Divination through maize casting and the identification of illness in front of the idol of Ehecatl-Quetzalcoatl. Codex Magliabechiano, folio 78r.

DINNER WITH THE SPEAKER

Please join this month’s speaker, Jeremy Coltman, and PCAS members for dinner before the October 10th General Meeting. We will meet at 6 pm at Mimi’s Café, 4030 Barranca Parkway, Irvine.
Dr. Steven Waller presented an interesting discussion of his analysis of various auditory illusions as they relate to rock art. He noted that the concept of sound waves only became known in the eighteenth century, and sound phenomena such as echoes were previously ascribed other causes—often supernatural ones. He spoke of developing an interest in the causes of auditory illusions after a visit to Bedeilhac Cave in France when he became aware of echoes from the cave as though it was answering back. Based on the legends of many cultures, ancient populations may have considered these echoes to be corporeal spirits in the rocks answering back.

People of the Pacific Northwest are known for the creation of “Echo Masks”—human masks with interchangeable mouthpieces, representing the wearer’s transformation to his animal spirit. Echo myths of the area tell of the first totem pole and a sky which includes the sun, moon, and echo.

The Memgwashio spirit of eastern Canada is said to live in the rocks and will answer back to children who call his name. Rocks in these areas display painted handprints, said to show where Memgwashio closed the rocky portal when retreating into the rock. The strongest echoes from these rocks are found to be at the point of the painted panels. This association of rock art and acoustic effects is found worldwide. Dr. Waller demonstrated his research methods by showing us a map of Horseshoe Canyon in Utah where he created a sound using a clicker (actually a mouse trap) and recorded the intensity of the resulting echo. In the Utah study these echoes were graphed on the map of the canyon. The echoes were seen to be most intense in the area of known rock art sites, but there was one additional high-intensity area. When asked about this, a local ranger confirmed there was, indeed, a lesser known rock art concentration at that point in the canyon.

Cave acoustics produce an additional effect known as reverberation. Dr. Waller considers this to give the illusion of thunder and has identified storm imagery rock art in areas of strongest reverberation. These images include hooved animals and thunder-birds. In the Niaux Cave in France, the reverberations are strongest in the deepest cavern, the Salon Noir, and this is the location of the paintings of hooved animals. The Pech Merl Cave, also in France, creates percussive echoes that sound like hoof beats, and 90 percent of the images in the cave depict hooved animals. These images are only found in areas of strong reverberations. The Aztec deity, Tlaloc, is known as the god of rain, lightning, and thunder, and his image is often found in areas with the strongest echoes. The connection with hooved animals continues into later mythology with thunder gods Thor, Zeus, and Odin being associated with such animals. Jupiter is depicted with the bull and ram. Thunder or lightning have also been represented by a forked or trident-like symbol, and these are often seen in association with the hooved animals.

Another auditory illusion is attributed to interference patterns. This occurs when sound waves from two sources cancel each other out. People walking in a circle around two identical sounds will pass through areas where the sound is less audible, suggesting a barrier between the source and the listener. Dr. Waller told of testing this theory by blindfolding subjects and having them walk around two sound sources in an open field. He then had the subjects draw the scene as they perceived it. In all cases they drew high solid walls, pillars, or rocks at intervals around the circle. Dr. Waller suggests that the English stone circles, such as Stonehenge, may have been built to replicate this audible pattern inasmuch as the visual shadows equal the acoustic shadows and mimic the interference patterns. Mythology of the region refers to two magical pipers who played to entice maidens who danced around them in a circle and were turned to stone.
SEPTEMBER BOARD MEETING SUMMARY

Submitted by Brian Steffensen

President Megan Galway called the meeting to order at 7:00 pm at the Old Orange County Courthouse in Santa Ana, California. Board members present: Bob Brace, Gail Cochlin, Joe Hodulik, Hank Koerper, Steve O’Neil, and Brian Steffensen. Members present: Rene Brace, Ronald Fernandez, Scott Findlay, Jane Gothold, and Kathleen Shada.

The Board approved the minutes of the June 2013 meeting. The Treasurer’s report was approved.

Old Business:

The Board unanimously approved the slate of candidates submitted by the Nominating Committee. Candidates for the November election. The candidates are Rene Brace, Scott Findlay, and Jane Gothold. No other biographies were received at the September General Meeting.

Arrangements were discussed for PCAS’s participation in Prehistoric OC at Clark Park on October 12.

New Business:

Steve O’Neil announced that a plaque will be dedicated to honor early PCAS member Helen Smith on October 13, noon–4 pm, at Estancia Park in Costa Mesa as part of the Costa Mesa Historical Society’s Early California Days at the Adobe. Helen had a wide influence in the development of archaeological and historical groups in Orange County and California. Steve will have an outreach at the event with artifacts and early PCA Quarterly issues edited by Helen Smith.

Committee Reports:

The next curation workday will be November 16. Joe Hodulik’s Award-Donation table raised $128 at the September meeting for the scholarship fund! Field Trips Chair Scott Findlay reported that there are planned field trips to the Kanab, Utah, area beginning September 28; to the Mojave National Preserve, October 19–21; and to the San Diego Rock Art Conference on November 2. Editor Hank Koerper stated that another Quarterly issue will be printed before the end of the year.

The meeting was adjourned at 7:45 pm.

October 2013 PCAS Newsletter Vol. 52 No. 10

October Speaker (continued from p. 1)
courty palaces they walked in life, there was certainly a more malevolent side to courtly life as the actions of Moctezuma II clearly suggest. Recent research indicates that maleficent magic was a significant component of the ideologies of complex Mesoamerican societies. Anthropologists have typically studied witchcraft and sorcery as an explanation for the causes of misfortune, causes that tend to be rooted in cultural beliefs concerning special practitioners who possess supernatural power, often in the form of actions that can inflict harm. However, those that could kill could also cure and vice versa. The dark arts certainly played a pervasive role in the political and religious ideology of ancient Mesoamerica. Today, much like in the past, witchcraft and sorcery remain chaotic antisocial behaviors that constantly pose a threat to a balanced and moral life. This talk will explore the long tradition of witchcraft and sorcery in ancient and contemporary Mesoamerica. A visual vocabulary indicative of sorcery and witchcraft in ancient Mesoamerica will also be considered.

Jeremy Coltman is a graduate student in the Department of Anthropology at California State University, Los Angeles. He has published several articles and given numerous talks regarding the symbolism, cosmology, and religion of Mesoamerica. He has recently held a research assistantship through the Moses Mesoamerican Archive at Harvard University and has spoken to the Smithsonian Associates Public Outreach Program in Washington D.C. Coltman has conducted fieldwork at Midnight Terror Cave, Belize, and is currently co-editing a book with Dr. John Pohl on witchcraft and sorcery in ancient and contemporary Mesoamerica.

PCAS LIBRARY

The PCAS Library is located on the first floor of the Old Orange County Courthouse, 211 W. Santa Ana Blvd., Santa Ana. The library holds early site reports from PCAS excavations, PCAS and other publications, academic theses, and other materials of interest to researchers. The library is open most Wednesday mornings to members and the public.

To confirm library hours or to make an appointment, please contact PCAS Librarian/Archivist Jane Gothold at librarian-archivist@pcas.org or 562-947-6506.
**PCAS ANNUAL MEETING AND ELECTION**

The PCAS Annual Meeting and Election of Directors will be held on November 14, 2013, at the Irvine Ranch Water District Community Meeting Room. The meeting will begin at 7:30 pm, and the election may occur anytime during the meeting. PCAS members will elect three new Directors. In order to vote in the November election, one must be a member of PCAS by October 10, 2013 (date of record). Membership forms and payment must be received by October 10, 2013—either delivered to the PCAS mailing address (postmarks will not be considered) or hand delivered to either Treasurer Bob Brace or Membership Chair Megan Galway at the October 10th General Meeting. Before the election takes place, additional nominations may be made from the floor by any member present with the prior consent of the nominee. If there are more than three nominees, Directors will be elected by secret ballot. **Please plan to attend the November 14, 2013 PCAS Annual Meeting to cast your ballot! A quorum is necessary** for this election.

The PCAS Nominations Committee presents the following nominees—

**Rene Brace** received a BA from UC Riverside and has completed graduate work in public administration. She has attended field schools/classes in California, Arizona, and New Mexico. She is currently the **PCAS Quarterly** Production Editor and maintains the PCAS website. As a past PCAS Board member, Rene served as Treasurer. She has been active in outreach to Garfield Elementary School. Rene is actively involved in the stewardship of PCAS collections and is a member of the curation team.

**Scott Findlay** has been an active member of PCAS for 16 years. As an avocationalist, he has attended local archaeological field schools, and his interests also include geology, botany, biology, and astronomy. He has served as PCAS President, and he is currently Field Trips Chair and a Curation facility manager. Scott has been a regular volunteer for the outreach events, provides logistical support for the monthly General Meetings, and attends all Board Meetings. He has a special interest in the study and protection of rock art sites.

**Jane Gothold** has a BA from Whittier College and also holds a Kindergarten-Primary teaching credential. She is a founding member of PCAS (1961) and has held many leadership positions – President (3 times), Vice President/Program Chair, Treasurer, Curator, Site Director of the China Ranch Project since 1971, and member of the Quarterly Committee. Jane is a Life Member of PCAS and the California Society for Archaeology (SCA). She served as SCA Treasurer for 14 years. Jane’s interests and efforts have been directed at public outreach and education. She currently serves as PCAS Historian/Librarian and Archivist and is a member of Board for the Old Courthouse Museum Society. She is also a member of the Historic Resources Commission for the City of Whittier.

**PREHISTORIC OC**

PCAS will have an outreach table at Prehistoric OC, a Cooper Center event, on Sunday, October 12, 11 am–3 pm, at Ralph B Clark Regional Park, Buena Park. PCAS will present information about our society’s activities and publications along with hands-on activities and displays of local artifacts. The event is free to the public.

If you can volunteer a few hours to man the PCAS table, contact Megan Galway at president@pcas.org or 714-539-6354.

**FIELD TRIPS**

**October 19–21, 2013**

**Mojave National Preserve**

We plan to visit several rock art sites within the preserve. The group will dry camp. Some rock art sites are easily accessed while others require cross country hiking. For those with time constraints, this may be a two-day trip, but it is not recommended as a one-day trip. Please be aware you will be required to sign a code of ethics and waiver of liability.

Contact Scott Findlay (fieldtrips@pcas.org or 714-342-2534) for additional information and to sign up for this field trip.

**November 2, 2013**

**San Diego Rock Art Symposium**

Please plan to join PCAS members at the Annual Rock Art Symposium. We will again have an information and Quarterly sales table, which will be manned during breaks and at lunch. Information and registration is available at [http://www.museumofman.org/](http://www.museumofman.org/).
A wonderful record of regional rock art—highly recommended to all who are interested in rock art. The authors share over 30 years of work in the area in photos and discussion while protecting the location and identity of the sites.

The rock art discussion is divided into chapters by time periods. Archaic Rock Art (7,000–300 B.C.) has two traditions. Nonrepresentational imagery includes linear and curvilinear petroglyphs and later in time, painted abstract geometrics. Representational life forms typically include humans and bighorn sheep although snakes, birds, and carnivores do appear.

Transitional Rock Art (300 B.C.–A.D. 800) includes Snake Gulch and Cave Valley rock art styles. These correspond to Basketmaker II and III cultural periods respectively. Snake Gulch has similar themes to earlier rock art but distinctive characters of the human figures, particularly large size and central placement. They are predominately painted. Cave Valley humans figures are highly stylized with trapezoidal to triangular head and torso blocks. These occur both as petroglyphs and paintings, are smaller than Snake Gulch panels, and much more widely distributed.

Ancestral Puebloan Rock Art (A.D. 800–1250) represents a period of population increase and is the most abundant type of regional rock art. Human figures are distinctive with both solid body and stickman forms. Animal forms and tracks are common along with geometrics and meandering lines.

Protohistoric and historic style rock art (A.D. 1250–1540) is associated with modern tribes and their direct ancestors.

To purchase, go to www.sunbeltbooks.com.

This is the latest addition to the Blue Book Histories which collect available information on Santa Barbara County historical resources. This 36 page booklet brings together historical and archaeological data on the location of the warehouse at Mission La Purisima. The warehouse was integral to the economic support of the mission as it was used to store cattle hides, tallow and other saleable products. Warehouses were generally built away from the main facilities due to the stench of the tanning and tallow rendering processes.

Ruhge presents evidence that the warehouse was located in Los Berros Canyon based on 1854 survey maps and archaeological excavations. Associated with the mapped location of the warehouse were a matalanza (cattle slaughter) killing floor and a water reservoir, gravity fed by a spring with pipelines that connected to the warehouse area tanning vats. Excavations revealed that the warehouse was 200 by 57 feet with rough-hewn rock foundation stones that would have supported walls almost 5 feet thick and probably supported a second story. There was a center length-wise internal wall that divided the warehouse into two rooms. The walls and floors were made of adobe bricks and the roof was red tiles. An interesting archaeological find was a pile of charred cattle hides.

To purchase, go to www.QuantumImaging.us.
Exhibits

Junípero Serra and the Legacies of the California Missions, co-curated by past PCAS speaker Dr. Steven Hackel. PCAS Board Member Steve O’Neil assisted in producing a digital historic map showing the Native American villages in the greater L.A. Basin and the movement of their populations to the Franciscan missions year by year from 1769 through 1836. The Huntington, through January 6, 2014. Fee: $12–$23. Information: Huntington.org

Lectures

Crooked Staff Imagery in Rock Art, by Bernie Jones. San Diego Rock Art Association, Kumeyaay-Ipai Interpretive Center, 13104 Ipai Waaypuk Trail (formerly Silver Lake Drive), Poway, October 6, potluck at 4 pm, presentation at 6 pm. Information: www.sandiegorockart.org.

Geological Approaches to the Study of Ancient Artifacts—Past and Present Research, by Dr. Patrick Sean Quinn (University College London). San Diego Archaeological Center, October 12, 11 am–1pm. Information: www.sandiegoarchaeology.org.

The Ancient Persian Cylinder of Cyrus the Great, by Dr. William Schniedewind, a part of National Archaeology Day Celebration. Bowers Museum, October 19, 2 pm. Fee: $8, Bowers and AIA members free. Information: www.bowers.org or 714-567-3677.


Classes, Meetings, and Events

Prehistoric OC 2013, a Dr. John D. Cooper Archaeological and Paleontological Center event celebrating International Archaeology Day and National Fossil Day. PCAS will have an information table and hands-on activities. Ralph B. Clark Regional Park, Buena Park, October 12, 11am–3 pm. Free. Information: jdcoopercenter.com/

Early California Days at the Adobe—Local History Comes Alive presented by the Costa Mesa Historical Society will include a plaque dedication to early PCAS member Helen Smith. Estancia Park, Costa Mesa, October 13, noon–4 pm. Free. Information: www.costamesahistory.org or 949-631-5918.


The 38th Annual Rock Art Symposium will be held at the Mingei International Museum Auditorium, November 2, 8 am–5 pm. Fee: $50; Museum of Man members and students, $40. Paper submissions: RockArtSymposium@cox.net. Information and registration: www.museumofman.org/rockart.

The 16th Annual CVAS Symposium will be held November 9, Pollack Theatre, College of the Desert, Palm Desert. Free. Information: Ellen Hardy, 760-776-7449 or ehardy@collegeofthedesert.edu.

Websites

Visit www.pcas.org for all the latest news.

Editor’s Note: Please confirm time and place of listing prior to the event. Submit items for Dig This to newsletter@pcas.org.
**PCAS CODE OF ETHICS**

The Pacific Coast Archaeological Society (PCAS) is a non-profit group of professional and avocational people dedicated to proper management of our cultural resources, public education, and the protection and preservation of archaeological materials and collections.

The following principles have been adopted by the PCAS:

1. Professional methods and forms will be used on all archaeological field surveys, excavations, and laboratory sessions.
2. A complete record of field and laboratory work will be filed with the PCAS Curator and stored at a facility approved by the Society’s Board of Directors.
3. No archaeological materials will be removed without proper permits, landowner permission, and a field research design.
4. Unless otherwise legally stipulated before activity commences, all materials collected will be deposited for further research with the Curator at a facility approved by the Society's Board of Directors.
5. All generated reports will be the property of the Society and distributed as deemed appropriate.
6. All Society field activities will be performed only under the direction of a qualified field archaeologist (Principal Investigator) and the supervision of field or site directors.
7. The above principles will be observed on both Society approved projects and projects performed under the direction of an authorized institution or organization.
8. The Society and its members will strive to educate the public of the importance and proper management of our non-renewable cultural resources and to discourage the collection and commercial exploitation of archaeological materials.
9. PCAS members shall not benefit from the acquisition, purchase, sale, or trade of archaeological artifacts, materials, or specimens.
10. All members shall adhere to City, County, State, and Federal antiquities laws.

---

**SIGN UP FOR RALPHS’ COMMUNITY REWARDS**

It’s time to sign up again! PCAS thanks Ralphs and all our participants for this opportunity to earn a donation of at least 1 percent of your Ralph’s purchases.

1. Go to [www.ralphs.com](http://www.ralphs.com) and create an account or sign in (email and password) to your account.
2. Click on “My Account.”
3. Link your card to PCAS by clicking on “Community Rewards.” The PCAS organization number is 90417.

You can also designate PCAS as your choice by using a “scan letter” that you simply give to the Ralph’s cashier along with your Ralphs card (or phone number linked to your card). You only need to present the scan letter one time to link PCAS to your account. “Scan letters” are available at monthly meetings or by contacting [info@pcas.org](mailto:info@pcas.org).

---

**PCAS SPEAKER CALENDAR**

**November 14, 2013**
Dr. Brian Dervin Dillon
*AQUÍ NACIÓ EL MUNDO: Takalik Abaj, Guatemala, and Early Mesoamerican Civilization*

**December 12, 2013** *(Holiday Dinner Meeting)*
Don Christensen
*Rock Art and the Cultural Landscape: A Study in the East Mojave*

**January 9, 2014**
TBA

**February 13, 2014**
Dr. Micah Hale

**March 13, 2014**
Dr. Todd Braje
2013 PCAS BOARD MEMBERS AND COMMITTEE CONTACTS

<table>
<thead>
<tr>
<th>Office</th>
<th>Name</th>
<th>Email</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>*President</td>
<td>Megan Galway</td>
<td><a href="mailto:president@pcas.org">president@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>*Vice-President</td>
<td>Joe Hodulik</td>
<td><a href="mailto:vicepresident@pcas.org">vicepresident@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>*Secretary</td>
<td>Brian Steffensen</td>
<td><a href="mailto:secretary@pcas.org">secretary@pcas.org</a></td>
<td>714-348-9179</td>
</tr>
<tr>
<td>*Treasurer</td>
<td>Bob Brace</td>
<td><a href="mailto:treasurer@pcas.org">treasurer@pcas.org</a></td>
<td>714-544-6282</td>
</tr>
<tr>
<td>*Native American Liaison</td>
<td>Steve O’Neil</td>
<td><a href="mailto:nativeamericanliaison@pcas.org">nativeamericanliaison@pcas.org</a></td>
<td>949-677-2391</td>
</tr>
<tr>
<td>*Newsletter Editor</td>
<td>Sherri Gust</td>
<td><a href="mailto:newsletter@pcas.org">newsletter@pcas.org</a></td>
<td>714-245-0264</td>
</tr>
<tr>
<td>*Quarterly Editor</td>
<td>Hank Koerper</td>
<td><a href="mailto:publications@pcas.org">publications@pcas.org</a></td>
<td>714-633-9287</td>
</tr>
<tr>
<td>*Refreshments</td>
<td>Gail Cochlin</td>
<td><a href="mailto:refreshments@pcas.org">refreshments@pcas.org</a></td>
<td>714-745-0815</td>
</tr>
<tr>
<td>*Voting member</td>
<td>Linda Christison</td>
<td><a href="mailto:lindachristison@pcas.org">lindachristison@pcas.org</a></td>
<td>209-777-2613</td>
</tr>
<tr>
<td>Curator</td>
<td>Mark Roeder</td>
<td><a href="mailto:curator@pcas.org">curator@pcas.org</a></td>
<td>714-299-4150</td>
</tr>
<tr>
<td>Donation-Awards Coordinator</td>
<td>Joe Hodulik</td>
<td><a href="mailto:donation-awards@pcas.org">donation-awards@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Field Trips</td>
<td>Scott Findlay</td>
<td><a href="mailto:fieldtrips@pcas.org">fieldtrips@pcas.org</a></td>
<td>714-342-2534</td>
</tr>
<tr>
<td>Historian/Librarian/Archivist</td>
<td>Jane Gothold</td>
<td><a href="mailto:librarian-archivist@pcas.org">librarian-archivist@pcas.org</a></td>
<td>562-947-6506</td>
</tr>
<tr>
<td>Membership</td>
<td>Megan Galway</td>
<td><a href="mailto:membership@pcas.org">membership@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>Publicist</td>
<td>Joe Hodulik</td>
<td><a href="mailto:publicity@pcas.org">publicity@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Scholarship</td>
<td>Megan Galway</td>
<td><a href="mailto:scholarship@pcas.org">scholarship@pcas.org</a></td>
<td>714-539-6354</td>
</tr>
<tr>
<td>Website</td>
<td>Rene Brace</td>
<td><a href="mailto:info@pcas.org">info@pcas.org</a></td>
<td>714-544-6282</td>
</tr>
</tbody>
</table>

*Denotes PCAS Board Member

PACIFIC COAST ARCHAEOLOGICAL SOCIETY
2013 Calendar Year Membership and Subscription Form

Name(s): ____________________________________________
Address: ___________________________________________
City: _____________________________________________ State: _________ Zip Code ___________
Phone: __________________ Email: ______________________

☐ Yes, I would like to receive my Newsletter by email. Please be sure email above is legible.

I have read and agree to abide by the PCAS Code of Ethics __________________________ Signature __________________________

<table>
<thead>
<tr>
<th>Membership (Includes Quarterly/Newsletter)</th>
<th>Subscription Only</th>
<th>Scholarship Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Active Member - $45</td>
<td>☐ Quarterly - $37</td>
<td>☐ Donation $________</td>
</tr>
<tr>
<td>☐ Family Membership - $50</td>
<td>☐ Newsletter - $18</td>
<td></td>
</tr>
<tr>
<td>☐ Supporting Member* - $55</td>
<td>☐ Student Associate - $10 (email Newsletter only)</td>
<td></td>
</tr>
<tr>
<td>☐ Donor Member* - $75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☐ Lifetime Member* - $1000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* May be individual or family membership

www.pcas.org

Return form with payment to:
PCAS Membership
PO Box 10926
Costa Mesa, CA 92627-0926