



# Southwest Florida Archaeological Society (SWFAS)

## OUR 42nd YEAR

### September 2022 Newsletter

<https://swflarchaeology.org/>

#### **PRESIDENT'S CORNER** *By John F. Furey M.A., RPA*



Hello everyone, this is the first edition of the 2022-2023 SWFAS Newsletter season. Welcome back for another SWFAS year. We are resuming our in-person archaeological presentations in November that were paused for two years by the Covid pandemic and we are planning a December field trip. Additionally, our SWFAS archaeological and historical presentations are arranged for the the Fall of 2022 through the Spring of 2023 and are listed below. We continue to provide monthly articles in archaeology, anthropology and history that will keep you up to date on local, regional and worldwide topics of interest. We are looking forward to another great year.

Researchers in Peru investigating Inca child sacrifice have recently found through chemical analysis that the children were given a hallucinogenic drink as a part of their sacrificial rituals. See new findings below.

Fort Zachary Taylor, located on the southwest tip of Key West, was built between 1845 and 1866 after Florida was ceded to the US in 1821. Key West was the largest city in Florida at that time, was the capital of Florida, and was the center of smuggling. Read about its early history and its role in the Civil War. If you are in Key West be sure to visit this impressive fort. See below.

Another fort, just north of St. Augustine and 500 miles north of Key West, is Fort Mose Historic State Park. This is the location of the first legally sanctioned free Black settlement in the U.S. Settled by slaves escaping from northern English areas into Spanish controlled Florida. The Spanish used the settlement as a buffer between the English and their Native American allies. See below.

Did the airburst explosion of a comet over the Ohio Valley 1500 years ago, that destroyed forests and many Indian villages, lead to the decline of the Hopewell culture? Researchers at the University of Cincinnati believe that they have found evidence of this at 11 archaeological sites. See below.

Chinese paleoanthropologists believe that a skull from the Dragon River Valley in China may represent a new human species. The "Dragon Man" skull is massive and is thought to be at least 14,000 years old. Learn how it was found and what we know about it. See below.

#### **SWFAS 2022-2023 Schedule**

##### **NOVEMBER 16, 2022, NAPLES, COLLIER COUNTY MUSEUM AT GOVERNMENT CENTER**

**Austin Bell**, curator at the Marco Island Historical Society Museum. Austin is the Bronze Award winner of the 2021 Nonfiction Florida Book Awards for *The Nine Lives of the Famous Key Marco Cat*. Austin will have hardcover books available for purchase of \$26.95 (cash please) and will sign them. A presentation, a book purchase, and book signing are a first for SWFAS.

##### **DECEMBER 2022, FIELD TRIP**

Date and destination TBA

##### **JANUARY 18, 2023, FT. MYERS, IMAG MUSEUM**

**Dr. Uzi Baram**, Professor of Anthropology and the Director of the New College Public Archaeology Laboratory, Sarasota, Florida. Dr. Baram will speak regarding his excavations, *The Excavation of Angola: A Maroon Settlement on the Manatee River in Bradenton, FL*.

*(SWFAS 2022-2023 Schedule – continued)*

**FEBRUARY 15, 2023, FT. MYERS, IMAG MUSEUM**

**Dr. Maranda Kles**, RPA, Vice President of Archaeological Consultants in Sarasota, FL, specialized in Southeastern Archaeology, Physical Anthropology, and Bioarchaeology. Dr. Kles will speak on the prehistory of the SW FL natives, the Calusa, and their known relations with their historical native neighbors. The usage of the region by Cuban fishermen that set up fishing camps called ‘rancheros’ after the Calusa abandoned the region, the eventual settlement by whites, the historical military settlement of Ft. Myers, that gave the city its name, and its relationship to the military network of Florida.

**MARCH 15, 2023, FT. MYERS, IMAG MUSEUM**

**Tina Marie Osceola**, Director, Seminole Tribe of Florida (STOF), Tribal Historic Preservation Office (THPO); **Dominique DeBeaubien**, Collections Manager/NAGPRA Coordinator, STOF THPO; **Samantha Wade**, Sr. Bioarchaeologist, STOF THPO

#NoMoreStolenAncestors: The Seminole Tribe of Florida's Repatriation Efforts. Repatriation of Native American artifacts from archaeological sites and current archaeological projects that are being investigated.

**APRIL 19, 2023, NAPLES, COLLIER COUNTY MUSEUM AT GOVERNMENT CENTER**

**Steve Bertone**, Research Biologist with the Rookery Bay National Estuarine Research Reserve (NERR) in Naples, FL. Steve has conducted biological research and worked on several archaeological projects in the Reserve and the 10,000 Islands. He will be speaking about the early settlers in the NERR.

*Note that all presentations are on a Wednesday evening and begin at 7:00 pm.*

**ARTICLES**

***CHILDREN SACRIFICED BY INCAS FOUND WITH COCAINE, AYAHUASCA IN THEIR BODIES***

*By Ed Browne*

*April 7, 2022*

*From Newsweek at <https://www.newsweek.com/children-sacrifice-incas-cocaine-ayahuasca-inca-peru-capacocha-archaeology-1695958>*



Researchers have found evidence that hallucinogenic plants were used on children as part of sacrificial rituals in Peru hundreds of years ago. Ritual ceremonies played an important role in the Inca empire, and one of the most prominent ceremonies was the Capacocha ritual, in which humans and material goods were sacrificed in the belief that this could help avert natural disasters such as earthquakes, volcanic eruptions, or droughts, or to coincide with political events. In 1995, researchers came across sacrificed individuals on the Ampato volcano in southern Peru whilst on an expedition. They discovered the

burials of two children, estimated to have been aged between 6 and 7 years old, as well as objects made of silver and gold. It is thought the children were killed more than 500 years ago.

This month, a team of scientists from Poland, Peru and the U.S. announced in a research paper they had conducted toxicology tests on two of the children, after they were subject to an examination in 2019. The researchers studied the hair of one of them, referred to as Ampato 2, and the fingernails of the other, referred to as Ampato 3. The researchers were able to identify cocaine in both the samples they studied—something that has been investigated before in other studies of Capacocha rituals. The individuals from Ampato were the first to be tested for the presence of other drugs. The tests came back positive for harmine and harmaline, and the only possible source for these two chemicals in the Andean region is *Banisteriopsis caapi*, a South American jungle vine that is used in the preparation of ayahuasca, a hallucinogenic drink. In their research paper, the scientists state that the consumption of ayahuasca could have been linked to a desire to communicate with the spiritual world. In addition, *Banisteriopsis caapi* may have been used alone for antidepressant effects.

"The interesting result was the composition of the ayahuasca decoction," Dagmara Socha, a researcher at the University of Warsaw Center for Andean Studies and co-author of the paper, told Newsweek. "The present-day ayahuasca is a mix of lianas of *Banisteriopsis caapi* and other plants, primarily *Psychotria viridis*, a source of DMT. "Harmine is necessary to orally activate DMT, which is hallucinogenic, and combinations of these two are one of the most potent hallucinogenic drugs. However, in our study, we discovered only harmine in hair. The harmine alone also causes lesser hallucinogenic states and is an antidepressant.

"This could mean that DMT incorporation into human hair is weak and this is why we did not find it. Another explanation is that Incas used only lianas without *Psychotria viridis*, because they were interested in the antidepressant properties of *Banisteriopsis caapi*. Spanish chroniclers mentioned that it was important for children to go happy to gods. So maybe the Incas used it to calm down the victims during the pilgrimage from Cuzco to the summit."

The Inca empire existed in Peru between the 1400s and 1533, eventually growing to become the largest empire ever seen in the Americas according to World History Encyclopedia.

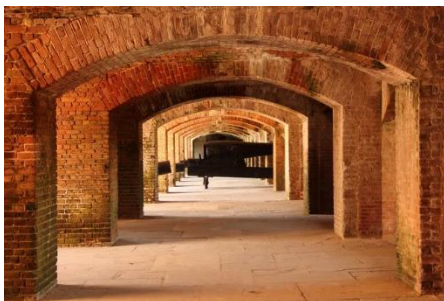
Ayahuasca has been used for centuries in sacred traditions throughout the Americas and is still used by some communities today, according to Healthline. It affects the central nervous system leading to hallucinations and out-of-body experiences. People react to ayahuasca differently and experience both positive and negative effects. Negative effects can include severe anxiety.

### ***FLORIDA HISTORY: FORT ZACHARY TAYLOR, KEY WEST***

*By Cynthia Williams*

*October 31, 2021*

*From Fort Myers News-Press at <https://www.news-press.com/story/life/2021/10/31/florida-history-fort-zachary-taylor-key-west/8528996002/>*



*Wilsilver77, Getty Images/iStockphoto*

One does not necessarily think of Key West as a place of interest to students of military history, and yet, there, on Thompson Island just off the southwest tip of Key West, stands Fort Zachary Taylor. Built between 1845 and 1866 of solid New England granite and ancient, impenetrable limestone, Fort Taylor originally was a three-tier structure with cannons ranged along its 495-foot long, five-foot-wide, seaward walls — 42 cannons, to be exact, on each of its three levels, for a total of 126 cannons, each with a range of three miles.

Key West was attractive to Spain and England as a fort site, but neither followed through on the idea. It would be the Americans, to whom Florida was ceded in 1821, who would recognize Key West's potential for commercial profit and begin to develop the island. Opportunity beckoned enterprising Americans from the mainland and Cuban immigrants from Havana, and it took less than a decade for Key West's lucrative wrecking, fishing, turtle hunting, sponging- and salt-manufacturing enterprises to make it the richest city per capita in the United States.

Meanwhile, in 1822, the site for a fort had been chosen. Fort Zachary Taylor, named after President Taylor, hero of the Mexican-American War, would command the Florida Straits, which, for more than 300 years had been the major shipping lane between the Gulf of Mexico and the Atlantic Ocean. It was one of the most strategically advantageous ports in the world for commercial and military purposes. In 1861 at the start of the Civil War, the East and West Martello towers were added to the fort to serve as armories and batteries, and railway tracks were laid to move the munitions quickly from the towers to the fort. During the war, the Union commanders of Fort Taylor were tasked with defending the United States Navy's east Gulf coast blockade squadron, whose purpose was to blockade Confederate ports along the Gulf coast of Florida. To that end, the

army stopped the smuggling of salt to the Confederacy by shutting down the salt works in Confederate Key West.

The U.S. Navy blockade at Fort Taylor captured more than 300 Confederate blockade runners, whose cargoes were brought into Key west and put up for auction. The end of the Civil War did not end the part that Fort Zachary Taylor played in U.S. history. In 1898, for instance, the U.S.S. Maine sailed from Fort Taylor to Havana, where at 9:40 p.m. on Feb. 15, it mysteriously exploded, killing three-quarters of its men and officers, and propelling the U.S.A., for a decisive 16 weeks, into the middle of Cuba’s war of independence with Spain. During World Wars I and II, Fort Taylor remained on active duty. Radar and five-inch anti-aircraft guns were added to the forts’ defenses during World War II. With the end of that war, however, the curtain fell on Fort Taylor. Behind the curtain, from 1947, for the next quarter-century or more, the site was used as a salvage yard by the Navy.

And then, former marine and civil service engineer/architect, Howard England, began to unearth civil war cannons buried within its walls. It seems that in 1889, when Army engineers removed the top two levels of the three-tier structure in order to build the Osceola and the Adair batteries, they built the two batteries over the casemates, or gun emplacements. Nearly 200 Rodman, Columbiad and Parrott cannons were buried with the battery walls. Many were excavated and are on display today, but others remain buried, some of them embedded and partially visible in the stone walls. We owe England for the preservation of Fort Taylor, for it was his continued work, over a period of 10 years, that “uncovered the largest collection of Civil War armaments in the United States, including cannon, guns, a desalinization plant and thousands of cannonballs and projectiles,” thereby earning Fort Zachary Taylor the protection of the Federal government as a National Historic Landmark in 1973.

The Department of the Interior turned the property over to the state of Florida in 1976 and in 1985, the curtain lifted from Fort Zachary Taylor Historic State Park, the southernmost state park in the continental United States.

Before you go, please visit [floridastateparks.org/parks-and-trails/fort-zachary-taylor-historic-state-park](http://floridastateparks.org/parks-and-trails/fort-zachary-taylor-historic-state-park) for updates on operations and information about events, including weekly Civil war reenactments, at the site. And at [fortzacharytaylor.com/beach](http://fortzacharytaylor.com/beach), you’ll discover that the 54-acre park also boasts “Key West’s best beach” for swimming, snorkeling, fishing, and picnicking, or simply watching the island’s famous sunsets.

### ***SPARSE YET INSPIRATIONAL, FORT MOSE IS SITE OF NATION'S FIRST LEGALLY SANCTIONED FREE BLACK SETTLEMENT***

*Mary Ann Anderson, Tribune News Service*

*February 7, 2022*

*From MSN at <https://www.msn.com/en-us/news/us/sparse-yet-inspirational-fort-mose-is-site-of-nation-s-first-legally-sanctioned-free-black-settlement/ar-AATynzM>*



St. Augustine, Fla. — Behind every state park, there is a story. Sometimes it’s a crazy story, really, like that of Fort Mose, almost hidden away in a tangled forest of scrub palmetto, oak and pine along U.S. Highway 1 just north of St. Augustine. Crazy, in that not many people know it exists but absolutely should. It is here, in the far reaches of Florida’s northeast corner, where one of the most important roads to Black history begins. The ruins of Fort Mose, the first legally sanctioned free Black settlement in what is now the United States, lie here on a small 40-acre patch of land on Florida’s Intracoastal Waterway. I have lived in the Southeast my entire life and know the basic building blocks of history of Georgia and Florida going back to James Oglethorpe and Juan Ponce de Leon. But I had never heard of Fort Mose until I happened upon an advertisement for the Fort Mose Jazz and Blues Series, a music festival that will be held in late February at the now state park and historic site. When I first researched the fort, I came away astounded that so few know of its existence.



Determined to learn more about it, my husband and I set out on a cold, gray winter morning for the three-hour drive from our home to Fort Mose.

### *Geography and history*

To understand Fort Mose, you should get a sense of geography and history of the entire area. Driving southward down U.S. Highway 1 from Jacksonville, we pass gigantic billboards advertising lawyers, lawyers and more lawyers, plus more signs hawking St. Augustine's time-honored, so-called Old Florida attractions of Ripley's Believe It Or Not! museum and St. Augustine Alligator Farm Zoological Park. Where development hasn't smothered the woodlands, the highway is otherwise lined by omnipresent palmettos and massive oaks drizzled with Spanish moss. Much of the undeveloped area probably looks much the same as it did in 1513, when Ponce de Leon ventured to Florida from Puerto Rico, where he was once governor, in search of gold nuggets and the fabled Fountain of Youth, the clear spring that is supposed to give those who drink from it great health and eternal life.

Since Florida's foundation is hard-packed sand, there is no gold, but Ponce de Leon discovered what he believed was the Fountain of Youth near a village of Timucua — local Native Americans — and the St. Augustine of today. His timing was good, with his arrival in April, when the orange blossoms, honeysuckle and wild magnolia were fragrant and sweet. He claimed the land for Spain, naming the entire peninsula La Florida, which translates to flowery, or land of flowers, or flowers galore. Something like that, anyway. This part of Florida can be plagues-of-the-Old Testament hot and humid in summer and covered in a miasma of mosquitoes and gnats that often overstay their welcome way into fall. I couldn't help but wonder if Ponce de Leon would have been quite so intrepid if he had landed in August instead of April.

Then in 1565, Spain's King Felipe II sent Spanish conquistador Pedro Menendez de Aviles to La Florida to drive out the French and then explore and colonize it. He landed close to where Ponce de Leon had first set his boots in the New World more than five decades earlier, planted a cross and, like his predecessor, proclaimed it belonged to Spain. With him came 11 ships and 2,000 settlers. The fleet had first sighted land on the feast day of St. Augustine, the patron saint of Hippo, so the new settlement was named in his honor and now holds the distinction of being the oldest continuously occupied city in the U.S.

### *The genesis of Fort Mose*

Fort Mose, shortened from its full Gracia Real de Santa Teresa de Mose and pronounced MOH-say, was established in 1738 by Florida's Spanish governor, Manuel Montiano. The word Mose, sometimes earlier spelled as Moze, Mosa, Moosa and Mossa, translates to moss. Moss is a bromeliad wonder that loves the Florida heat and humidity. It grows in big bunches, dangling from trees in filigreed drizzles of gray, its long streamers sometimes growing up to 20 feet long. The true genesis of Fort Mose begins years before that, when in the late 1600s and early 1700s Africans began escaping on foot from slavery in the British colonies, fleeing to Spanish-controlled Florida, crossing alligator-infested coastal swamps and rattlesnake-ridden woods and evading patrollers and bounty hunters. But if they were caught on their dangerous sojourn to Florida, they would be subject to torture and death, so a few gators and snakes weren't so scary after all.

According to the Fort Mose Historical Society, during the journey the Africans sought assistance from Native Americans, so in essence the first "underground railroad" to freedom was created. Not all of the maroons, the name given to runaway slaves, survived the journey, but among the first to arrive were eight men, two women and a 3-year-old child. Word buzzed around the South that the sanctuary-like settlement existed, and more came to live on the banks of those tidal creeks and rivers to hunt, fish and garden as they pleased. By 1738 when Montiano gave Fort Mose its name, more than 100 Africans had made their way to their new home and freedom.

There were stipulations for asylum at Fort Mose, said guide Greg White Sr., who is on the board of the Fort Mose Historical Society and who showed us around on that cold Saturday. "For their freedom, they had to agree to two things," White said. "They had to convert to Catholicism and, for the men, they had to serve in the

military.” Pledging allegiance to the Spanish and converting to a new religion no doubt was the better option to living out life as a slave.

Although Fort Mose was a free settlement, the Spanish, who then controlled Florida, used it as a buffer against British invasion. When Oglethorpe, the British founder of the Georgia colony, marched down in 1740 from Georgia with his fellow colonists and Yemasee allies to claim the land as their own, he invaded and captured Fort Mose. The community had already evacuated to St. Augustine before the British arrived, but just over two weeks later, the Fort Mose militia, under the leadership of West African-born former slave Capt. Francisco Menendez, attacked the British and took back their land in what is now known as the Battle of Bloody Mose. Oglethorpe retreated back to Georgia, but everything that wasn’t destroyed in battle was burned. Most of the fort’s citizens remained in St. Augustine until a dozen years later when they returned and rebuilt the billet at a new site. The second Fort Mose lasted until 1763 when Spain ceded Florida to Britain. Facing slavery once again, Menendez and the remaining residents abandoned the fort and fled to Cuba. Over the years, Mother Nature took over and Fort Mose was overtaken by the elements and salt marsh.

Fort Mose’s significance, its legacy really, as the first free Black community was nearly forgotten until the mid-1980s when a team of archaeologists, historians, government leaders and others, under the direction of Dr. Kathleen Deagan of the University of Florida and Florida Museum of Natural History, and Jane Landers, then a doctoral student at the University of Florida, began excavating the site. It was designated a National Historic Landmark in 1994. Despite that designation, it remains largely unknown.

#### *Fort Mose today*

The only building at Fort Mose now is the Visitor Center that includes a small yet tasteful museum. Boardwalks are built out over the marsh and overlook the shallow water where the forts once existed. As we wandered around the Visitor Center, we met Ryan Hall of the St. Johns County Cultural Events Division. When I told him I had never heard of Fort Mose, clearly the birthplace of freedom for so many, until just a few days prior, he responded, “Unfortunately, that’s a very common response we get when we talk about Fort Mose.” Fort Mose, he also pointed out, will be the site of the first-ever Fort Mose Jazz and Blues Series from Feb. 18-26, a big-name music festival that is part of a grand effort to raise money to help the Fort Mose Historical Society for the development of additional interpretive resources and construction of an onsite fort representation. “The event is to bring awareness to the site, which is so culturally significant,” said Hall. “But it’s also to raise funds in order to make Fort Mose more of a tourism attraction.” The performances will be at Fort Mose in the shade of moss-covered oaks and just steps from the walkways that lead to the water’s edge. Among the confirmed artists are the 18-time Grammy Award-winning Count Basie Orchestra, Americana and roots singer-songwriter Amythyst Kiah, two-time Grammy Award-winning jazz artist Gregory Porter, New Orleans deep-groove R&B and jazz group Tank and the Bangas, and Trombone Shorty and Orleans Avenue.

Standing on the spot of the critically important fort and taking a long look across the marsh to the Vilano Bridge where it crosses the Intracoastal Waterway, a couple of cormorants watch as an enormous osprey soars so freely across the water. I think the bird is the perfect metaphor for all of those Africans of so long ago who were courageous enough to pursue their own freedom.

#### *If you go*

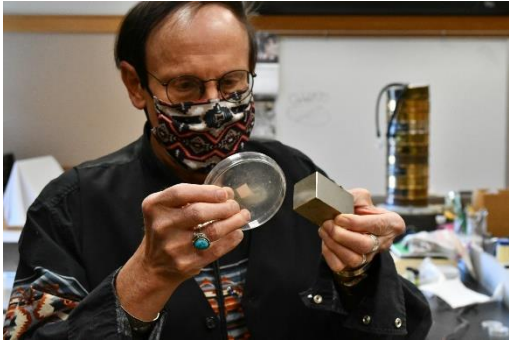
Fort Mose Historic State Park is located at 15 Fort Mose Trail, just north of St. Augustine, Florida. The Visitor Center is open 9 a.m. to 5 p.m., Thursday through Monday. The grounds are open daily from 9 a.m. until 5 p.m., 365 days a year. Admission to park grounds is free. A fee of \$2 per adult is required to enter the Visitor Center. Children under 6 are admitted free. For more information on Fort Mose Historical Society, call 904-823-2232 or visit <https://fortmose.org/>. For additional details on Fort Mose Jazz and Blues Series, including where to buy tickets, visit <https://discoverfortmose.com/>.

## **COMET'S FIERY DESTRUCTION LED TO DOWNFALL OF ANCIENT HOPEWELL**

By Michael Miller

February 1, 2022

From University of Cincinnati News at <https://www.uc.edu/news/articles/2022/02/did-comets-fiery-destruction-lead-to-downfall-of-ancient-hopewell.html>



The rapid decline of the Hopewell culture about 1,500 years ago might be explained by falling debris from a near-Earth comet that created a devastating explosion over North America, laying waste to forests and Native American villages alike. Researchers with the University of Cincinnati found evidence of a cosmic airburst at 11 Hopewell archaeological sites in three states stretching across the Ohio River Valley. This was home to the Ohio Hopewell, part of a notable Native American culture found across what is now the eastern United States.

The comet's glancing pass rained debris down into the Earth's atmosphere, creating a fiery explosion. UC archaeologists used radiocarbon and typological dating to determine the age of the event. The airburst affected an area bigger than New Jersey, setting fires across 9,200 square miles between the years A.D. 252 and 383. This coincides with a period when 69 near-Earth comets were observed and documented by Chinese astronomers and witnessed by Native Americans as told through their oral histories. The study was published in the *Nature* journal *Scientific Reports*. UC archaeologists found an unusually high concentration and diversity of meteorites at Hopewell sites compared to other time periods. The meteorite fragments were identified from the telltale concentrations of iridium and platinum they contained. They also found a charcoal layer that suggests the area was exposed to fire and extreme heat.

In his lab, lead author Kenneth Tankersley, a professor of anthropology in UC's College of Arts and Sciences, held up a container of tiny micrometeorites collected at the sites. A variety of meteorites, including stony meteorites called pallasites, were found at Hopewell sites. "These micrometeorites have a chemical fingerprint. Cosmic events like asteroids and comet airbursts leave behind high quantities of a rare element known as platinum," Tankersley said. "The problem is platinum also occurs in volcanic eruptions. So we also look for another rare element found in nonterrestrial events such as meteorite impact craters — iridium. And we found a spike in both, iridium and platinum."

The Hopewell people collected the meteorites and forged malleable metal from them into flat sheets used in jewelry and musical instruments called pan flutes. Beyond the physical evidence are cultural clues left behind in the masterworks and oral histories of the Hopewell. A comet-shaped mound was constructed near the epicenter of the airburst at a Hopewell site called the Milford Earthworks.

Various Algonquin and Iroquoian tribes, descendants of the Hopewell, spoke of a calamity that befell the Earth, said Tankersley, who is Native American. "What's fascinating is that many different tribes have similar stories of the event," he said. "The Miami tell of a horned serpent that flew across the sky and dropped rocks onto the land before plummeting into the river. When you see a comet going through the air, it would look like a large snake," he said. "The Shawnee refer to a 'sky panther' that had the power to tear down forest. The Ottawa talk of a day when the sun fell from the sky. And when a comet hits the thermosphere, it would have exploded like a nuclear bomb." And the Wyandot recount a dark cloud that rolled across the sky and was destroyed by a fiery dart, Tankersley said. "That's a lot like the description the Russians gave for Tunguska," he said of a comet airburst documented over Siberia in 1908 that leveled 830 square miles of forest and shattered windows hundreds of miles away. "Witnesses reported seeing a fireball, a bluish light nearly as bright as the sun, moving across the sky. A flash and sound similar to artillery fire was said to follow it. A powerful shockwave broke windows hundreds of miles away and knocked people off their feet," according to a story in *EarthSky*.

UC biology professor and co-author David Lentz said people who survived the airburst and its fires would have gazed upon a devastated landscape. “It looks like this event was very injurious to agriculture. People didn’t have good ways to store corn for a long period of time. Losing a crop or two would have caused widespread suffering,” Lentz said. And if the airburst leveled forests like the one in Russia, native people would have lost nut trees such as walnut and hickory that provided a good winter source of food. “When your corn crop fails, you can usually rely on a tree crop. But if they’re all destroyed, it would have been incredibly disruptive,” Lentz said.

UC’s Advanced Materials Characterization Center conducted scanning electron microscopy and energy dispersive spectrometry of the sediment samples. Inductively coupled plasma mass spectrometry was employed at the University of Georgia’s Center for Applied Isotope Studies. The U.S. Geological Survey provided stable carbon isotope analysis.

Despite what scientists know, there is still much they do not, Lentz said. “It’s hard to know exactly what happened. We only have a few points of light in the darkness,” he said. “But we have this area of high heat that would have been catastrophic for people in that area and beyond.” Now researchers are studying pollen trapped in layers of sediment to see how the comet airburst might have changed the botanical landscape of the Ohio River Valley. Co-author Steven Meyers, a UC geology alumnus, said their discovery might lead to more interest in how cosmic events affected prehistoric people around the world. “Science is just a progress report,” Meyers said. “It’s not the end. We’re always somewhere in the middle. As time goes on, more things will be found.”

## ***DISCOVERY OF ‘DRAGON MAN’ SKULL IN CHINA MAY ADD SPECIES TO HUMAN FAMILY TREE***

*By Carl Zimmer*

*June 25, 2021*

*From The New York Times at <https://www.nytimes.com/2021/06/25/science/dragon-man-skull-china.html>*



Scientists on Friday announced that a massive fossilized skull that is at least 140,000 years old is a new species of ancient human, a finding that could potentially change prevailing views of how — and even where — our species, *Homo sapiens*, evolved. The skull belonged to a mature male who had a huge brain, massive brow ridges, deep set eyes and a

bulbous nose. It had remained hidden in an abandoned well for 85 years, after a laborer came across it at a construction site in China. The researchers named the new species *Homo longi* and gave it the nickname “Dragon Man,” for the Dragon River region of northeast China where the skull was discovered. The team said that *Homo longi*, and not the Neanderthals, was the extinct human species mostly closely related to our own. If confirmed, that would change how scientists envision the origin of *Homo sapiens*, which has been built up over the years from fossil discoveries and the analysis of ancient DNA. But a number of experts disputed this conclusion, published in three papers that provided the first detailed look at the fossil. Nevertheless, many still thought that the find could help scientists reconstruct the human family tree and how modern humans emerged. All the experts who reviewed the data in the studies said it was a magnificent fossil. “It’s a beautiful thing,” said John Hawks, a paleoanthropologist at the University of Wisconsin-Madison. “It’s very rare to find a fossil like this, with a face in good condition. You dream of finding this stuff.”

In 1933, a laborer working at a bridge construction site in the city of Harbin discovered the peculiar skull. It’s likely that the man — whose name has been withheld by his family — recognized that he had found a scientifically important specimen. Just four years earlier, researchers had found another humanlike skull, nicknamed Peking Man, near Beijing. It appeared to link the people of Asia to their evolutionary forerunners. Rather than hand over the new skull to the Japanese authorities who occupied northeast China at the time, the laborer chose to hide it. He did not mention the skull to anyone for decades. In an account of the fossil’s discovery, the authors of the new papers speculated that he was ashamed of having worked for the Japanese. Shortly before his death in 2018, the laborer told his family about the fossil. They went to the well and found it.



The family donated it to the Geoscience Museum of Hebei GEO University, where scientists immediately could see that it had been exquisitely well preserved.

In the papers published Friday, the researchers argued that *Homo longi* appears to have been an adult of great size. His cheeks were flat and his mouth broad. The lower jaw is missing, but the researchers infer from the Dragon Man's upper jaw and other fossil human skulls that he likely lacked a chin. They say that his brain was about 7 percent larger than the average brain of a living human. The researchers argue that Dragon Man's combination of anatomical features are found in no previously named species of hominin, the lineage of bipedal apes that diverged from other African apes. They later evolved into larger-brained species that set the stage for *Homo sapiens* to expand across the entire globe. "It's distinctive enough to be a different species," said Christopher Stringer, a paleoanthropologist at the Natural History Museum in London and co-author of two of the three Dragon Man papers. The scientists analyzed the chemical composition of the fossil, and determined it was at least 146,000 years old, but no older than 309,000 years.

Today, the planet is home to just one species of hominin — *Homo sapiens*. But Dragon Man existed at a time when a number of drastically different kinds of hominins coexisted, including *Homo erectus* — a tall human with a brain two-thirds the size of our own — as well as tiny hominins including *Homo naledi* in South Africa, *Homo floresiensis* in Indonesia and *Homo luzonensis* in the Philippines. The oldest *Homo sapiens* fossils also date to this time. Neanderthals — which shared our large brain and sophisticated toolmaking — ranged from Europe to Central Asia during the period when Dragon Man may have lived.

In recent years, studies of fossil DNA have also revealed yet another humanlike lineage in this period, the Denisovans. The DNA came largely from isolated teeth, chipped bones and even dirt. Those remains are not enough to show us what Denisovans looked like. The most promising fossil yet found that could be evidence of Denisovans came from a cave in Tibet: a massive jaw with two stout molars, dating back at least 160,000 years. In 2019, scientists isolated proteins from the jaw, and their molecular makeup suggests they belonged to a Denisovan, rather than a modern human or Neanderthal. This molecular evidence — combined with fossil evidence — suggests that the common ancestors of *Homo sapiens*, Neanderthals and Denisovans lived 600,000 years ago. Our lineage split off on its own, and then 400,000 years ago, Neanderthals and Denisovans diverged. In other words, Neanderthals and Denisovans were our closest extinct relatives. They even interbred with the ancestors of modern humans, and we carry bits of their DNA today.

But many puzzles still endure from this stage of human history — especially in East Asia. Over the past few decades, paleoanthropologists have found a number of fossils, many incomplete or damaged, that have some features that make them look like our own species and other features that suggest they belong elsewhere on the hominin family tree. Katerina Harvati, a paleoanthropologist at the University of Tübingen in Germany who was not involved in the new study, said that the Dragon Man skull could "help clarify some of the confusion."

To figure out how *Homo longi* fits into the human family tree, the scientists compared its anatomy with 54 hominin fossils. The researchers found that it belongs to a lineage that includes the jaw in Tibet that has been identified as a Denisovan. The skull was even more similar to a portion of a skull discovered in 1978 in the Chinese county of Dali, dating back 200,000 years. Some researchers thought the Dali fossil was of our own species, while others thought it belonged to an older lineage. Still others even called the fossil a new species, *Homo daliensis*.

The authors of the new studies argue that Dragon Man, the Tibetan jaw and the Dali skull all belong to a single lineage — one that is the closest branch to our own species. While *Homo longi* had distinctive features, it also shared traits with us, such as a flat face tucked under its brow rather than jutting out, as was the case with Neanderthals. "It is widely believed that the Neanderthal belongs to an extinct lineage that is the closest relative of our own species. However, our discovery suggests that the new lineage we identified that includes *Homo longi* is the actual sister group of *H. sapiens*," Xijun Ni, a co-author of the studies and a paleoanthropologist at the Chinese Academy of Sciences and Hebei GEO University said in a news release.

Those conclusions are spurring debate among paleoanthropologists — including the authors of the new papers. Some of the debate concerns what to call Dragon Man. Scientists follow strict rules about naming new species. That would require Dragon Man to share a name with the Dali skull, if they are as similar as the authors claim. “In my view, it is a distinct species which I would prefer to call *Homo daliensis*,” Dr. Stringer said. Other experts thought the similarity between the Tibetan jaw, with the Denisovan-like proteins, and the skull from Harbin pointed to Dragon Man’s real identity. “When I first saw the picture of the fossil I thought, now we finally know what Denisovans looked like,” said Philipp Gunz, a paleoanthropologist at Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany. Karen Baab, a paleoanthropologist at Midwestern University in Arizona, agreed: “Harbin is better understood as a Denisovan.”

An assortment of clues point that way. The tooth on Dragon Man’s upper jaw has the same massive shape as the one on the Denisovan jaw found in Tibet, for example. Both lack a third molar. Dragon Man also lived in Asia at the same time that Denisovan DNA tells us that they were in the same place. Even if Dragon Man is a Denisovan, there would be more puzzles to solve. The DNA of Denisovans clearly shows that their closest cousins were Neanderthals. The new study, based instead on fossil anatomy, indicates instead that *Homo longi* and *Homo sapiens* are more closely related to each other than to Neanderthals. “I think that the genetic data in this case is more reliable than the morphological data,” said Bence Viola, a paleoanthropologist at the University of Toronto, who was not involved in the new study. “Obviously, something doesn’t match,” Dr. Stringer acknowledged. “The important thing is the recognition of a third human lineage in East Asia, with its own distinctive combination of features.” One way to solve the mystery of Dragon Man would be to get DNA from his remarkable skull. Dr. Stringer said he is ready for more surprises. “It’s going to be a more complicated plot.”

## **OFFICERS AND BOARD OF DIRECTORS FOR THE 2022 CALENDAR YEAR**

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## **SWFAS AND FAS MEMBERSHIP APPLICATIONS**

We encourage those interested in Florida archaeology to become members of The Florida Anthropological Society (FAS) and The Southwest Florida Archaeological Society (SWFAS). Annual dues are due in January and membership applications to both organizations are attached. Membership in the FAS provides you with four annual volumes of *The Florida Anthropologist* and occasional newsletters on anthropological events in Florida in addition to the annual statewide meeting. More information on FAS can be found online at: [www.fasweb.org](http://www.fasweb.org). Membership in SWFAS offers you a local series of talks on archaeological and anthropological subjects that you can attend. The SWFAS monthly newsletter keeps you up to date on local events as well as other important archaeological topics. We urge you to support both with your membership. All of the SWFAS Lecture Series are open to the public at no charge.



# JOIN US!

## The Southwest Florida Archaeological Society

<http://swflarchaeology.org/>

The Southwest Florida Archaeological Society (SWFAS) was founded in 1980 as a not-for profit corporation to provide a meeting place for people interested in the area's past.

Our goals are to:

- Learn more of the area's history
- Create a place for sharing of this information
- Advocate for preservation of cultural resources

Its members include professional and amateur archaeologists and interested members of the general public. Members come from all walks of life and age groups. They share a lively curiosity, a respect for the people who preceded them here, and a feeling of responsibility for the conservation of the places and objects they left behind.

The Society holds monthly meetings between October and April, attracting speakers who are in the forefront of archaeological and historical research. Occasionally members join in trips to historical and archaeological sites.

A monthly newsletter, Facebook page, and website keep members abreast of our events and happenings.

The organization is a chapter of the Florida Anthropological Society, a statewide organization that publishes quarterly newsletters and a journal, *The Florida Anthropologist*, and holds an annual conference.

**I want to help The Southwest Florida Archaeology Society preserve and interpret Florida's heritage!**

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Charlie Strader  
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Membership in the Society is open to all interested individuals who are willing to abide by the Florida Anthropological Society Statement of Ethical Responsibilities, which can be found on our website [fasweb.org](http://fasweb.org). *Membership is for one year.* SELECT LEVEL BELOW.

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