



THE ARTIFACT

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Brief Notes

Happy New Year to All!

- Hopes are running high that before the year is over, SLOCAS will be able to have a public event once again. Until then, everyone please stay well while we Zoom along.
- Our new President, Doug Jenzen has accepted a position at the Ganna Walka Lotusland – the botanic garden in Montecito. After ten years at the Dunes Center, Doug is relocating to Santa Barbara County but assures us that he will continue to serve SLOCAS.
- We were remiss in the last newsletter in wishing all the best for Joan Sullivan on her 95th birthday. Joan has been and continues to be an artist and a writer with a major interest in local history as well as archaeology. Currently, Joan serves on the Board of Directors for the Friends of the La Loma Adobe.
- As we start the new year, it is time once again to remind everyone that SLOCAS dues are due.

Stay Safe and Healthy

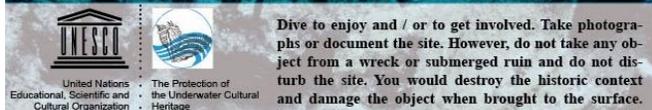
INTERVIEW WITH AN UNDERWATER ARCHAEOLOGIST Part II

By *Katie McKendry-Grove*

SLOCAS board member, Katie McKendry-Grove interviewed underwater archaeologist Tricia Dodds to learn more about underwater archaeology. Ms. Dodds received her B.S. in Maritime Archaeology from the University of Georgia and M.A. in Maritime History and Nautical Archaeology from East Carolina University's Maritime Studies Program.



Looting of Underwater Archaeological Artifacts and Sites



Information on Cultural Heritage Laws/Code of Ethics for Diving relating to Underwater Archaeological Sites. Courtesy of UNESCO.

the invaluable part to us.

How are Underwater Artifacts Cared For?

When artifacts are brought up out of the water, they can begin to deteriorate immediately after exposure to air. When a metal artifact goes down with a ship, that artifact begins to undergo a chemical reaction with its physical environment. The salt content in the water, temperature, and biodegradation from marine organisms all react with an artifact underwater. The artifact eventually reaches an equilibrium or stability with its water environment, but the equilibrium suddenly changes when an artifact is brought up out of the water and exposed to air. That is why a lot of planning and preparation needs to be done before a maritime archaeologist considers collecting an artifact. A plan literally needs to be in place and implemented the moment an artifact reaches the water's surface. From there, the conservation process to stabilize or even reverse the corrosion of an artifact can take months, years, or even decades depending on the size of the artifact and level of corrosion. And it can be

Usually, people follow the laws and appreciate and respect the underwater site as it is without taking anything from it. Unfortunately, I have experienced times when someone disregarded the laws and stole artifacts. This is frustrating because maritime archaeologists can no longer study that artifact to potentially learn more about our past, and no one else can see or appreciate that artifact ever again. Archaeologists can learn a lot from an artifact. A single coin could help archaeologists date a site or tell us about the potential origin of a shipwreck or even trading patterns. For archaeologists, we do not see the monetary value of artifacts. The information obtained from the artifact is

very expensive. For my senior thesis, I spent months conserving Revolutionary War and Civil War round shots, slowly reversing the corrosion process through electrolysis. The primary goal of artifact conservation is preservation and longevity. Conservation is one of the most expensive yet most important aspects of an underwater project, which is why most maritime archaeologists prefer to leave artifacts *in situ* and monitor instead.



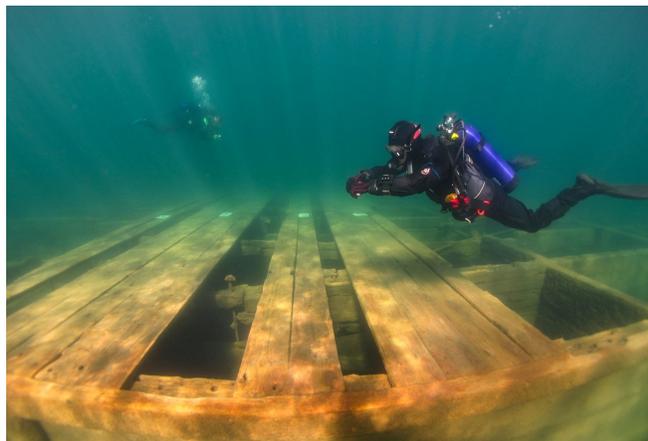
Archaeologists excavate the large ship found in Alexandria, VA in 2015. Courtesy Alexandria Archaeology Museum.

When maritime archaeologists feel that an artifact might prove to be too tempting for looters, we might collect the artifact but only after we have received the proper permits granting permission to legally collect it AND we have a responsible conservation plan in place ready to execute. Maritime archaeologists also could collect an artifact for interpretive purposes or for public outreach such as for a museum exhibit so that others can appreciate an artifact that they would not get to see otherwise.

Another reason why maritime archaeologists prefer to leave artifacts in place is the marine life. Many times, underwater sites, especially shipwrecks, become artificial reefs that attract a variety of marine life. We don't want to disturb someone's home, even if it did start out as a shipwreck! I've worked in the Dominican Republic on a system of marine protected areas, and the biology on the underwater sites is considered and monitored in addition to the cultural elements. Many times, marine biology and underwater archaeology go hand in hand, so preserving sites in place is a great way to protect the marine life.

Maritime Archaeology: The Career of a Lifetime

I hope that this gives everyone a better idea what underwater and maritime archaeology are. Overall, my career as a maritime archaeologist has taken me around the world, giving me an opportunity to meet a lot of wonderful people and work on some amazing projects. I hope that I can continue studying the past through maritime archaeology for years to come. Humans' interaction with the maritime environment is fascinating, and I'm looking forward to learning more about people and their past through a lifetime of adventures in this field.



Divers photograph a wooden barge in Emerald Bay, Lake Tahoe. Courtesy California State Parks/Mylana Haydu, Indiana State University, Center for Underwater Science.

PINWHEEL CAVE PROVIDES EVIDENCE OF INGESTION OF HALLUCINOGENS IN ANCIENT CALIFORNIA

From Live Science

A painting possibly representing the flowers of *Datura* on the ceiling of a Californian rock art site called Pinwheel Cave was discovered alongside fibrous quids in the same ceiling. Just before going into a hallucinogenic trance, Indigenous Californians who had gathered in a cave likely looked up toward the rocky ceiling, where a pinwheel and big-eyed moth were painted in red.

This mysterious "pinwheel," is likely a depiction of the delicate, white flower of *Datura wrightii*, a powerful hallucinogen that the Chumash people took not only for ceremonial purposes but also for medicinal and supernatural ones, according to a new study. The moth is likely a species of hawk moth, known for its "loopy" intoxicated flight after slurping up *Datura*'s nectar, the researchers said.

Chewed globs that humans stuck to the cave's ceiling provided more evidence of these ancient trips; these up to 400-year-old lumps, known as quids, contained the mind-altering drugs scopolamine



A digitally enhanced image of the Indigenous pinwheel drawing that researchers made with a technique called D-Stretch. (Image: © Devlin Gandy)

and atropine, which are found in *Datura*, the researchers said.



*A photo of the pinwheel, which likely represents the opening hallucinogenic *Datura wrightii* flower, seen next to a quid nestled in a crevice in the lower left. The scale bar is 10 centimeters long. (Image credit: David Wayne Robinson)*

The finding marks "the first clear evidence for the ingestion of hallucinogens at a rock art site, in this case, from Pinwheel Cave, California," the researchers wrote in the study, published online (Nov. 23) in the journal [Proceedings of the National Academy of Sciences](#).

The artists probably weren't high when they drew the rock art, however. "It's extremely unlikely because of the debilitating effects of *Datura*," study lead researcher David Robinson, a reader in archaeology at the University of Central Lancashire in England. Rather, just like religious artwork and objects at a church, these rock paintings were likely "setting the scene," and helping people about to go into a trance understand the flower's power and the shared tradition of taking the hallucinogen in that particular cave, he said.

At first glance, the 4-inch by 7-inch (10.5 by 17 centimeters) pinwheel drawing doesn't look much like a *Datura* flower, but any botanist would tell you otherwise. *Datura*, also known as jimsonweed and angel trumpet, unfurls at dusk and dawn when insects pollinate it, but during the heat of the day it twists up. It's possible this cave painting features an "opening *Datura* flower," the researchers wrote in the study.



An unfurling *Datura wrightii* flower. (Image credit: Shutterstock)

Researchers already knew that the Chumash people used *Datura* for ceremonies and in everyday life, according to historic descriptions from missionaries and anthropological work. Historians think *Datura* was used to "gain supernatural power for doctoring, to counteract negative supernatural events, to ward off ghosts, and to see the future or find lost objects, but, most especially, as a medicine for a variety of ailments," the researchers wrote in the study. It was also put in a tea called toloache for a coming-of-age ceremony for boys, and sometimes girls, who took the trance-inducing plant to mark their entrance into adulthood, Robinson said.

However, Robinson and his colleagues needed more evidence than cave art to suggest that Indigenous people used this site for *Datura* ceremonies. So, the team investigated the mysterious quids stuffed into the ceiling's crevices. Quids, known from other archaeological sites in the American Southwest, are plants usually chewed for their nutrients or stimulants, including yucca, agave or tobacco. In this case, 3D digital microscopy revealed that the quids in Pinwheel Cave were also likely chewed. "[The quids] consistently had indentations that we would expect from molars, so it appears that they had inserted it into

their mouth and chewed," Robinson said.

The quid fibers were also matted together, and "you would expect that to occur through some sort of moisture that would make it adhere, such as human saliva," he said. Meanwhile, a chemical analysis revealed the presence of the *Datura's* hallucinogenic compounds atropine and scopolamine, and a scanning electron microscope analysis further identified the quids as *Datura*, although one quid was made of yucca. "Each quid appears therefore to have been a single 'dose,' inserted into the mouth and chewed/sucked in order to extract the hallucinogenic [compounds]," the researchers wrote in the study. After the quids were chewed, they were apparently stuck into the ceiling, like a piece of chewed gum.

Radiocarbon dating shows the cave was used on and off again from about 1600 to the late 1800s. And Indigenous people used the cave for many other purposes: The archaeologists also found projectile points and an arrow shaft straightener — indicating the cave may have served as a place for preparing hunting tools. Likewise, ground seeds and animal remains suggest the cave was used for food preparation, storage and communal meals.

The new discovery helps dismantle the myth of the lone shaman, going into a cave by himself to have a mystical experience, Robinson said. "This is a community site," Robinson said. He added that today's Tejon Indian Tribe, composed of the descendants of the Chumash, Yokuts and Kitanemuk peoples, use the site today.

Citation and link to the full article: PNAS December 8, 2020 117 (49) 31026-31037; first published November 23, 2020; <https://doi.org/10.1073/pnas.2014529117>

CONTRIBUTE TO THE *ARTIFACT*

Do you have stories or news on local archaeology, history or cultural resources? Did you find an interesting feature or artifact during a recent excavation? Have you recently recorded a unique building? Did you have an opportunity to preserve a cultural resource?

The *Artifact* is a great venue to share information of interest to the SLOCAS community. If you have something to share please contact Erin Enright (erin.enright.parsick@gmail.com). We would love to share your stories and local news.

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Please read and sign below indicating that you agree to abide by SLOCAS' Code of Ethics:

I agree to abide by the by-laws of the San Luis Obispo County Archaeological Society (SLOCAS). I understand that my membership will be canceled if I engage in the sale of archaeological materials or any other professionally unethical acts. I fully understand and agree that my participation in any of SLOCAS' activities is at my own risk, expense, and hazard.

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Membership is subject to review by the Board of Directors

Our Mission

SLOCAS provides and operates a Research and Collections facility for the archival storage of archaeological collections. We support research conducted by the archaeological community through access to collections archived at the facility, a publications series, and outreach to the general public.

Membership Fees:

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