centers, but the ones that remained were larger and more powerful than anything that had previously existed. Of the numerous centers that characterized the region circa 500 B.C.E., only two—Taraco and Pukara—emerged as major political centers during the Upper Formative. In anthropological terms, these shifts in settlement pattern and hierarchy correspond with changes in risk acceptance, the development of more permanent and more powerful forms of leadership, and increasing economic specialization. Few studies, however, have addressed the mechanism behind this important societal shift. New data from the site of Taraco have shed light on the processes associated with the emergence of complex polities in the northern Basin during the late Middle and early Upper Formative periods. These data help explain the relatively rapid formation of regional centers after several millennia of living as mobile hunter-gatherers, and allow us to examine both how and why Pukara became the single dominant polity in the region.

TARACO: BACKGROUND AND PREVIOUS RESEARCH

The archaeological site of Taraco is located on the Río Rámis in the far northern Lake Titicaca Basin, approximately fifteen kilometers from the lake, in the eponymous modern town. Taraco's location follows the pattern for Middle and Upper Formative settlements found in the adjacent Huancane-Putina region, in which the majority of sites are located on the *pampa* near rivers, or at the base or along the side of hills. Both locations suggest a preference for wetlands or wetland resources during this time. The modern town of Taraco is renowned for the quantity and quality of its monoliths carved in the Yaya-Mama style, although—as is the pattern for Formative sites around the region—few remains of the site stand today. Scholars have long noted the signifi-



Figure 5. Sunken court complex at the site of Pukara.

cance of the Taraco site area; Alfred Kidder (1943) and Sergio Chávez and Karen Chávez (1975) have discussed Taraco's monoliths, while others, including Marion Tschopik (1946), Elias Mujica (1978), Luis Lumbreras (1968) and John Rowe (1942), have published comments on the site.

A regional survey conducted by Charles Stanish and colleagues indicated that Taraco was an important regional center during the Middle and early Upper Formative periods. In the systematic survey of more than a 1,000-km² area in the Huanacané, Putina, Taraco, and Arapa zones, the mound at Taraco stands out due to its comparatively large size (Stanish and Umire 2004). A dense cluster of contemporary settlements, linked by a network of causeways, surrounds the principal mound. Together, these mounds form the Taraco site complex. As represented by the survey data, the entire area of Qaluyu and early Pukara occupation totals well over a hundred hectares, providing key evidence that Taraco was a major central place, and, along with Pukara, one of two principal centers competing for regional dominance during this time.

Three seasons of excavation at Taraco focused on a large artificial terrace, known as Area A, situated just below the highest part of the modern town. During the Formative, this would have been the elite residential sector of the site, and surface collections in this area indicated high densities of finely made pottery and obsidian, which are generally indicative of high-status locales or workshop areas where these items would have been produced. Subsequent excavation revealed a stratified cultural sequence reaching nearly four meters in depth, with the earliest levels dating to 1150 B.C.E. The earliest three occupational phases date to the Formative Period, and have been termed Phase 1 (the earliest), Phase 2, and Phase 3. Each of these phases was associated with a building made of fine stone, with the later two compounds superimposed over the earlier constructions (Fig. 6). Floors were composed of fine prepared clay that was often reddish in color. These were interspersed with layers of ash, indicating that they were periodically burned and relaid. These occupational phases, while domestic in character, were also associated with significant quantities of



Figure 6. Excavation unit at Taraco showing three levels of Formative Period construction. The wall in the center of the unit was associated with a massive burn event in the first century C.E.

highly decorated ceramics, exotic materials, such as obsidian, and ritual paraphernalia, including trumpets and incense burners. The additional cleaning of two river-cut profiles, each measuring thirty-five meters in length, provided transects of the mound, and demonstrated that the occupational sequence, discovered in the excavated units, was an example of a general pattern repeated across a very large area of the terrace.

The third phase of the Formative occupation dates to the Upper Formative and corresponds with early Pukara; it represents the highest level of sociopolitical complexity achieved in the Taraco region. This occupation, which included several structures composed of finely cut stone, was destroyed in a major burn event. Evidence from this burn was detected in all areas that were tested, including each of the excavation units and in the profile cut along the margin of the river, and revealed a continuous stratum of ash and architectural debris along the entire area that was exposed. This burn was so intense that it melted the adobe superstructure in some areas, and three thatched roofs, composed of grasses and wooden beams, were incinerated *in situ* and carbonized through the clay floors (Fig. 7). This event marks an important change in site stratigraphy and in Taraco's economic and political status. Post-burn levels contained decreased quanti-

ties of obsidian, a general reduction in the quality of the ceramic assemblage, and increased evidence of agricultural activities. There is also no evidence that the site was ever abandoned during that timespan; tamped surfaces and fieldstone foundations characterize the subsequent Huaña occupation.

ANALYSIS

The excavations of the deep deposits of Area A produced a tremendous volume of materials. Their analysis presented a unique opportunity to observe patterns of economic and political development over the course of the Formative and to examine how and why Taraco emerged as a powerful regional center.

One of the most important trends identified was the intensification of trade activity during the early Pukara period. Even though obsidian must have been imported from a significant distance, the excavations discovered this exotic material in all occupational phases. Geochemical analysis using portable x-ray fluorescence spectrometry indicated that nearly all of it had been imported from the Chivay source in the Arequipa area—a distance of more than two-hundred kilometers; this finding is consistent with previous compositional studies of obsidian found in the Titicaca region (Burger et al. 2000; Craig et al. 2007). These results are indicative of regular trade routes that persisted from very early in the history of the settlement.

The sample of obsidian from the Formative levels at Taraco contrasts significantly from samples recovered from other Formative political centers—both in volume and in character. In fact, the amount of obsidian recovered from one excavation unit during one field season is nearly double the *total* amount of obsidian recovered during *four* field seasons by Christine Hastorf and her team at the south basin center of Chiripa (Bandy 2005; Hastorf 1999). Furthermore, only two artifacts from the Taraco sample could be identified as finished bifaces; all other artifacts were classified as debitage or retouched flakes. In contrast, the Chiripa sample consisted primarily of bifaces and only a very small amount of debitage, a pattern that suggests that those residents acquired their obsidian in the form of finished points (Melson 2010; Perlès et al. 2011). The opposite pattern of the Taraco data indicates that the site was likely a locus of tool manufacture (Blomster and Glascock 2011) and that it was almost



Figure 7. Charred wooden roof beams and posts from the site-wide burn event at Taraco.

certainly a preliminary node in an exchange network that persisted from very early in the occupation of the site. Finished bifaces were redistributed, and the large flakes, still useful for household tasks, remained at the site.

Analysis of the flaked tools indicated marked shifts in raw material preference over time. While obsidian is present in the earliest occupational phases, there was greater use of locally available raw materials. During subsequent phases, obsidian was imported in ever increasing quantities, and by the early Pukara period, there was a clear preference for this expensive material over equally useful, locally available alternatives.

Analysis also indicated that residents of Taraco were actively involved in the production and exchange of finely made, highly decorated ceramics that were used in rituals and other special events. These nondomestic, special-purpose pottery forms include trumpets, *incensarios* (incense burners), and large *tazones*—flat-bottom bowls used in formal serving contexts. Evidence suggests that these objects were traded, but, unlike obsidian, which had to be imported from a distance, these finewares could be produced anywhere with a suitable clay source.

In order to monitor the patterns of the production and exchange of these artifacts, a large sample of these finewares was analyzed using Laser Ablation Inductively Coupled Plasma Mass Spectrometry, which allowed for the chemical characterization of the clay. This analysis indicated the presence of more clay sources in the early Pukara period than in previous phases. A traditional archaeological

interpretation of this pattern is that this increase in source material reflects increased numbers of producers (Costin 1991). As only two clay sources are associated with the Taraco area, the sudden appearance of three additional sources in the early Pukara sample is likely a product of exchange with centers in other areas of the region with geologically distinct clay sources. These results suggest an intensification of trade in prestigious finewares, and presumably other types of items, during this time.

The percentage of “nonlocal” materials identified in the early Pukara sample is consistent with low levels of exchange that would be expected if these objects were not regularly traded, but were instead exchanged as tokens of affiliation during faction building activities—an idea supported by the chemical groups represented among the trumpets and *incensarios*. Nearly all of the ritual paraphernalia sampled from Taraco was locally produced. However, a sample of these objects from contemporaneous sites farther east (Huancané-Putina area) was much more variable. Importantly, nearly half of the trumpets and *incensarios* from sites in the Huancané-Putina survey area were chemically traced to Taraco, a strong indication of trade activity. The fact that not a single specimen from this region was found among the Taraco trumpets and *incensarios* suggests a one-way movement of ritual finewares between these two areas, and reflects Taraco’s dominance of local exchange networks during this time.

Other data speak to the interaction among political centers during the early part of the Upper Formative. Specifically, the analysis of ceramics

from unmixed Phase 3 contexts suggest Qaluyu and Pukara material styles do not represent discrete, sequential phenomena, but rather that they overlapped for a significant period of time. A portion of a Pukara incised polychrome *tazon* decorated with a feline motif was discovered smashed on the surface of a clay floor dating to the first century C.E. (Fig. 8). Interestingly, this is a motif echoed in the lithic art found both at Area A and around the Taraco site area. The matrix of this floor contained Qaluyu wide-line incised and painted ceramics in a frequency inconsistent with curation. Although it is possible that this floor was prepared using soil that contained sherds from earlier periods, apart from these fineware sherds, the soil matrix contained very few other cultural materials. The floor had been carefully prepared, and the inclusion of these diagnostics was likely due to their use by residents, rather than by accident. Although traditional chronology in the northern Lake Titicaca Basin assumes that these two styles represent sequential cultural phenomena, this finding suggests simultaneous use and possibly manufacture by residents of Area A. It is also a possible indication of interaction and exchange with the site of Pukara, which had already begun producing its distinctive polychrome ceramics by this time.

DISCUSSION

By the beginning of the Upper Formative, Taraco was a major ceremonial and economic central place with access to a variety of exotic materials and prestige goods. Excavations yielded evidence of



Figure 8. Polychrome incised *tazon* fragment found on the floor of an early Pukara (Formative Phase 3) period building.

long-distance trade, feasting, supra-household food sharing, and ceremonial activities. Comparison with other similar contexts from around the northern Basin highlights the level of wealth that was concentrated in the Taraco area during the Formative. At the site of Cachichupa, for example, Plourde found that a domestic complex adjacent to a sunken court contained only a very small amount of Qaluyu fineware, even though fragments of pottery in this style were found in other areas of the site (Plourde 2006). In contrast, the contemporaneous domestic architecture of Area A was associated with many more examples of Qaluyu style wide-line incised and red-brown-on-cream pottery (Chávez 2007, 2008). The disparity in the distribution of finewares at these two contemporaneous sites suggests unequal access patterns that may reflect a status differential between the two sites. While this is only one example, it nevertheless highlights the status of Taraco in its regional context.

By intensifying their participation in these long-distance networks, residents were able to accumulate the durable resources required to support local faction-building and political expansion. An increased reliance on imported goods is evident even at the regional level, which suggests the development of protected trade routes during the late Qaluyu and early Pukara periods (Plourde 2006). Ultimately, imported wealth was used to finance a budding political economy, which would have included new forms of public ceremonialism that featured music, the burning of incense, and community-sponsored feasts. During these events, participants would be allowed access to exotic imports, and social bonds were cemented with gifts of high-status crafted goods. Such events provided a context for status competition and alliance negotiation, and likely served as a venue for local trade and other social activities. In other words, this external wealth allowed the early residents of Taraco to first “buy into” and then later create and disseminate regional ideologies, including the Yaya-Mama religious tradition.

This transition in the political economy is clear in the distribution of ceramic finewares across the occupational phases; while elaborate serving vessels are present since the beginning of Phase 1, trumpets and *incensarios* do not appear until the very end of Phase 2. The ceramic data, which show a

clear reduction in bowl size during phases 2 and 3, likewise may suggest a shift from small, household-based gatherings in which food was shared communally to more public events where people were served in individually owned bowls (Levine 2012). By the first century C.E., these strategies successfully attracted populations from around the northern Basin, effectively making Taraco a major hub of the local social, economic, and political life of the region.

It is now possible to say with much certainty that the emergence of Taraco as a regional center is strongly linked to residents' strategic participation in local and long-distance exchange networks. While it is participation in long-distance trade in prestige goods that allows for the accumulation of durable wealth, it is through the participation in the local exchange networks that social capital is accumulated. The ultimate success of a regional center is contingent on the relationships built through local trade—good relationships with neighboring communities are effectively what make a center powerful. However, these centers need durable wealth, procured through long-distance networks, in order to underwrite the types of activities that foster alliance building at the local level.

Taraco's economic and political success was ultimately short-lived, as the site was destroyed in a major conflagration in the first century C.E. The excavations at Area A indicated that this episode was not an isolated incident, but rather part of a site-wide episode of deliberate destruction. Archaeologically, it is clear that this episode is qualitatively different from all previous instances of site burning. Prior burns only targeted the cane mats that would have overlain the prepared clay floors, and after the burn, new floors would be laid down. This particular burn destroyed entire buildings, including their adobe walls, roofs, beams, and posts, across the entire site. This event suggests that while violence may have not initially spurred the emergence of regional centers, it definitely played a major role in the transformation of the political landscape of the Upper Formative and the evolution of chiefly authority in the region.

The radiocarbon record has been instrumental in determining the nature of this highly significant event. The analysis of nine radiocarbon samples indicated a disparity between the ages of the beams and the annual grasses used to thatch the roofs. The dates from the grasses are consistent, even across excavation contexts, and place the fire in the first

century C.E. In contrast, the dates from the beams were much older, in one case by several hundred years (765–540 B.C.E.). These differences in age are almost certainly due to the practice of reusing and recycling large and valuable wooden beams each time a structure was rebuilt. This practice is not surprising, given the rarity of suitable construction materials in the *altiplano* region, an area with little conspicuous flora and high levels of solar radiation. Similar conservative practices have been well documented in other arid and/or sparsely wooded areas around the world (Schiffer 1986; Windes and Ford 1996). Beams that are centuries old are still used in houses today in the Titicaca region.

Given this long tradition of preservation, it is highly unlikely that residents would suddenly destroy their own valuable beams and posts, even if they were abandoning the site. Furthermore, the uninterrupted stratigraphy does not support a model of site abandonment. This event is further distinguished from earlier ones because nothing was rebuilt after the complex was burned. In light of these lines of evidence, it is unlikely that this blaze was accidental or part of ritual activity. Rather, this episode presents key evidence for raiding and is the earliest example of organized violence in the Titicaca region.

This burn also marks an important change in the nature of the occupation of Taraco. For years, Taraco elites employed a variety of strategies to elicit the cooperation of neighboring communities and to attract large coalitions of supporters. Such strategies enabled the site to become one of the region's largest central places. Following this burning episode, Area A was leveled with nearly a meter of fill. Although people still lived at the site, residents no longer built with fine stone or engaged in long-distance trade. Data from post-burn levels suggest an occupation of a more humble character. These residents were agriculturalists, and they did not manufacture or use fancy pottery. The destruction of the Phase 3 settlement effectively marks Taraco's end as a regional center.

It is no coincidence that the timing of this event corresponds with the flourishing of Pukara in the northwestern Basin. By the early part of the Upper Formative, Taraco was no longer the only center in the north Basin, and Pukara was its most formidable competitor for regional dominance. The documented exchange of high-status goods between

the two centers represents a form of cooperation that may have been complementary with their competition. After all, in order to compete effectively, “aggrandizers require the cooperation and support of indebted clients, probably including many kin, and other patrons or trade partners” (Clark and Blake 1994: 19).

Competition between Taraco and Pukara ultimately led to violence on a scale never before seen in the Titicaca region. Based on regional data, it is likely that Pukara was responsible for the raid that destroyed Taraco. These two centers had coexisted for centuries, with neither able to emerge as a single dominant center. Over time, competition for resources and supporters would have become increasingly difficult, as avenues for expansion became exhausted. A change in leadership strategies, which also included the use of violence, finally allowed Pukara to gain the upper hand over its rival. The use of coercion as a political strategy would have been no easy feat—large scale, organized violence would have been expensive, requiring a large investment, as well as risky, because there were no previous examples by which to measure potential success. However, the payoff was extraordinarily great: following this spectacular show of force, regional power was reoriented towards Pukara, such that it was able to become the largest and most complex political entity to arise in the north Basin.

Following the decline of Taraco, coercion would continue to figure prominently in Pukara’s leadership strategies. This is reflected in a significant iconographic shift that accompanied the transition from the Middle to Upper Formative. The Upper Formative iconographic repertoire, which includes images of trophy heads, “devourers,” decapitators, and snarling and kneeling felines, alludes to a new ethos of violence and unequal power never before seen in the Titicaca region (Hastorf 2005: 68). Of particular interest are the trophy heads, which were absent from the Yaya-Mama tradition. By the Upper Formative, this motif appears “in stone, ceramic, and textile arts, and its symbolic power in the region cannot be overstated” (Stanish 2003: 161). These types of images likely reflect actual conflict among elites in the region during this time. Such images would have been instantly recognizable symbols of authority that would have served as warnings to would-be competitors.

CONCLUSIONS

By synthesizing the multiple lines of evidence from the Taraco excavations, and examining them in their regional context, it becomes clear that the development of regional centers during the Formative can be linked to a combination of cooperative and competitive behavioral strategies. Multi-community polities emerged from a dynamic context that involved competition over productive lands, ritual, long-distance trade networks, community-sponsored feasts, and conflict. The successful manipulation of these factors by a few sites during the Middle Formative contributed to their relatively rapid growth, such that they became larger and more complex than any of their neighbors. In the northern Titicaca Basin, Taraco, along with Pukara, was one of the sites that experienced the most dramatic of what others have referred to as “growth spirals,” allowing it to become a major hub of political, economic, and ritual activities. *

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The Curse of Courtesy

HANS BARNARD¹

In this essay I reflect on my interpretation of a recent incident that affected me personally. In places details have been omitted to protect the privacy of those involved without altering the gist of the story. Being active in archaeological organic residue analysis, I am regularly approached by colleagues with the request to examine their finds. In the spring of 2011, through a mutual friend, I was contacted by a professor who was not an archaeologist, but rather an accomplished scholar in an unrelated field. He informed us that he had collected a number of ceramic vessels during fieldwork many years ago. He would now be interested to learn more about these pots and was hoping I could establish their former contents. Perhaps rather naïvely I convinced myself that one can very well pick up a few potsherds while moving across the landscape, so I agreed to discuss matters over lunch. During this meeting the above information was confirmed. In response to my questions about how the sherds could have been legally obtained, exported, and remained in his possession, the professor answered that he had stopped collecting in the 1980s when the export and import of antiquities became more closely regulated. After lunch we visited his office to view the selection of pots on display there. These appeared to be nicely decorated, whole vessels which were not found during fieldwork, but rather obtained from local traders after they had been looted from their archaeological context. We also leafed through a catalogue of an exhibition where many of the vessels were shown, without reference to their ancient or modern provenance.

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All of this did nothing to sooth the nagging feeling that something was amiss. A brief conversation with a colleague, an archaeologist working in the region, and a search on the internet revealed some disturbing additional details. Only weeks before our lunch a hundred vessels from the collection of the professor had been returned by the U.S. Immigration and Customs Enforcement to their country of origin. In 2005, he had surrendered these, valued around \$100,000, as part of a plea agreement. Because these facts were hardly irrelevant or of such distant memory, I could not help but feel misinformed. I was especially disappointed to be misled in such a fashion by an esteemed colleague who evidently thought me incapable of discovering the missing pieces of the story. I expressed these feelings in an email message in which I also explained that I could not be associated with material that was tainted like this. The response to my message was remarkable. Rather than apologetic, the tone was explanatory and defensive. What especially surprised me was the suggestion to reconsider my decision because the material was now out of context anyway and could yield important information that would otherwise be difficult to obtain. Several archaeologists were mentioned by name who had invited the professor to visit their excavation, encouraged him to pursue additional research, or who worked on material with a dubious provenance themselves.

Following this suggestion, however, would lead to a project ethically akin to the Tuskegee Syphilis Experiment, the medical study conducted in Tuskegee, Alabama, between 1932 and 1972 by the U.S. Public Health Service and the Tuskegee Institute. This project followed the health status of six hundred poor African-American sharecroppers, 399 of whom had contracted syphilis before the beginning of the research. The study later became highly controversial, primarily because the researchers

decided not to treat the patients—even after penicillin had become available around 1945. At present such a study would by law require informed consent, communication of diagnosis, and reporting of the test results. Ideally archaeological research should similarly require informed consent by all stakeholders, ranging from local farmers and archaeologists to international tourist organizations and research institutions, as well as the intent of the researchers to report and publish their results. Both the Tuskegee Syphilis Experiment and the analysis of pottery with a dubious provenance may generate useful data, but ethical considerations take precedence. Another example of the conflict between profit and principle is so-called insider trading, which can result in fantastic returns, but is illegal in most countries. Avoiding a loss of around \$45,000 by selling her share in ImClone Systems after privately learning about a Food and Drug Administration ruling which would lower the value of the stock of that company did cost Martha Stewart six months in prison between October 2004 and March 2005. This demonstrates that also in the financial world ethical considerations take priority over potential gains. These or similar cases must have been known to the professor when he approached me and responded to my unenthusiastic reply. He must also have understood that illegal excavation and trading of antiquities result in the loss of archaeological context and harm the national heritage and pride of the country involved.

How could an intelligent and educated man—a successful and prosperous scholar—been so blinded by “collector’s fever”? Many answers crossed my mind, all of which may have had elements of truth in them. The interest shown by others may have been perceived as a justification for less than ethical behavior, especially when this is not unambiguously labeled as such. There may also have been unjustified feelings of superiority and entitlement: laws, and especially foreign laws, may be deemed irrelevant and objects may be perceived as better off in the hands of private collectors. There might also have been a more Machiavellian justification that more knowledge and publications about the vessels would make them more valuable—which might have been the reason behind entering them into a museum exhibition and full-color catalogue.

Another, more reflective insight came to me during a presentation by one of the researchers of

the Nebra Sky Disk. About a foot in diameter with applied gold symbols, this bronze disk was found together with other bronze objects in 1999 near Nebra, in eastern Germany, by two treasure hunters with a metal detector. They sold the hoard to an antiquities dealer for 31,000 DM (about \$15,000). The disk changed hands several times after that, each time increasing in price. In 2002 archaeologists acquired the disk after a police sting operation. The looters later showed them the discovery site as part of their plea bargain; they ultimately received prison sentences of twelve and six months. The disk has since been attributed to the Únetice Culture, around 1600 B.C.E., and is now kept in the Saxony-Anhalt State Museum for Prehistory in Halle, Germany. The lecture that I attended concentrated on the origin of the raw materials out of which the disk was made—copper from Austria and gold from Cornwall. The modern history of the object made me contemplate the role of archaeologists in promoting the ethics of excavating and trading antiquities.

At the beginning of the twenty-first century archaeology is no longer about finding things, but rather about finding things out. The story of the Nebra Sky Disk can be interpreted as treasure hunters, antiquities dealers, and collectors competing with archaeologists, the police, and governments over the ownership of a desirable object. In my opinion this sends the wrong signal that the physical object is the center of attention of everybody, including archaeologists. This makes it more difficult for them to ascend to higher moral ground in order to convince the public that they are more interested in data than in objects that contain them. It is lamentable that the state of Saxony-Anhalt has registered the Nebra Sky Disk as a trademark, which has resulted in lawsuits over depicting the disk on souvenirs and book covers. Apart from the question of whether a work of art can be registered as a trademark after more than 3600 years, this again places all the attention on the object.

It may be difficult for archaeologists to disregard completely the attraction and value of objects such as the Nebra Sun Disk, and fortunately this is not often necessary. Sometimes, however, there will be a need to approach the authorities and individuals with more determination and less courtesy than one would probably prefer. Only by refusing to cooperate in a police sting operation, by denying a visitor a

tour of the site, by declining to view a private collection, and by strickly concentrating on archaeological data rather than objects can the archaeological community begin to hammer home its message against collector's fever. This is more pleasingly expressed in the campfire song by British archaeologist James L. Starkey (1895–1938):

*Not for the greed of gold
Not for the hope of fame
Nor for a lasting heritage
Not for a far-flung name
Rather for making history
And for some lore of old
This is our aim and object
Not for the greed of gold.*

Being less courteous may be easier if we remember that most antiquities traffickers are not poor farmers who need extra income to feed their starving children, but well-organized criminals using the same networks as dealers in illegal drugs and arms. I personally know two colleagues who had team members killed by such networks in Cambodia and Peru and two more who were shot at in Egypt and the American Southwest. The fuel for this violence and destruction is provided by collectors willing and able to pay \$1000 for an ancient vessel. I may well have been the first to tell the professor that his collection of vessels was fundamentally unethical. That so many did not do so before allowed him to deceive himself into thinking that his behavior was not so bad. Such is the curse of courtesy. *

Navigating the Academic Job Market in Archaeology

JOHN M. MARSTON¹

I received my Ph.D. from the UCLA Interdepartmental Archaeology Graduate Program in June 2010, spent two years at Brown University as a postdoctoral fellow, and was hired as an assistant professor in the Department of Archaeology at Boston University in 2012. This sounds like an optimal job trajectory, moving from one well-known school to another, and ultimately landing in a tenure-track position in relatively short order. The reality, however, was much messier: sixty-one rejections, countless hours spent preparing application materials, a cross-country move, a semester of adjunct teaching with no benefits, and an intellectual and emotional roller-coaster ride that lasted three years.

I am writing this column as advice for current Ph.D. students in archaeology, in order to share my

experience on the academic job market: the annual cycle of applications for teaching and research positions at colleges and universities. Why should my unique experience be a useful example for others? I am no expert on the subject, but my job search can be generalized in three ways: 1) recently (2009–2012) I applied for jobs in anthropology, classics, environmental studies, and interdisciplinary programs, so my experience speaks to a large slice of the job market today; 2) I had both success (job offers) and failures (near unemployment) along the way; and 3) I made major adjustments to my job-search strategy based on peer feedback and advice that brought me success. My ultimate success was not due to some innate genius or other unique quality, but rather to perseverance, honest self-reflection, and the help of others. I hope that makes this advice of use to you, current students, in your job hunt as well.

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MY THREE YEARS ON THE MARKET

I began my search for jobs in earnest during the summer of 2009, the year before I finished my doctorate. I took part in a series of professional-development workshops offered by the UCLA Graduate Writing Center during August of that summer, where I drafted initial versions of a cover letter and research and teaching statements and began to study online job postings, looking for tenure-track and postdoc positions.

Year 1—Initial Success

During the 2009–2010 year I applied for three tenure-track jobs, all at major research universities advertising positions that seemed a close fit for my interests and experience, and, additionally, for five postdoctoral positions. I received no interviews but one offer: a one-year postdoctoral position at Brown University, teaching one class each semester. I accepted it gladly.

Year 2—Failure

During the fall semester of 2010 I began applying for additional tenure-track jobs. I was one of five postdocs in my department at Brown, all of us on one-year contracts, and we met regularly and peer-reviewed each other's application materials. My applications got better, as did my traction in the job market. I applied for five postdoctoral and ten tenure-track positions that fall, again sticking with job descriptions that matched my expertise rather closely. January brought an invitation to interview (by phone) at a teaching-intensive state university on the West Coast; later in the spring I was offered opportunities to interview on campus at a western U. S. liberal arts college and at a research university in England.

These were my first job interviews of any sort in my entire life. I tried to prepare as best I could: I asked both junior and senior colleagues for advice, I read relevant articles online that might provide guidance, and I practiced my job talk repeatedly for diverse audiences. I then proceeded to bomb the interviews. The phone interview was perhaps the worst: it began with the simple question—"Why did you become an anthropologist?"—flummoxing me entirely. I did better, perhaps, on the later research

My ultimate success was not due to some innate genius or other unique quality, but rather to perseverance, honest self-reflection, and the help of others.

and teaching questions, but I never caught up. I was not invited to interview on campus.

The on-campus interviews were challenges as well. The liberal arts college was my dream job in many ways, but the undergraduate students seemed bored during my combination job talk/teaching presentation, and the position was offered to someone else. England was worse: my talk (limited to twenty minutes!) went smoothly and several faculty members commended me on the presentation over lunch. However, part two of the interview was a panel interrogation by two members of the department and two senior deans—the actual hiring committee. My knowledge of the British educational system was limited, and their expectations for junior faculty were clearly different from mine. I left expecting the rejection that was delivered by email the following day.

By now it was late May and I had no job for the following year—and no remaining applications outstanding. I began emailing chairs in every department of anthropology, classics, and environmental studies in the greater Providence area, including Boston, asking for adjunct teaching positions. Fortunately, I had made some contacts in environmental studies at Brown, and they, together with my home department, pulled together funding for a six-month

extension of my postdoctoral position through the end of 2011. A university in Boston then offered me two anthropology courses as an adjunct instructor for the spring term; these were later supplemented by a third course in anthropology at Brown.

That summer was one of intense focus. I was demoralized by my failure to land a position for the following year, but nevertheless resolved to move forward with new energy. I needed to build my CV, which had already gotten me in the door at some wonderful universities. The real problem was my interviewing style. I went through a professional-development boot camp, an idea pressed on me by my partner, who assigned me “summer reading” and gave me mock interviews based on her success hiring and being hired in the nonprofessorial world. I also moved ahead with publications, designing new course syllabi, and preparing grant proposals.

Year 3—Success

My approach to the job market during the fall of 2011 was different. I enrolled in a fantastic yearlong professional-development workshop series at Brown and again revised my application materials. This third time on the market I did not apply selectively to jobs that I thought were “looking for me.” I applied to *everything* that even came close to what I do. Teach introduction to four-field anthropology? I can do that. University in northern Canada? I’m there. My only restriction: no more jobs outside North America. The cultural fit wasn’t right.

I applied to thirty-five tenure-track positions, five visiting faculty positions, and four postdocs, from the Mexican border to Oregon, Georgia, and Boston. My letters were customized for each job, the CVs were rearranged for each school, and my letter writers were kind enough to send individualized letters to each institution. Applying was nearly a full-time job—on top of teaching.

This time, success. I received three telephone interview requests, which led to two campus visits, and four other institutions invited me to campus directly. I was offered a two-year postdoctoral position in environmental studies at an elite liberal arts college before January was over. I would have leapt at the offer the year before, but with four inter-

views for tenure-track positions coming up over the next month, I took the risky step of declining the offer. That decision paid off when my four campus interviews turned into two offers, one at a major public research university and the other at Boston University. These were my top two choices among the schools I had visited, and although the decision was difficult, BU offered readier collaborations with faculty in my department, and the city of Boston offered more employment options for my spouse.

ADVICE FOR THE MARKET

My three years on the market alternated between success and failure in finding continuing employment, but ultimately produced the outcome I’d imagined. Although I made some missteps along the way, I sought feedback continually and readjusted my strategy successfully.

Now let me turn to specific advice for current students, based on five factors that I believe contributed to my ultimate success on the academic job market. Much of this advice applies generally to the academic job market, but some is especially critical for archaeology.

Completion and Publication

No factor is more important than having a completed dissertation. I was interviewed for zero tenure-track jobs to which I applied before I received my Ph.D.; subsequently, I was offered interviews for nearly one in five. Indeed, the one postdoc I was offered during the year I graduated had an April application deadline; my dissertation was complete before I applied. One hears apocryphal stories of search committees simply tossing aside any applications from students who have not finished: from my experience I suspect that happens frequently.

Similarly, having at least one peer-reviewed journal article published (or at least accepted) is critical; preferably this article should be in a disciplinary archaeology journal (e.g., *Journal of Archaeological Science*), rather than a regional journal (e.g., *Southeastern Archaeology*). Search committees need to see that your work has already been vetted by the broader scholarly community, not just your own doctoral institution. This gives you a writing sample, should this be required for an application, and demonstrates the value of your dissertation work. Other applicants

will have publications on their CVs; you should, too—if you want to remain competitive. Note: if you want your article in print by the time you apply for jobs, it should be submitted about one year earlier (i.e., during the fall term two years before you plan to finish; this article could stem from your master’s project or an early chapter of the dissertation).

Next Project

It’s great to have a brilliant dissertation and multiple avenues for publication of that dissertation. Still, you do not get tenure based on a dissertation, but instead on the work you do subsequently. Similarly, many postdoctoral programs require you to propose a new project beyond the dissertation. Develop a second project, whether field-, lab-, or theory-based, before you begin to apply. This project should be tied to a theme related to your dissertation work but involve an expansion of it in a way that you can explain clearly in your cover letter and during interviews. Best to begin laying the groundwork for this no later than the summer before you finish. In archaeology, field projects are important because they provide field opportunities for students: make sure you have access to at least one active field project where you could take students, whether you direct this project or not.

Advice and Peer Review

You are not the first person who has gone on the job market. Your dissertation advisor did this at least once, as did other faculty in your department. Junior faculty members even did so recently. Talk to them and get as much advice as you can, then filter out what is useful to you (not all of it will be!) and adopt that advice. Seek out workshops on campus offering job-market advice, where you will get general advice to complement field-specific advice from faculty in your department. There are also fabulous articles and books that offer advice on the job market: the *Chronicle of Higher Education* is the best online resource, with articles in its Advice/Manage Your Career section and its “On Hiring” blogs; and Julia Miller Vick and Jennifer S. Furlong’s *The Academic Job Search Handbook* is the most useful book I’ve found.

As an archaeologist, you are more than someone who digs square holes. You deal with issues that speak to multiple contemporary audiences, and you need to be able to articulate those issues and connections.

You also have friends and colleagues—in your department, in other departments, and at other universities—who are now doing just the same thing as you. Talk to them. Work together to make your application materials as effective as possible. I owe a great deal to my co-postdocs at Brown who read so many of my cover letters, who let me use their well-organized CVs as templates for my own, and who honestly critiqued my practice job talks. I hope working with me benefited them as well. It’s also great to get feedback from those outside of your area of study, in other departments or outside academia entirely. If they can’t understand the importance of your work from your letter, interdisciplinary hiring committees won’t be able to either.

Marketing Your Breadth

In writing a dissertation, you learned how to design a research project, execute it, and draw conclusions from the data. What you need now is the ability to market that research, to sell others on the importance and relevance of your findings. The commonly mentioned “elevator talk,” a one-to-two-minute

summary of your research that could be described during an elevator ride at a conference, is important, but equally important is being able to explain *why* it is interesting and relevant to someone *outside* your field. As an archaeologist, you are more than someone who digs square holes. You deal with issues that speak to multiple contemporary audiences, and you need to be able to articulate those issues and connections. More jobs (especially postdocs) are interdisciplinary in nature and demand scholars who can speak effectively to diverse audiences.

How do you learn those skills? Through practice. The job talk is likely the most important component of your campus visit, and a well-prepared job talk might give you talking points for upcoming telephone interviews and even cover letters. Begin to build the talk by presenting parts of it at conferences to different audiences. Then privately present the talk in full to your peers and ask them to critique it. Use your professional network to garner invitations to present in the weekly seminar series of other departments and universities in front of new, friendly audiences; the responses you receive will help you revise and improve your presentation. I built my job talk from presentations at three meetings during the spring I graduated (AIA, SAA, and Society of Ethnobiology), each with a different audience, and over the following year I presented the job talk five times at area universities before ever using it for an interview. The talk got a lot better, and I became very comfortable giving it, which was invaluable during a campus visit when I had to deliver it fresh off a plane, directly following back-to-back interviews.

Balance, Organization, and Constancy

As you prepare for the job market, remember that there are other demands on your time. At this point, completing the dissertation should be your priority, but you may also be teaching and working on an article or conference presentation. Add family priorities, sleep, and exercise (none of which should be neglected!), and finding the time for job applications becomes a challenge. The key here is balance and scheduling. Do not let important deadlines pass by because you were busy on other tasks. Determine a schedule that allows you to complete materials well before deadlines and gives you time for peer review,

revision, and communication with recommenders when letters are needed.

Practice *constancy* in your work, by limiting each task to the time it needs and working regularly and continuously toward your multiple goals and deadlines, and in your emotions. This process is stressful: waiting inspires emotions from impatience to panic, and rejections hurt, especially when the dream job slips through your fingers, as it most often does. Be as emotionally stable as possible and know that only dedication and commitment will lead to success—but that they *will*, eventually, lead you there.

LESSONS LEARNED

My three years of job hunting were busy, stressful, overwhelming, depressing, exhilarating, and ultimately fulfilling. Your search will be, too, and although I wish you success with your first application, the reality is that you will likely have to apply for many, many jobs. Maintain balance in your life as you go through this difficult time: balance the emotional highs and lows, your research and teaching, fieldwork and publication, and work and play. Be dedicated in your hunt, knowing you will suffer the sting of rejection and maybe the harsh reality of unemployment or underemployment. Rely on your colleagues for advice and peer review of your materials and presentations; rely on your family and friends for support and emotional stability. Be reflective about what you ultimately want in life and what you can do now to achieve those future goals. You will achieve those goals; it's only a matter of time. ✨

Little Lake Rock Art

JO ANNE VAN TILBURG¹

The study of the rock art at Little Lake, California, spans over ten years of seasonal, weekend-long field forays by our interdisciplinary research team—about one month total per year in the field. During that period we documented and analyzed 4,239 rock art elements within a study area containing three archaeological sites that form a complex of great significance to the region as a whole. They are the Stahl Site (CA-INY-182), Stahl Site Cave (CA-INY-205), and Pagunda (CA-INY-3826).

We amplified our study with analyses of selected objects held by major public institutions and unpublished or private archaeological collections. Our research paradigm is predicated upon our ability to tease out of the cumulative data a connective web of associations, and a major objective is to transcend traditional barriers between rock art and archaeology. We contend that the best way to understand rock art at Little Lake Ranch—or, for that matter, anywhere—is to build a data matrix that incorporates as much of the symbolic and visual intricacies of regional cultural and material context as possible.

We regard rock art symbols as authentic artifacts of human behavior and consider rock art production a significant activity that produces cultural resources of social value. We began, therefore, with two basic research questions: What motivated such behavior? What was the purpose and time frame of the activity?

RESEARCH APPROACH

Little Lake is located in the Rose Valley, Inyo County, California and literally on the cusp of the Mojave

Desert and the western Great Basin (Figs. 1, 2). The rich and vibrant archaeological literature for the region has been invaluable to our study. The Desert Archaic model originated by Jennings (1986) and the settlement pattern studies and chronological clarifications contributed by Thomas (1983) are seminal works. Recent evidence confirms a pre-Clovis human presence in North America at least 15,500 years ago (Waters et al. 2011). Research in the Coso region provides a contested local rock art chronology (Gilreath and Hildebrandt 2008: 7–9).

Rock art production at Little Lake Ranch is bracketed within a time frame possibly from 11,000 years and at least 6,000 years before the present and reaching to 1872. This vast Prenumic to Numic culture spectrum contains an impressive complexity of regional technological, economic, social, political, and religious practices. We synthesize our evidence using the “triangulation method.” It is based upon a classic metaphor in which diachronic and synchronic evidence drawn from multiple fields is brought together to create mutually reinforcing and mutually constraining constituent arguments. If these diverse evidential strands all converge, they support a given hypothesis because it is implausible that *all* of the various converging *independent* strands of evidence are in error.

Our research strategy is broadly referred to as “holistic” or “contextual archaeology.” It was established decades ago as an outgrowth of anthropology and has informed some recent rock art research (Chippendale and Nash 2004; Quinlan 2007). Our research questions include the following: Can those rock art motifs that have ceremonial value be isolated from those that do not? In other words, can the collective self be isolated from the individual self

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Figure 1. Overview of Little Lake Ranch. Photo: Doug Brotherton. Courtesy UCLA Rock Art Archive.

in rock art? Can gender, age, or ethnic identity be inferred by analyzing selected motifs in other crafts or media that are comparable to rock art elements? Our responses to those questions are informed but preliminary and open to discussion.

Schaafsma (1986: 217) notes that style in rock art is based upon motif analyses and may be defined as “a related visual complex with specific formal attributes and with given cultural, spatial and temporal dimensions.” Our motif analyses describe Little Lake Ranch rock art as a style area embedded in or related to western Great Basin rock art, yet demonstrably discrete from the nearby but much larger Coso Rock Art Landmark (Fig. 3). Ethnographically documented cultural groups sharing a common resource territory, subsistence system, and ideology “have preferential ways of arranging design elements” repeatedly on a wide variety of crafts (Washburn and Crowe 1988: 24). We define the Little Lake Ranch rock art aesthetic through our exploration of such “preferential ways” in multiple media.

ETHNOGRAPHIC SOURCES

The Rose Valley is the gateway to California’s storied Owens Valley, where the best-known early written descriptions of Numic peoples were made by Captain J. W. Davidson and date to 1859. A basic text for the Owens Valley was written by a pioneer journalist and historian known as W. A. “Bill” Chalfant (1868–1943). The individuals with whom Chalfant had contact were among the resettled Owens Valley Native groups of Bishop and Lone Pine.

Alfred L. Kroeber (1876–1960) spearheaded a statewide salvage ethnography effort from his post at the University of California, Berkeley (1901–1946), and in the 1920s anthropology students and professionals were dispatched to the Owens Valley. By that time, “the pathetic battles had all been fought, the diseases had run their course, the major villages had been abandoned, and native lifeways existed only in the memories of the few aged individuals born long before the first white settlement was built in Owens Valley” (Bettinger 1991: 463).

During two six-week visits to the Owens Valley and Mono Lake area in 1927 and 1928, Julian H. Steward (1902–1972) salvaged a wealth of Owens

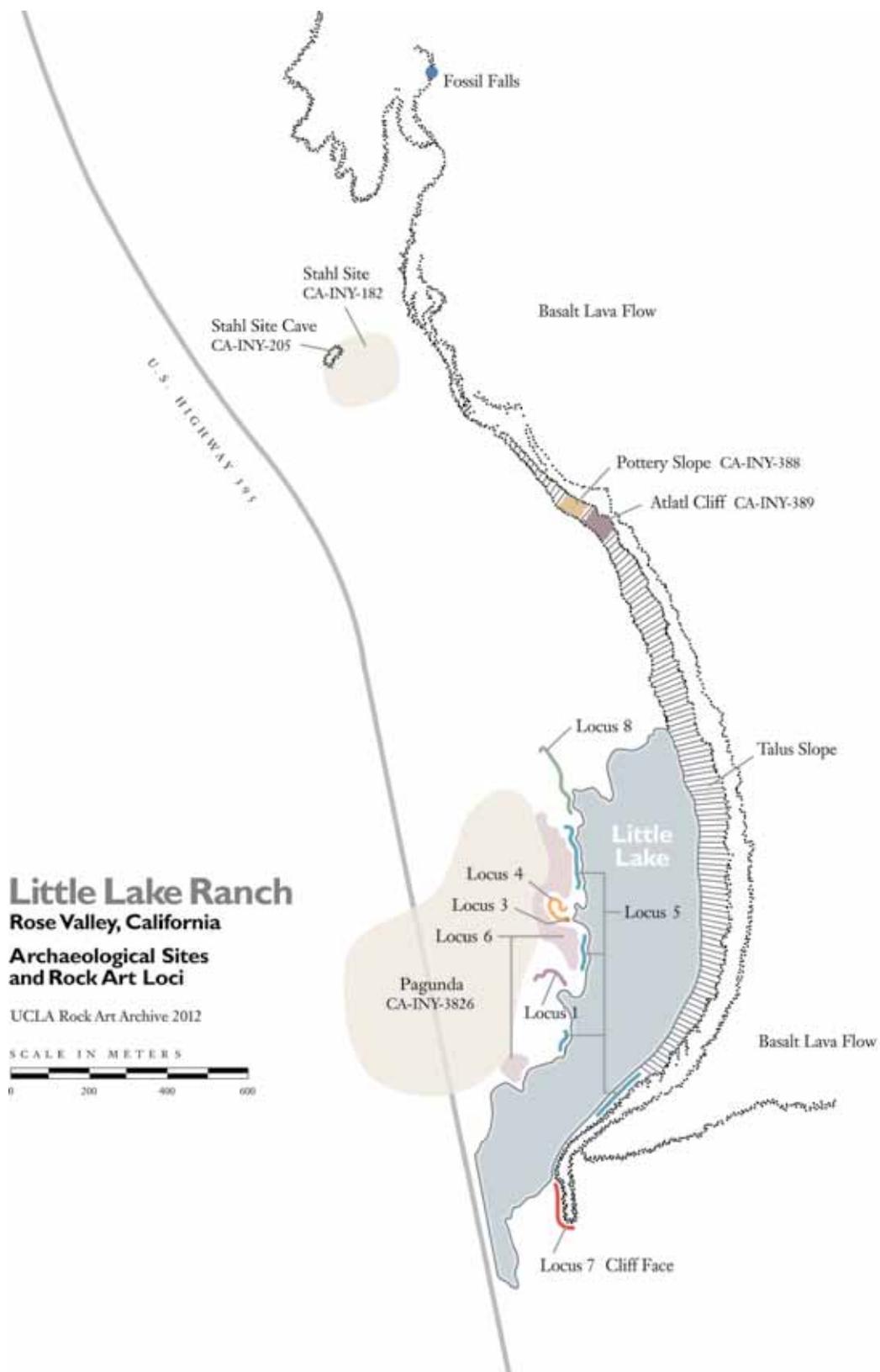


Figure 2. Little Lake Ranch site map. Drawing: Wendy All. Courtesy UCLA Rock Art Archive.

MOTIF PERCENTAGES AND TOTALS - ALL LOCI

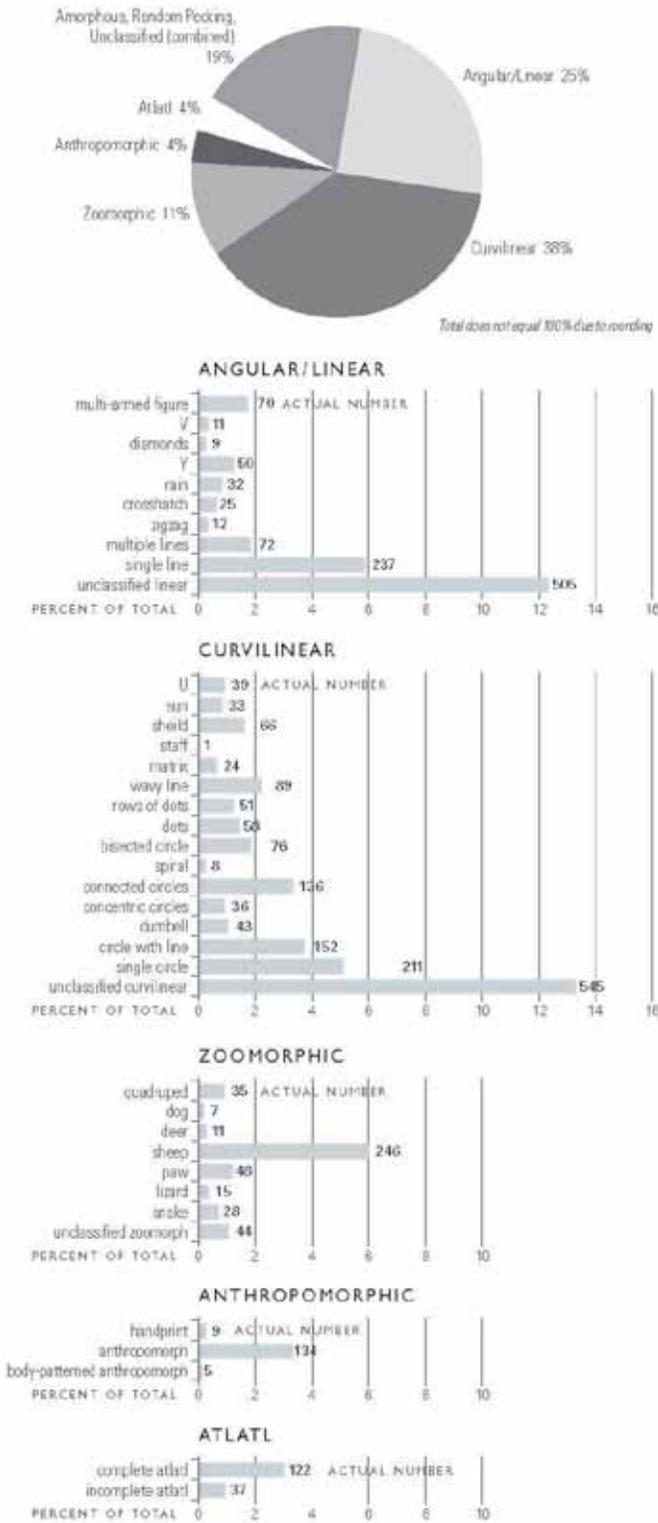


Figure 3. Count of motifs at all loci, Little Lake Ranch. Data display design: Doug Brotherton. Courtesy UCLA Rock Art Archive.

Valley Paiute data basic to all subsequent studies (Steward 1938). In 1938 he continued his work among the Western Shoshone. Recent scholarship suggests that professional bias may have shaped some of Steward's data. For example, he came to believe that native hunter-gatherers were largely reactive in the natural environment. Omer C. Stewart (1908–1991), in contrast, showed that they had a direct influence on nature through deliberate alteration and management of the environment, especially by the use of fire but also by pruning and seeding plants (Stewart 2009).

In the 1950s Julian Steward served as a witness for the U. S. Department of Justice against the Northern Paiute claim of traditional ownership of the Owens Valley. O. C. Stewart, A. L. Kroeber, and R. F. Heizer—whose rock art records are the seminal backbone of the Rock Art Archive's special collections—supported the claim. When confronted with his own map showing the boundary between the two groups, Julian Steward's "response was that he had changed his mind" (Lewis 2009: 19–20).

Julian Steward worked with eleven Owens Valley Paiute men and two women, as well as two Shoshone men and one woman. The average age of the Paiute male consultants was fifty-six, although this number is skewed somewhat by the presence of one man (Jack Stewart) whose age is given as one hundred. Some information came to Steward second- or even third-hand. Tom Stone, for example, was the source of information about girls' puberty ceremonies, which presumably came from his wife Lena. Ed Lewis provided a brief statement about Paiute rock art at Fish Springs.

It is a truism in every part of the world that nearly all early ethnographic consultants were male. This is a type of bias reflective of the mores of the time in which most ethnographic data were collected. It is also due to the reticence of the native women themselves, many of whom were sensitive to the social emphasis given to male activities. Two important native consultants for Julian H. Steward were George Hanson and George Gregory.

A very interesting "polygon" of ethnographic contact spans three generations and entwines these men with anthropologist Julian Steward and an ethnographer named Mark Kerr. It begins with George

Hanson, also known as Panamint George or Indian George, a venerable elder who famously witnessed the arrival of some of the forty-niners and was a Panamint Shoshone headman. The next link in the chain is George Gregory, who was from Indian Gardens, south of Darwin. George and his family were raised as Shoshone, although they were in close contact with Paiute people, customs, and mythology all of their lives.

George Hanson's son married George Gregory's daughter, and in addition to being consultants to Julian Steward, both knew Owens Valley resident historian Mark Kerr (1883–1950), who collaborated on a valuable ethnography with a Shoshone woman named Esther Checo. The interactions between and among all of these individuals within such a small community over many years created an intricate, overlapping exchange and interchange of information. Oral histories ebbed and flowed, and information was naturally shared, repeated, enriched, and influenced in ways that are not, to date, fully understood.

Archaeologist Mark Harrington (1957) excavated at the Stahl Site and was visited by Buster Hanson, one of George Hanson's adult descendants. An "old man" who "claimed to be more than eighty years old" was with them. He had been born near Little Lake and lived there until he was about fifteen years old and then moved to Darwin. It is probable that Harrington is describing George Gregory. While insights into rock art production in our area are few and far between in all of the available sources, the ethnographic reach of Panamint George Hanson and George Gregory through Buster Hanson extends to Mark Harrington and Little Lake Ranch rock art.

LEVELS OF ROCK ART MEANING

Art in all cultures relies upon metaphor and attaches it to objects, costumes, or symbols. Metaphorical and symbolic uses of objects are, in fact, the *essence of ritual*. Discerning the *presence* of metaphor within a motif or series of motifs can be framed as an objective research task. Inferring the *content* of metaphor, on the other hand, is almost always subjective and nearly impossible to verify. Rock art motifs are meaningful "only through their associations, which they acquire through being associated with or opposed to one another in all sorts of *contexts*" (Wagner 1981: 37). A context, in turn, is a conventional or

interrelated part of an unlimited larger environment, situation, or experience. Any motif is capable of being involved in many cultural contexts.

We regard the maker of rock art through the same lens as we do the traditional teller of tales, the weaver of intricate basketry, or the singer of songs. As bearers, keepers, and manipulators of concise but nonetheless complex and evolving histories—including aesthetic vocabularies of shape, form, color, texture, sound, and light—the makers of rock art express, transmit, amplify, and preserve adaptive and vibrant native culture over time. We have found it useful to follow the three-tiered model of meaning developed by Rappaport (1979, 1999: 70–74, 392–95). In his scheme, lower-order (Level 1) meaning is grounded in objective, even semantic, distinctions. It is accessible and most often attained in taxonomies. Rock art motif analysis is the tool we used to discover lower-order meaning in Little Lake Ranch rock art.

Middle-order (Level 2) meaning is discoverable when analysis uncovers more subjective but nonetheless formal "similarities hidden beneath the surfaces of apparently distinctive phenomena," and when those similarities can somehow be measured or otherwise shown to be significant (Rappaport 1999: 71). A good example of middle-order meaning is pattern recognition in rock art made by scratching. Another is the quantification and explanation of the formal differences in conventionalized representations for such wide-spread motifs as the bighorn sheep and the atlatl (spear-thrower). In contrast to taxonomy in lower-order meaning, pattern recognition in middle-order meaning can be coupled with good ethnographic sources such as those given above in order to arrive at an analysis that may suggest metaphor.

Higher-order (Level 3) meaning is the holy grail of interpretive analysis. It is grounded in identity or unity with something or someone beyond the self, and is experiential. It is encountered in ritual, expressed as art, and almost universally described as "mystical" or "spiritual." Higher-order meaning *can be discovered only through direct participation yielding a solid grasp of the culture's internal relational framework*. Therefore, nearly all higher-order meanings we (and others) attach to rock art motifs in our area today are conjectural.

SUMMARY OF OUR FINDINGS

Terrain

A significant amount of rock art research for our area is conducted in isolation from geography and archaeology, although that trend is changing. Single-site analyses such as ours are usually not cross-referenced to other rock art sites and hardly ever to non-rock art archaeological sites, making controlled comparisons difficult. In contrast, we use the concept of terrain—as distinct from landscape—to focus our attention on rock art distribution patterns. We show nine discrete clusters of rock art and discuss them as they relate to the three sites given above and, as well, to geology, habitat zones, and available resources. We explore rock art within the context of Mojave Desert and western Great Basin ecology.

Landscape

We accept the hypothesized values embedded in the concept of “operational” and “cognized” environment articulated by Rappaport (1979), and apply these terms to explore the social realization of the Little Lake landscape as a meaningful place. We tried to tease out of the available data some insight into the attitudes, ideas, and ideals held by the native peoples who not only foraged and lived along the lakeshore but, over centuries, nearly encircled the lake in rock art. For Numic peoples, Little Lake itself was—and perhaps still is—a place of strong metaphysical associations, and we suggest that at least some of the rock art nearest the lake was inspired by such associations. In turn, the resultant concentration of rock art enhanced the lake’s inherent cultural qualities or value.

Chronology

Prenumic Stahl Site use reaches back to the Lake Mojave period (11,000–ca. 6,000 B.P.) and is a benchmark of the Little Lake period (6000–3150 B.P.). We assume that some rock art production co-occurred with this initial Prenumic presence; this is indicated by at least one time-marker motif: the atlatl. The occupation of Pagunda is dated to the late Newberry (3100–1350 B.P.) and Haiwee (1350–650 B.P.) periods. Therefore, we assume Numic rock art production at Little Lake Ranch from circa 1000 B.P. A few Prenumic and Numic objects in museum

and archaeological collections have stylistic resemblances to some rock art motifs and, as such, may be time-markers.

Concentrations and Sequence

The largest concentration of the oldest (Prenumic) rock art is at Atlatl Cliff, which is spatially related to the Stahl Site, its early dates, and the desert scrub environment (see Fig. 3). We suggest a preliminary stylistic sequence for the atlatl element based on *objectively* evaluated levels of patination. Scratched rock art patterns are concentrated at Pottery Slope, which is adjacent to Atlatl Cliff. In sharp contrast, the *surviving* painted rock art is all related to the lake and its riparian environment (Fig. 4). A wide range of other rock art elements nearer Pagunda has *subjectively* evaluated levels of patination that suggests varying time depth. Archaeologically documented activities conducted at Pagunda include food resource procurement, preparation, and con-



Figure 4. Locus 3, Panel 7: painted zigzag pattern. Image adjusted for publication. Photo: Clarus Backes, Jr. Courtesy UCLA Rock Art Archive.

sumption; building of shelters; crafts production; and tool making. Native peoples were present near and in Stahl Site Cave in 1872, and some elements there may be from that time period. However, Stahl Site Cave elements are not factored into our analysis due to heavy disturbance of the cave and alteration of the rock art. One interesting historic element—a scratched representation of a steam locomotive—was recorded. Modern graffiti at Little Lake Ranch is scant.

Classic and Iconic Representations

Conventionalized motifs—those that are either “classic” or “iconic”—all have a powerful ability to “stand for” or denote something other than themselves. A classic rock art motif is recognizable in two ways: first, by the presence of standardized attributes representing consistent characteristics and, second, by frequent occurrence within a defined area or culture. Such a classic motif is *presumed* to have meaning. In contrast, an iconic motif or icon actually *signifies* meaning by sharing a property with that which is represented. The purpose of icons is clear: they are meant to focus attention and encourage participation in ritual or performance (Renfrew 1994).

Representational or realistic figurative elements, when conventionalized, become hyper-realistic and may then enter the classic or iconic realm. Recent research in our area convincingly revisits the thesis of a bighorn sheep “cult” marked by its own iconic motif and correlated with an increase in rock art production and, as well, with archaeological evidence of a dramatic decline in the bighorn sheep population. We consider the bighorn sheep motifs at Little Lake Ranch within this context (Fig. 5).

Ethnic and Personal Identity

During ethnographic time Pagunda was a major Panamint Shoshone semi-permanent encampment referred to as a “village” or “hamlet.” Territorial boundaries throughout the area, if not completely flexible, were permeable, and other Numic groups frequented the Little Lake area from *circa* 1000 C.E., including the Owens Valley Paiute, the Kawaiisu, and the Tübatulabal.

The Numic ethnic identity issue in rock art is complex. However, there is good ethnographic documentation of decipherable, if overlapping,



Figure 5. Locus 4, Panel 51: petroglyphs, including bighorn sheep motifs. Photo: H. Bill White. Courtesy UCLA Rock Art Archive.

ethnic identity markers in body art among California groups and interwoven in basketry design among the Panamint Shoshone, the Kawaiisu, and the Tübatulabal. In basketry, for example, ticking (multiple vertical lines) and enclosed bands of designs were common, while the vertical or diagonal orientation of lines or stacks of similar motifs is a demonstrable aesthetic preference of the Panamint Shoshone. The preferred direction of the spiral in weaving is different for the Owens Valley Paiute than it is for the other groups.

Depictions of spiritually important beings follow certain rules. Rattlesnake, for example, was usually depicted by zigzags or chains of diamonds arrayed vertically by the Owens Valley Paiute and horizontally by the Panamint Shoshone, the Kawaiisu, the Tübatulabal, and by the Yokuts (among the California groups). Hidden personal identity markers, including the so-called menstrual marks, were often interwoven with basketry designs. We conducted several relationship tests on these and other motifs, all of which are represented in Little Lake Ranch rock art. Our tests were inconclusive because our samples in several of the motif categories were small, but the potential of such analysis remains. The painted rock art at Little Lake Ranch was originally recognized by Campbell Grant as containing hints of the Yokuts style—probably via the Kawaiisu and Tübatulabal—and we agree.

Trade, Exchange, and Interconnectivity

Ancient Great Basin trade networks for nonperishable items, including shell and obsidian, are well documented. Fowler (2009: 85) reconstructed what she calls “the mental and physical world of travel” using ethnographic data for trails in the territory of the Las Vegas Southern Paiute and Chemehuevi. Sutton (1981: 124) discussed north-south interconnectivity between the valleys of the Western Mojave and suggested the existence of “gateway communities” between valleys. Trans-Sierra linkage through trade, particularly of Coso Sugarloaf-quarried obsidian but also of marine shell (*Olivella* sp. and *Haliotis* sp.), is established. We are drawn to the concept of a “gateway” between the Indian Wells Valley to the south of Little Lake and the Rose Valley. We view Little Lake as a crossroads of western Great Basin and California Native cultures.

Rock Art, Crafts, and Gender

The concentration of rock art at Little Lake Ranch is second only to that of the nearby Coso Rock Art Landmark and, therefore, constitutes a priori evidence of the regional importance of the lake and its environment. Scratched rock art is predominantly associated with one locus: Pottery Slope. We found a rare, cached Owens Valley Brownware pot and a stone *mano*, or grinding tool, amidst the rock art at Pottery Slope during our fieldwork (Fig. 6). The links between those objects and the female gender are undeniable, and in our analysis we extend the relationship to include scratched rock art patterns and scratched and incised pottery surface decoration. Therefore we suggest that some Little Lake Ranch rock art was made by girls and/or women.

Social Relations and Leadership

We briefly explored the well-trodden ground of social power vis-à-vis shamans. We note the changing ways in which shamans were perceived by ethnographers, how those perceptions impacted the inferences drawn in the field, and what such a situation means to rock art interpretation today. We note the relative transience of leadership status within Numic communities and explore the levels of ritual responsibility accorded to leaders and shamans. We reason that shamans, not all of whom were male, made some,

but not all, rock art and that they did so in social and ceremonial contexts primarily but not exclusively centered on curing and healing. We conclude that at Little Lake Ranch there were multiple social goals for rock art production.

Wealth Transmission and Rock Art

Hunter-gatherer groups in our area were not relentlessly egalitarian and forms of material wealth existed. The potential for success in a range of activities, from hunting to crafts production, was created and sustained by the intergenerational transfer of specialized knowledge and skills. Drawing upon the recent work of Bowles, Smith, and Mulder (2010) and their notion of “embodied” success in hunter-gatherer societies we developed and explored the idea that some rock art elements commemorate success for the purpose of accruing and transferring its associated value (status) as wealth to the next generation.

Competition, Conflict, and Cooperation

Steward mapped—but, as noted above, later downplayed or denied—territorial boundaries for our area; somewhat higher social organizational levels than he detected are more recently conjectured (Clemmer, Myers, and Rudden 1999). With the exception of cultivated plots among the Owens Valley Paiute, however, no claims of property exclusivity or ownership are documented. Seasonal variation and overlap in resource exploitation by mobile foraging Numic groups in the larger Little Lake area was described by Steward (1938: 254) as “sparse and erratic” with “no competition” for plant food. Yet names of resources traditionally attached to some Numic groups as identity markers are believed to refer to land use and thus to resource claims. Vital water resources were shared, especially those thought to have healing properties, as well as those in the vicinity of camps such as Pagunda. While fringe areas interfacing with non-Numic groups were in conflict during ethnographic time, virtually nothing is known of organized warfare that does not involve Euro-Americans. In terms of Little Lake Ranch rock art, we see little purposeful destruction. There is scant evidence of scratching to obliterate underlying pecked motifs, only a slight amount of superimposition, few “exotic” elements, some modification, and little vandalism.

ANCIENT AESTHETICS AND BELIEF

There are hints of ceremonial or ritual behavior embedded in the published and unpublished archaeological objects we located and examined from the Stahl Site and Pagunda excavations, and it is plausible that some rock art—perhaps most of it—was produced by individuals in the context of belief but not necessarily during ceremony. Shamanism and, specifically, vision quest activity is a probable explanation for rock art in a rock shelter we call Painted Cave (Locus 3). We recognize the insights gained in rock art studies through applied biological theory and cognitive neuroscience (Lewis-Williams 2002; Renfrew and Scarre 1998), but the question arises: if a biochemical process is the causal explanation or genesis of a given design unit, to what extent are culturally embedded values the impetus for assembling design units into motifs, and how do motifs evolve into icons? Clearly, if visual images are “just patterns of light,” they cannot have “innate or self-evident associations” (Wagner 1981: 41). Our current data *do not allow* us to assume that biochemical correlates of certain basic Little Lake Ranch rock art design units are—without doubt and in all cases—their cultural *raison d'être*, or that of more evolved, complex, and widely repeated motifs.

A RARE OPPORTUNITY

Through my work as an advisor to the UCLA Rock Art Archive since 1980 and as director since 1997, the Cotsen Institute of Archaeology has given me the opportunity to integrate my research interest in three-dimensional, figurative stone sculpture—specifically, the incomparable monolithic statues (*moai*) of Easter Island—with two-dimensional carvings and paintings. On first glance, Easter Island and Little Lake have little in common, and the questions their respective societies raise about human behavior seem to be far removed from one another. The founding culture of Easter Island is a Polynesian chiefdom; in contrast, the transient Penumic and Numic hunters and foragers of the Little Lake area formed loosely organized small groups or bands seasonally on the move within a large territory. Yet both Little Lake and Easter Island are oases; one is landlocked in the California desert, and the other is anchored alone in the remote Pacific.

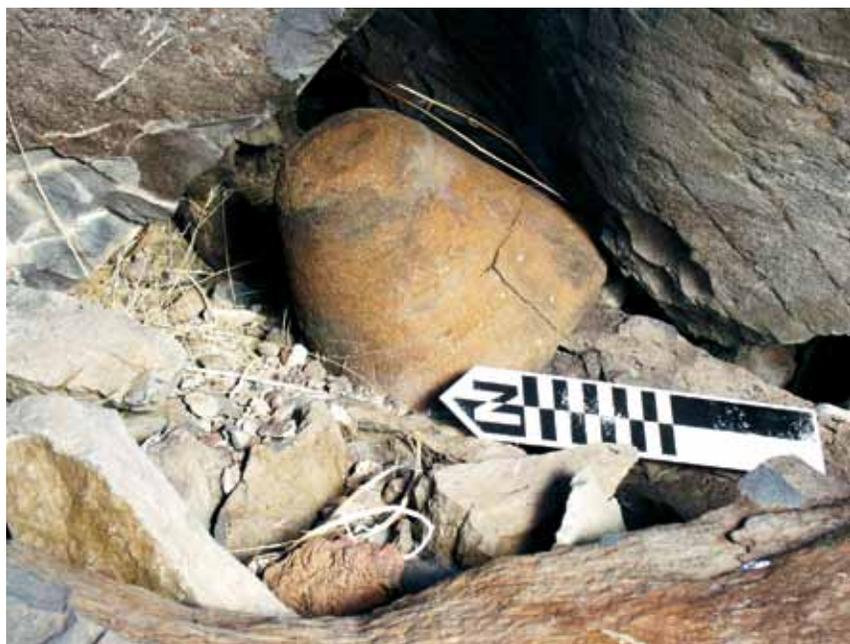


Figure 6. Owens Valley Brownware pot in situ, Pottery Slope. Photo: H. Bill White. Courtesy UCLA Rock Art Archive.

Campbell Grant, a research pioneer and early contributor to the Rock Art Archive, believed that the Coso Rock Art Landmark—not unlike Easter Island—was “an island of specialized art tradition” that “apparently developed in almost complete isolation” (Grant, Baird, and Pringle 1968: 115). He believed that the Coso Rock Art Landmark was a sacred destination and that most of the rock art there was the product of ceremonial activity centered on the procurement of large game animals. We explore this inspired idea—as well as expansions on it and dissenting views about it—in our newly published book.

The puzzle of fluorescing human creativity in marginal, evolving environments exists on islands and in deserts; the research questions thus raised are compelling. They include such issues as choices made in aesthetic expression, religious adaptation, economic survival with limited resources and evolving climates, and continuity in the face of devastating incursions by outsiders. Art and archaeology are not intrinsically incompatible; art and science are not really poles apart.² *

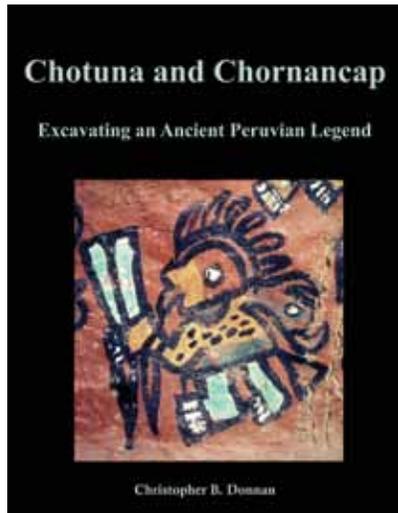
2 This paper summarizes the book *Rock Art at Little Lake: An Ancient Crossroads in the California Desert*, which is published by the Cotsen Institute of Archaeology Press.

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BENEDICTE GILMAN¹



Chotuna and Chornancap: Excavating an Ancient Peruvian Legend

Christopher B. Donnan

ISBN: 978-1-931745-88-8 (cloth),

978-1-931745-89-5 (paper)

Publication date: February 2012

Series: Cotsen Institute of Archaeology

Monograph 70

Price: \$75.00 (cloth), \$45.00 (paper)

Although the ancient Peruvians had no writing system, oral histories were passed down from generation to generation. When the Spanish arrived in Peru around 1530, many of these stories were still being told. One of the most intriguing of the oral histories is the legend of a ruler named Naymlap, who founded a dynasty that ruled the Lambayeque Valley of northern Peru centuries before European contact. Naymlap is said to have built his palace at a place called Chot. The archaeological site

of Chotuna, in the lower part of the Lambayeque Valley, has often been thought to be the location of Chot, and the nearby site of Chornancap may have been part of the Chotuna complex. In an effort to test the validity of the Naymlap legend, archaeological excavations were conducted at Chotuna and Chornancap. Plans of the monumental architecture were completed, most of the major structures were mapped and excavated, and a good chronology for the sites was developed. This study presents the results of the excavations at Chotuna and Chornancap and demonstrates the extent to which the archaeological evidence correlates with the sequence of events described in the Naymlap legend.

Exploring Methods of Faunal Analysis: Insights from California Archaeology

Edited by Michael A. Glassow and Terry L. Joslin

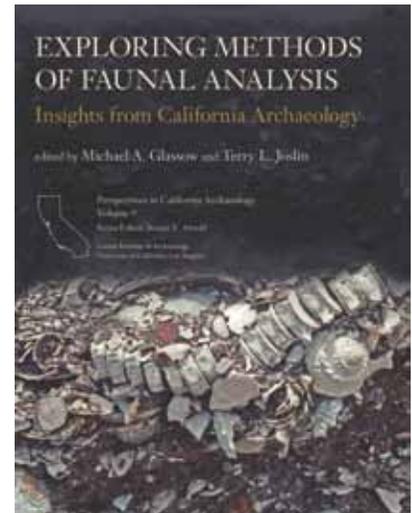
ISBN: 978-1-931745-87-1

Publication date: March 2012

Series: Perspectives in California Archaeology 9

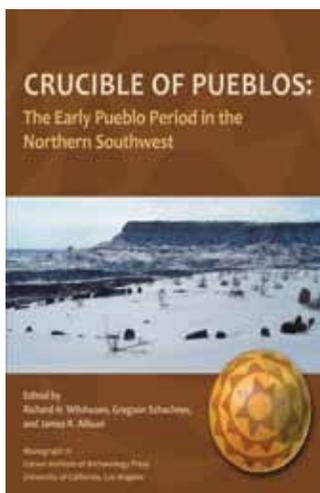
Price: \$34.95 (paper)

Faunal remains in California sites, particularly those from coastal shell middens, have attracted the attention of archaeologists since the late nineteenth century. The fourteen essays in this book demonstrate how both vertebrate and invertebrate faunal remains can elucidate subsistence practices, settlement patterns, technological systems, economic exchange, social organization, adaptation to variability in



resource distribution and abundance, and the impacts of historic land use. The large amount of faunal remains in California archaeological sites means that most archaeologists working in the state inevitably must give these resources their close attention—and yet methodological challenges remain. The chapters in this thoughtfully edited volume tackle these challenges, providing strategies for identifying and mitigating sample bias, and recommending quantitative techniques borrowed from a variety of disciplines. The volume also presents examples that illustrate the use of faunal data to test hypotheses derived from microeconomic theory, the applicability of bone and shell chemistry to faunal analysis, and the relevance of faunal data to addressing issues in biology.

¹ Cotsen Institute of Archaeology, UCLA.



Crucible of Pueblos: The Early Pueblo Period in the Northern Southwest

Edited by Richard H. Wilshusen, Gregson Schachner, and James R. Allison

ISBN: 978-1-931745-95-6

Publication date: April 2012

Series: Cotsen Institute of Archaeology Monograph 71

Price: \$34.95 (paper)

Archaeologists are increasingly recognizing the early Pueblo period as a major social and demographic transition in Southwest history. This book presents the first comprehensive summary of population growth and migration, the materialization of early villages, cultural diversity, relations of social power, and the emergence of great houses during the early Pueblo period. Six chapters address these developments in the major regions of the northern Southwest. Four synthetic chapters then examine early Pueblo material culture to explore the dynamics of social identity, power, and gender during this time of rapid change. With contributions by twenty-five of the leading archaeologists working in the Southwest, this important volume offers new insights into the origins of villages and examines how the study of the early Pueblo period contributes to an anthropological understanding of Southwest history and early farming societies throughout the world.



Life at Home in the Twenty-First Century: 32 Families Open Their Doors

Jeanne E. Arnold, Anthony P. Graesch, Enzo Ragazzini, and Elinor Ochs

RECIPIENT OF THE JO ANNE STOLAROFF COTSEN PRIZE

ISBN: 978-1-931745-61-1

Publication date: July 2012

Price: \$24.95 (cloth)

Contemporary family life in America has been examined from many perspectives but rarely through the lens of household material culture—the things we own and the ways we use our homes. *Life at Home in the Twenty-First Century* crosscuts the ranks of important books on social history, consumerism, contemporary culture, the meaning of material culture, domestic architecture, and household ethnoarchaeology. Using archaeological approaches to human material culture, this volume offers unprecedented access to the middle-class American home through the kaleidoscopic lens of no-limits photography and many kinds of never-before acquired data about how people actually live their lives at home. This book explores the home lives of middle-class families in California, exposing vast material worlds and actual and idealized modes of life at home. It is a documentary record of the fascinating richness of these worlds and a unique

visual journey into modern cultural history. Those who read this book will likely see their own lives mirrored in these pages and will reflect on how others cope with their mountains of possessions and other daily challenges. Full-color illustrations throughout.

The Construction of Value in the Ancient World

Edited by John K. Papadopoulos and Gary Urton

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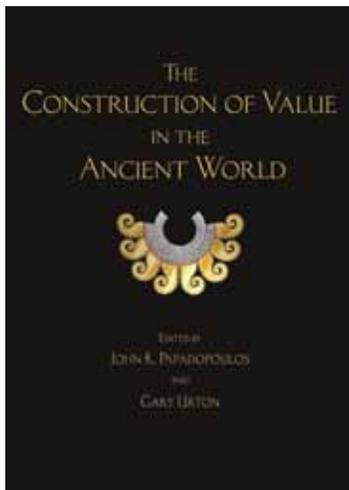
ISBN: 978-1-931745-90-1

Publication Date: November 2012

Series: Cotsen Advanced Seminar Series no. 5

Price: \$65.00 (cloth)

Scholars from Aristotle to Marx and beyond have been fascinated by the question of what constitutes “value.” *The Construction of Value in the Ancient World* makes a significant contribution to this ongoing inquiry, bringing together in one comprehensive volume the perspectives of leading anthropologists, archaeologists, historians, linguists, philologists, and sociologists on how value was created, defined, and expressed in a number of ancient societies around the world. Based on the basic premise that value is a social construct defined by the cultural context in which it is situated, the volume explores four overarching but closely interrelated themes: place value, body value, object value, and number value. The questions raised and addressed are of central impor-



tance to archaeologists studying ancient civilizations: How can we understand the value that might have been accorded to materials, objects, people, places, and patterns of action by those who produced or used the things that compose the human material record? What do we know about how objects were valued in the past? Why were certain materials valued over others by people in many different parts of the world? What qualities of physical substances were at the heart of how cultures determined, negotiated, and on occasion sanctioned value? Taken as a whole, the contributions to this volume demonstrate how the concept of value lies at the intersection of individual and collective tastes, desires, sentiments, and attitudes that inform the ways people select, or give priority to, one thing over another.

The History of the Peoples of the Eastern Desert

Edited by Hans Barnard and Kim Duistermaat

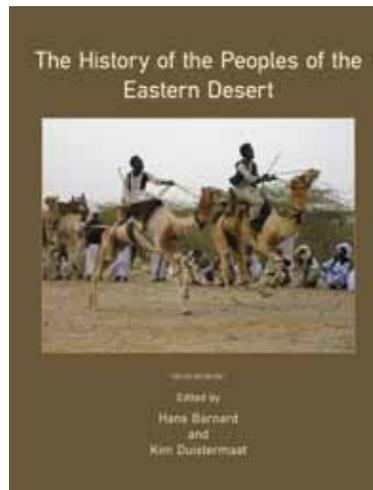
ISBN: 978-1-931745-96-3

Publication date: November 2012

Series: Cotsen Institute of Archaeology Monograph 73

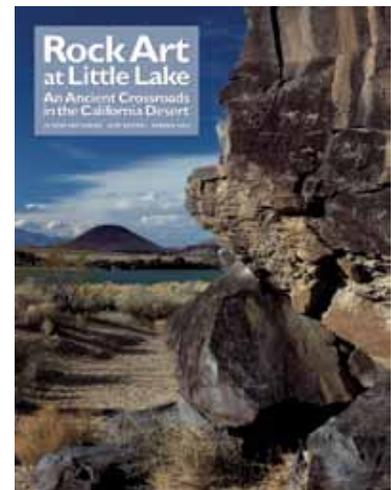
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The last quarter century has seen extensive research on the ports of the Red Sea coast of Egypt, the road systems connecting them to the Nile, and the mines and quarries in the region. What has been missing up until now is a systematic study of the peoples of the Eastern Desert—the area between the Red Sea and the Nile Valley—in whose territories these ports, roads, mines, and quarries were located. The historical overview of the Eastern Desert in the shape of the roughly chronological narrative presented in this book fills that gap.

The multidisciplinary perspective focuses on the long-term history of the region. There are text-based histories, political histories, geographic and historic studies, ethnographies, researches based on philological analyses, and developmental analyses. The extensive range of topics addressed includes specific historical periods, natural resources, nomadic survival strategies, ancient textual data, and the interaction between Christian hermits and their neighbors. The breadth of perspective does not sacrifice depth, for all authors deal in some detail with the specifics of their subject matter. This provides both an overview perspective and the option of reviewing specific subjects in detail. As a whole, this collection is timely, well planned, and provides an outline of the history and sociology of the Eastern Desert that is unparalleled in any language for its comprehensiveness. As such, it will be the essential starting point for future research on the Eastern Desert.



Rock Art at Little Lake: An Ancient Crossroads in the California Desert

Edited by Jo Anne Van Tilburg, Gordon E. Hull, and John C. Bretney

RECIPIENT OF THE JO ANNE STOLAROFF COTSEN PRIZE

ISBN: 978-1-931745-92-5 (cloth),

978-1-931745-93-2 (paper)

Publication date: November 2012

Series: Cotsen Institute of Archaeology Monograph 74

Price: \$59.00 (cloth), \$35.00 (paper)

The product of ten years of fieldwork at Little Lake Ranch in the Rose Valley, the southern gateway to the Owens Valley, this book presents the results of intensive rock art analyses carried out by the UCLA Rock Art Archive interdisciplinary research team. The research attempts to tease out and establish a connective web of associations to break down long-established but artificial barriers between rock art and the rest of archaeology. Through traditional and time-honored methods of stylistic analysis, the focus is on recent breakthroughs in the analysis of meaning and religion in the context of landscape attributes and ecological opportunities. Regional or ethnic differences suggested by the rock art record has made it possible to create a flexible analytical framework containing previously unpublished or overlooked archaeological excavation and object data.

This book describes the occurrence, concentration, distribution, and formal variation of pecked and painted motifs. Scratched, pecked, and painted patterns are analyzed separately. Analysis involved discrete technical or symbolic aspects of Little Lake Ranch rock art: chronology, scratched-pattern distribution, the desert bighorn sheep and atlatl motifs traditionally seen as integrated into a “hunting magic” thesis, and painted rock art. Discussion of ancient aesthetics poses the question: What is rock art for? The book includes a catalogue of rock art motifs chosen to give the reader a five percent sampling of individual elements considered within the motif analysis process. Full-color illustrations throughout enhance the physical appeal of this beautiful book.

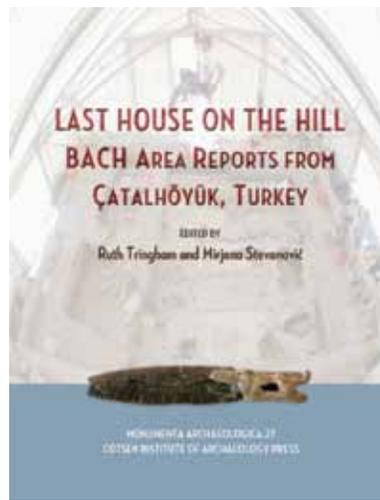
Last House on the Hill: BACH Area Reports from Çatalhöyük, Turkey

*Edited by Ruth Tringham and
Mirjana Stevanović*

RECIPIENT OF THE JO ANNE
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Occupied from around 7500 to 5700 B.C.E., the very large Neolithic and Chalcolithic settlement of Çatalhöyük in Anatolia is composed entirely of domestic buildings; no public buildings have been identified. First excavated in the early 1960s, the site was subsequently left untouched until 1993 when investigation was renewed in a large project. During the summers of 1997–2003 a team from the University of California at Berkeley (the BACH team) excavated Building 3 and Spaces 87, 88, and 89 in an area at the northern end



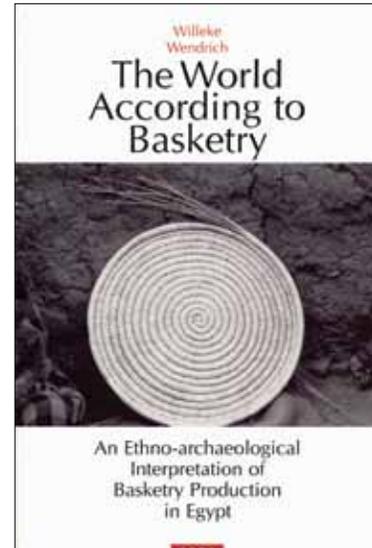
of the East Mound of Çatalhöyük. The houses there date predominantly to the late Aceramic and early Ceramic Neolithic, around 7000 B.C.E. *Last House on the Hill* is the final report of the BACH excavations. As with previous reports on the Çatalhöyük Research Project, this volume comprises both interpretive chapters and empirical data from the excavations and their materials. The research of the BACH team focuses on the lives and life histories of houses and people, the use of digital technologies in documenting and sharing the archaeological process, the senses of place, and the nature of cultural heritage and our public responsibilities.

Last House on the Hill is mirrored by an online media- and data-rich digital version (<http://www.codifi.info/projects/last-house-on-the-hill/>) that interlinks all the original data, media, analyses, and interpretation of the BACH project with the final synthetic contents presented in this monograph.

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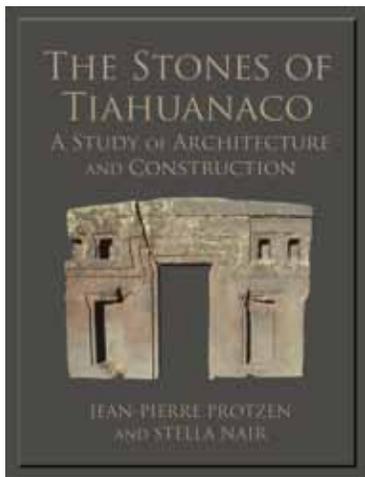


The World According to Basketry: An Ethno-archaeological Interpretation of Basketry Production in Egypt

Willeke Wendrich

Price: Free; Print on Demand

On the basis of two different archaeological sites, Tell el-'Amarna in Middle Egypt (about 1350 B.C.E.) and Qasr Ibrim in Nubia (mainly third century B.C.E. to sixth century C.E.), this book deals with the production of basketry in ancient Egypt. Contemporary basket makers in Middle Egypt and New Nubia are studied for comparative purposes. The book deals, first, with the technical aspects of basketry production and, subsequently, with the wider world of basket makers. A digital video illustrates the findings in the text.



The Stones of Tiahuanaco: A Study of Architecture and Construction

Jean-Pierre Protzen and Stella Nair

Since Europeans first saw the monumental stone structures at the southern end of Lake Titicaca in Bolivia, they have marveled at the skill of the people who produced them. These constructions have rightfully been called the world's most artful and skillful stone architecture. Its precision rivals that of the Incas to the point that writers from Spanish chroniclers of the sixteenth century to authors of the twentieth century have claimed that Tiahuanaco not only served as a model for Inca architecture and stone masonry, but that the Incas even imported stonemasons from the Titicaca Basin to construct their buildings. This careful study refutes this idea and delves into questions of the techniques of the Tiahuanaco stonecutters; their knowledge of geometry; and how they quarried, cut, and assembled the stone. The detailed analyses of building stones yield insights into the architecture of Tiahuanaco, including its appearance, rules of composition, canons, and production.

The Dead Tell Tales: Essays in Honor of Jane E. Buikstra

Edited by María Cecilia Lozada and Barra O'Donnabhain

Honoring Jane Buikstra's pioneering work in the development of bioarchaeological research, the essays in this volume stem from a symposium at the 2011 annual meeting of the Society for American Archaeology. Multiple generations of Buikstra's former doctoral students and other colleagues gathered to discuss the impact of her mentorship. The essays are remarkable for their breadth, in terms of both the topics discussed and the geographical range they cover. The contributions highlight the dynamism of bioarchaeology, which owes so much to the strong foundations laid down over the last few decades. The volume documents the degree to which bioarchaeological approaches have become normalized and integrated into anthropological research: bioarchaeology has moved out of the appendix and into the interpretation of archaeological data. New perspectives have emerged, partly in response to theoretical changes within anthropology, but also as a result of the engagement of the broader discipline with bioarchaeology.

Classic Maya Political Ecology: Resource Management, Class Histories, and Political Change in Northwestern Belize

Edited by Jon C. Lohse

This volume presents multidisciplinary research conducted in upper-northwestern Belize of the central Maya lowlands, addressing regional-scale political processes and integration from the Early Classic through the end of the Classic. These studies pioneer and apply a political-ecology approach to understanding ancient Maya society. This paradigm focuses on social relationships between all social strata, effectively framing the political agency of commoners engaged in productive undertakings. Additionally, it gives attention to interactions between humans and nature, emphasizing the

often-overlooked point that Classic Maya politics were fundamentally grounded in sustainable adaptations to changing environments. Introductory and background chapters define key terms and concepts and contextualize the study region. Following chapters present the results of household and site-center excavations and material analyses that inform on widespread sociopolitical processes and interactions. A summary chapter reviews the volume's contributions to the archaeological study of mutual interdependencies between class factions, and how these shaped political outcomes.

Advances in Titicaca Basin Archaeology 2

Edited by Alexei Vranich, Elizabeth Klarich, and Abigail R. Levine

Volume 2 in a planned series of studies on the archaeology of the Titicaca Basin—an area encompassing over 50,000 km² with a long and rich archaeological past—focuses on the southern Titicaca region, the area that would become the core of the Tiwanaku heartland. Over the last hundred years, scholars have painstakingly pieced together the fragments of this past. The contributions in this volume demonstrate the maturation of the field of Titicaca Basin studies. Large-scale surveys will need to continue, and areas will need to be revisited as we further refine our chronologies and understanding of site-formation processes. But the field has reached a point where we have developed a firm understanding of the patterns of settlements, which permits us to start investing energy on single locations. In view of the fact that both archaeologists and the general public find polemics an interesting and effective manner in which to frame conflicting and incomplete data, the Titicaca Basin will serve as an excellent springboard for broader discussions of the roles of authority, coercion, and the intensification of resources and trade for the development of archaic states worldwide.

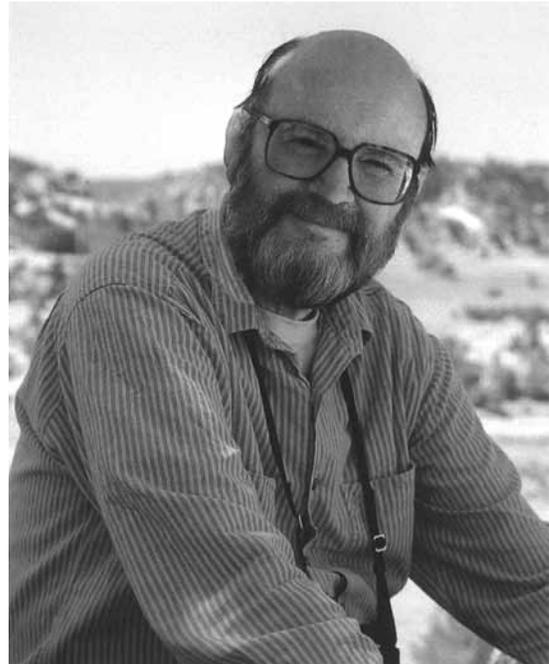
William M. Sumner (1928–2011)

ELIZABETH CARTER¹

The Cotsen Institute of Archaeology notes with sadness the July 2011 passing of William M. Sumner, a leading figure in the study of ancient Iran. In 2000 the Cotsen Institute was honored to publish *Yeki Bud, Yeki Nabud: Essays on the Archaeology of Iran in Honor of William M. Sumner*, edited by Kamyar Abdi and Naomi Miller (Cotsen Institute of Archaeology Press Monograph no. 48). The articles in the book reflect Sumner's numerous contributions to the study of ancient Iran and document the support he gave to the many students he mentored at Ohio State University (1971–1989), the University of Chicago (1989–1997), and on his excavations.

Bill Sumner graduated from the U. S. Naval Academy. It was his postings in the Mediterranean and Iran that led him to pursue a graduate degree in anthropology. I first met Bill when I was a high school student and we were both in a class taught in English on Iranian archaeology at Tehran University by Ezat O. Negahban. Professor Negahban was excavating at the site of Marlik. The highlight of the class was a visit to the site in the Elbourz Mountains. We got to see the extraordinary riches of this spectacular site as they were being excavated, and both of us were hooked on archaeology. It was only much later when I was a graduate student that Bill and I met again and realized that we had been “classmates.”

After finishing his stint in the Navy, Bill returned to school and completed his Ph.D. at the University of Pennsylvania in 1972. During his survey work in the Marv Dasht, which formed the basis of his doctoral dissertation, he collected the inscribed bricks that led to the identification of the site as ancient



Anshan (Modern Tal-i Malyan). This large (150 ha) mound, 36 kilometers northwest of Shiraz, was the unidentified capital city of ancient Elam. Sumner began excavations there in 1971 and continued until 1978. During this period he pioneered the use of proton magnetometry and probabilistic surface-sampling surveys of portions of the site in the investigation of a large urban settlement. He also conducted excavations in deposits dating from the fourth through the early first millennium B.C.E. A full list of all his publications, including those focused on Tal-i Malyan, is found in his Festschrift.

Professor Sumner served as director of the Oriental Institute of the University of Chicago from 1989 to 1997 and oversaw a major expansion of the Institute's building. When he retired in 1997 he continued to work on publishing his Malyan excavations, which culminated in the 2003 volume *Early Urban Life in the Land of Anshan: Excavations at Tal-e Malyan in the Highlands of Iran*, MER 3 (University Museum Monograph 117, Philadelphia). Bill was a scholar of great personal and professional integrity. His colleagues will miss his good cheer and visionary leadership. ✱

¹ Department of Near Eastern Languages and Cultures, and Cotsen Institute of Archaeology, UCLA.



PHOTO: EMILY UYEDA KANTRIM.



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