NOVEMBER PCAS SPEAKER

Dr. Steven R. James

An Enigma within an Enigma: Cogged Stones of Coastal Southern California

Archaeological context supports cogged stone manufacture by prehistoric hunter-gatherers in coastal southern California during the early and middle Holocene (ca. 9,000 to 4,000 BP). Artifacts similar in appearance are restricted to coastal Chile within approximately the same time period. No evidence presently supports cultural connections between the two areas. Most researchers favor independent invention to best explain the (Continued on p. 3)

Cogged stones from CA-ORA-950, the Foothill Ranch site.

PCAS MEETINGS CALENDAR

ANNUAL AND ELECTION MEETING

Free and Open to the Public

November 12 - 7:30 pm

Speaker: Dr. Steven R. James

Topic: An Enigma within an Enigma: Cogged Stones of Coastal Southern California

Location: IRWD Community Room
15500 Sand Canyon Ave., Irvine

The Irvine Ranch Water District neither supports nor endorses the causes or activities of organizations that use the District’s meeting rooms which are made available for public use.

BOARD MEETING

All Members Welcome

November 19 - 7:00 pm

Location: Old Orange County Courthouse
PCAS Library, Ground Floor
211 W. Santa Ana Blvd., Santa Ana

INSIDE THIS ISSUE

2 October Speaker Notes
3 Prehistoric OC
3 November Curation Workday
4 PCAS Annual Meeting and Election
5 October Board Meeting Summary
5 PCAS Field Trips
6 Flintknapping
6 Dig This—Exhibits, Lectures, and more
7 Speaker Schedule

DINNER WITH THE SPEAKER

Please join this month’s speaker, Dr. Steven James, and PCAS members for dinner before the November 12th meeting, 6 pm, at Mimi’s Café, 4030 Barranca Parkway, Irvine.

Please attend the November 12th PCAS Annual and Election Meeting. We need a quorum!
OCTOBER SPEAKER NOTES

Recent Insights into the Prehistory of the Northern Channel Islands

By Megan Galway

Dr. Michael Glassow presented an overview and update on the archaeology of the Northern Channel Islands. Of the four islands—Santa Cruz, Santa Rosa, San Miguel, and Anacapa—Santa Cruz is the largest with 96 square miles. Seventy-six percent of Santa Cruz is owned by the Nature Conservancy and the rest by the National Parks Service, and the island has a rich archaeological record. During the last glacial period (12,500–11,000 YBP), the four current islands were one large island (Santa Rosae) and only 5 miles from the mainland at its closest point.

The islands have a variable coastline consisting of seacliffs, rocky headlands, and sandy beaches. Areas of intertidal bedrock are prime habitats for shellfish, in particular the California mussel. The interior landscape of Santa Cruz includes chaparral covered slopes, pine and oak woodlands, areas of grassland, and a central valley. Santa Rosa and San Miguel have more grassland. Santa Cruz has stable fresh water springs and some small perennial stream beds.

Much of the cultural history of Santa Cruz is found in deep shell middens, some extending to a depth of more than 5 m. A variety of shellfish are represented, but mussels make up about 75 percent of the shells. There are no burrowing animals on the islands to disturb the stratigraphy, so the deposition record is well defined. Dr. Glassow noted that very large house depressions (30–40 m diameter) have been identified in the coastal middens, while those found inland are smaller (10 m diameter) and more shallow. He believes the shell midden was piled around the actual house to act as a windbreak.

During an 1875 expedition to the island, Paul Schumacker identified eight cemeteries and some large coastal habitation sites. Artifacts from this expedition are with the Smithsonian Museum. In 1927, David B. Rogers identified 19 coastal sites including cemeteries. In 1959 Phil C. Orr of the Santa Barbara Museum of Natural History excavated two human femora on Santa Rosa Island which became known as Arlington Springs Man and dated at 11,000–10,000 YBP. In 1993 DNA and C14 studies by Dr. John Johnson placed the date closer to 13,000 YBP.

Channel Island barbed points appeared between 12,000 and 10,000 years ago and were used until around 8,000 YBP. They are much smaller than the usual spear points of that time and were possibly used on fishing spears. Red abalone enters the record at 7,000–5,300 YBP in the western Santa Cruz sites. This is a cold water shellfish and inhabited the subtidal area of the Santa Barbara channel region. In more recent times the water has warmed, and red abalone has been replaced with black abalone.

During a 1990s project at the Punta Arena site on Santa Cruz, a column sample taken from a gully wall contained red abalone at a depth of 1.5–2 m, dating to 6,300–5,300 YBP. A lower level with sand dune deposits contained red abalone dating to 8,300 YBP. Bone artifacts from the islands include hairpins made from deer metapodials, long pins from dogs and dolphins, and fishing gorges which predate hooks. Olivella shell beads appear during this time, and evidence of dolphin hunting is seen during the 6,300–5,300 YBP period. Dolphin bones were more abundant here than at other sites and included vertebrae and more than a dozen ear bones. A recent inland excavation revealed a midden in a streambed which included red abalone. This site dated to 6,000 YBP.

By 2,500 YBP the shell fish hook appears and was more productive than the bone gorgae but was still probably used from the shoreline. By 1,500 YBP the Chumash plank canoe—made of planks of redwood driftwood—was in use and allowed for offshore fishing with fish hooks and harpoons. Evidence of shell bead manufacturing appears 2,000–1,000 years ago and includes disc-shaped Olivella beads along with chert drills and shale tablets used in their manufacturing.

At contact there were 11 villages on Santa Cruz Island with a population around 1,500. These are documented in mission records and ethnographic data. Glass beads were found at some sites including Nimatlala in the Santa Cruz central valley. This site was unique in that the post holes of an apparent habitation structure were in the center of the depression, rather than around the perimeter. Dr. Glassow suggested this was a sweat lodge and that Nimatlala was a social site connected to the coastal villages.

The question of population fluctuation and how it relates to climate change is being studied. A population drop similar to others identified along the California coast dates to the period of the Medieval Climatic Anomaly (1,150 YBP), which led to severe drought conditions.
Prehistoric OC

PCAS participated in the Cooper Center’s October 10th Prehistoric OC at Ralph Clark Regional Park. We presented artifact identification, Native toys, drilling shells for jewelry, and Native foods and preparation.

Thanks to our volunteers: Bob Brace, Gail Cochlin, Kat Davis, Dorothy DeGennaro, Scott Findlay, Megan Galway, Hank Koerper, Steve O’Neil, and Kathleen Shada.

November Speaker (continued from p. 1)

two occurrences. The majority of coggled stones in coastal southern California have been recovered from two Orange County archaeological sites, the Fairview site (CA-ORA-58) on the bluffs above the Santa Ana River in Costa Mesa and the C cogged Stone site (CA-ORA-83) on Bolsa Chica Mesa overlooking the Pacific at Huntington Beach. The two sites are considered the centers of production for coggled stones, but these artifacts have been found at sites located inland. C cogged stones have garnered considerable interest and speculation over the years as to their enigmatic function and meaning. The Cooper Center curates coggled stones from several Orange County locations including the Foothill Ranch site (CA-ORA-950). Recent research into the function of ORA-950 cogg ed stones and their geological sourcing is presented in this lecture.

Dr. Steven R. James is Professor of Anthropology and Director of the Archaeological Research Facility in the Division of Anthropology at California State University, Fullerton, as well as Cooper Center Fellow of Archaeology at the Cooper Archaeological and Paleontological Center. His degrees are in anthropology (Ph.D., Arizona State University; MA, University of Utah; BA, University of California, Berkeley). He counts 40 years of archaeological experience primarily in California, the Great Basin, and the American Southwest. His research interests are diverse and include zooarchaeology, the origin and domestication of dogs, late Pleistocene vertebrates, human impacts on the environment, Paleoindians and the peopling of the New World, early hominin use of fire, and the history of archaeology. He has authored over 70 journal articles and book chapters and has edited books as well as a number of technical reports in archaeology. His publications include a co-edited book The Archaeology of Global Change: The Impact of Humans on Their Environment, published by the Smithsonian Institution Press, and has produced a book chapter on prehistoric hunting and fishing patterns in the American Southwest that was published in an edited volume as a Smithsonian Contribution to Knowledge.

November Curation Workday

When: November 14, 2015, 1 pm
Where: Red Car Building

We will continue work on the CA-ORA-291 collection. Everyone is welcome. Please contact Mark Roeder (714-299-4150, curator@pcas.org) or Scott Findlay (714-342-2534, fieldtrips@pcas.org) for directions and to let us know you will be coming.
PCAS ANNUAL MEETING AND ELECTION

The 2015 PCAS Annual Meeting and Election will be held on November 12, 2015, 7:30 pm, at the Irvine Ranch Water District Community Room, 15500 Sand Canyon Avenue, Irvine.

A quorum of members is necessary for the election to take place. You must be physically present to vote. Our bylaws prohibit proxy voting. Please plan to attend!

PCAS members will elect three Directors to 3-year terms. The Nomination Committee has recruited three candidates to stand for election. The nominees are Gail Cochlin, Sherri Gust, and Joe Hodulik. Their biographies were printed in the October PCAS Newsletter (available at www.pcas.org).

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. Ballots will be distributed as members arrive. Please be aware that additional names may be placed in nomination. Voting will not take place until after floor nominations are closed.

PCAS Field Trips

November 7, 2015
Rock Art 2015

Join PCAS members at the Annual San Diego Rock Art Symposium now sponsored by the San Diego Rock Art Association. This year’s symposium will be held at the San Diego Community College District Educational Cultural Complex Theatre, 4343 Ocean View Blvd, Room 159, San Diego. The registration fee is $25 and includes a coffee cup. Information and online registration: www.sandiegorockart.org.

November 21-22, 2015
Mule Tank

BLM archaeologist George Kline will lead this field trip to the Mule Tank rock art site near Blythe. Contact fieldtrips@pcas.org for more information.

PCAS Holiday Dinner

Holiday Potluck
December 10, 2015
6:30 PM
IRWD Duck Club

Dr. E.C. Krupp speaking on
Star Trek: The Search for the First Alleged Crab Supernova Rock Art
Lecture at 7:30 pm

Save the date! The Holiday Potluck flyer and map to the Duck Club will be in the December Newsletter and online at www.pcas.org.

OCTOBER BOARD MEETING SUMMARY

President Megan Galway called the meeting to order at 7:00 pm at the Old Courthouse, Santa Ana. PCAS Board Members present: Rene Brace, Steve Dwyer, Scott Findlay, Megan Galway, Jane Gothold, Hank Koerper, Steve O’Neil, Kathleen Shada, and Brian Steffensen. Members present: Bob Brace and Gail Cochlin.

The Board approved the September 2015 minutes and the October Treasurer’s report with expenditures.

Prehistoric OC was very successful even with temperatures over 100 degrees. The Board formed an Election Committee in preparation for the November election. Steve O’Neil and Kathleen Shada will hand out ballots, and Bob Brace, Scott Findlay and Brian Steffensen will count ballots if an election by ballot is needed because of additional nominees.

Steve O’Neil discussed the SCA Climate Change and California Archaeological Study and noted that an Orange County effort has not begun. With Board concurrence, he will contact CRM firms and solicit a coordinator for an OC survey and report. PCAS could supply volunteers.

The San Diego Rock Art Symposium will be November 7, and PCAS will have a Quarterly sales and information table. The Board agreed that the Holiday Dinner will follow last year’s format with “finger food.” No food will be heated.

Joe Hodulik’s Donation-Award table earned $230 at the October meeting for the PCAS Scholarship fund! Joe has reserved the IRWD meeting rooms for next year.

The meeting was adjourned at 8:15 pm.
FLINTKNAPPING

Ellen LaMotte

On October 14, 2015, archaeologist and lithics expert Edgar Huerta demonstrated the ancient techniques applied in making stone tools at Golden West College. This demonstration was hosted by archaeology Professor Leah Walden-Hurtgen and provided a fascinating insight into the making of stone tools.

Hominids began using tools about 2.5 million years ago using simple techniques known as the Oldowan Industry. However, a recent discovery of stone tools near Lake Turkana in Kenya dates to 3.3 million years ago. These newly discovered stone tool artifacts have been dubbed the Lomekwi Industry, and they may be associated with australopiths. The first tools were simple—mostly choppers; however, tool making went hand-in-hand with brain growth. As Homo advanced, so did the techniques for making stone tools. Indeed, brain imaging studies of modern flintknappers show that both cerebellar hemispheres and the neocortex are activated during the stone tool making process.

According to Huerta, the first step in flintknapping is to decide what type of tool is to be made and select a suitable stone type. In general, most fine grain stones displaying conchoidal fracture are ideal for tool making because they flake easily. Volcanic stone, such as obsidian, is good for making spear points and arrowheads because it is somewhat brittle, has a fine grain, has conchoidal fracture, and can be honed to a very sharp edge. Stone such as fine grain basalt may be used to make heavier, denser tools such as an axe or hammer.

It is best to select a stone with a flat top and a 90 degree angle or less sidewall. This will facilitate making the core from which flakes are removed. A rounded rock can be broken apart with a hammerstone to create the desired core shape. Such a shape makes it easier to control the force from a strike. This hard percussion flaking is the act of using a stone to strike the core material to break it apart in a controlled manner.

Using a smaller stone as a striking tool, the flat top is hit close to the edge of the 90 degree sidewall where a striking platform has been prepared. This will break off a flake which can then be made into a stone implement such as a spear point.

Huerta then showed how the flake is reduced further. First the flake is rubbed with a hammerstone to remove sharp edges. Again, a flat area with a 90 degree edge will provide the striking platform. However, now soft percussion is applied using a tool such as a deer antler. During this process, the flake is struck around the edges to refine the shape.

The final step is pressure flaking which will produce a sharp edge. The tip of a deer antler can be used. The edge is abraded with a stone, and a pressure flaking platform is set. The antler tip is pushed against the pressure platform, and the flake is popped off. Modern flintknappers often use a copper rod imbedded in a wood handle as this mimics the qualities of bone or antler.

If the tool is going to be hafted, a notch has to be created in the flake—which is now perhaps a spear point. This notch allows the spear point to be tied to a shaft.

Stones that are too hard to be easily worked, can be heated over an extended period of time; often by burying the stone in a pit layered with dirt or sand under a fire. The heat from the fire drives chemically bonded water out of the stone making it more brittle and thus easier to flake. This type of heat treatment works best with cherts. Modern flintknappers and experimental archaeologists also heat treat stone using electrical kilns.

The basic process of flintknapping is always the same according to Huerta; however, techniques differ. For example, Homo neanderthalensis had a sophisticated method for shaping the core called Levallois. With this method Neanderthals prepared the core so that when it was struck a flake came out the desired shape, eliminating the need to work the flake further. This took careful planning and preparation of the core, which is a testament to the brain power of Neanderthals.

Huerta stated that most stone tools which have been found were made for utilitarian purposes; however, tools were also made for ceremonial purposes and for display.

Stone tools or debitage (the waste material generated when stones are chipped and flaked) found at a site can give archaeologists insight into where and how the stone tools were made, for what purpose, and where the source material originated.

All photos in this article are by Jim LaMotte.
Exhibits


Lectures

*Hollywood Myths vs. Mummy Realities*, with Dr. Emily Cole, Dr. Kara Cooney, Dr. Eric Wells, and Cara Santa Maria, a panel discussion in conjunction with *Mummies: New Secrets from the Tombs.* Natural History Museum of Los Angeles County, November 5, 7–9:30 pm. Fee: $12; members $10 (includes admission to exhibit). Information and ticket purchase: www.nhm.org.


*Excavations of the Prehistoric Burial Tumulus at Lofkend, Albania*, by John Papadopoulos, Ph.D. (UCLA), a lecture of the AIA, Orange County Chapter. DeNault Auditorium in Grimm Hall, Concordia University, November 15, 2–4 pm. Fee: $5; students and members free. Information: www.aiacol.org


*The Coachella Valley Archaeological Society Annual Symposium* will be held at the Pollack Theatre, College of the Desert, 48500 Monterey Ave., Palm Desert, November 17, 10 am. David Whitley will be keynote speaker. Free. Information: www.evarch.org.

*The Use of Native Plants by the Kumeyaay People*, by Suzanne Emery. An activity of the Anza-Borrego Desert Natural History Association will include presentation and field trip. November 21, 10 am–1:30 pm. Free, call the Nature Center 760-767-3098 to reserve. Information: www.abdnha.org.


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 nonprofit 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.

PCAS SPEAKER CALENDAR

December 10, 2015 **Holiday Potluck**  
Dr. E. C. Krupp  
*Star Trek: The Search for the First Alleged Crab Supernova Rock Art*

January 14, 2016  
Nicholas Clapp  
*Old Magic: Lives of the Desert Shamans*

Come to the November 13 meeting to hear Dr. Steven James on *An Enigma within an Enigma: Cogged Stones of Coastal Southern California.*
PACIFIC COAST ARCHAEOLOGICAL SOCIETY
2016 Calendar Year Membership and Subscription Form

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Newsletters will be sent by email unless a mailed copy is requested.

*I have read and agree to abide by the PCAS Code of Ethics* ____________________________

**Membership** (Includes Quarterly/Newsletter) **Subscription Only** **Scholarship Fund**

☐ Active Member - $45 ☐ Quarterly - $40 ☐ Donation $________

☐ Family Membership - $50 ☐ Newsletter - $20

☐ Supporting Member* - $55 ☐ Student Associate - $10 (email Newsletter only)

☐ Donor Member* - $75

☐ Lifetime Member* - $1000

* May be individual or family membership

**www.pcas.org**

*PCAS Board Member

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<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>Scott Findlay</td>
<td><a href="mailto:vicepresident@pcas.org">vicepresident@pcas.org</a></td>
<td>714-342-2534</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>Rene Brace</td>
<td><a href="mailto:treasurer@pcas.org">treasurer@pcas.org</a></td>
<td>714-544-6282</td>
</tr>
<tr>
<td>*Field Trips Co-Chair</td>
<td>Stephen Dwyer</td>
<td><a href="mailto:fieldtrips@pcas.org">fieldtrips@pcas.org</a></td>
<td>714-969-1911</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>*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>*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>*Voting member</td>
<td>Kathleen Shada</td>
<td><a href="mailto:kathleenshada@pcas.org">kathleenshada@pcas.org</a></td>
<td>714-381-8182</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>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>Programs Co-Chair</td>
<td>Joe Hodulik</td>
<td><a href="mailto:programs@pcas.org">programs@pcas.org</a></td>
<td>949-300-1864</td>
</tr>
<tr>
<td>Programs Co-Chair</td>
<td>Brian Steffensen</td>
<td><a href="mailto:programs@pcas.org">programs@pcas.org</a></td>
<td>714-348-9179</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>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>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>

* PCAS Board Member

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PCAS Membership
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Costa Mesa, CA 92627-0926