CENTRAL
OKLAHOMA
GROTTO
OF THE NATIONAL
SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

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ANNOUNCEMENTS

*No trips planned at the present time.

***Next meeting may be January 10, 2025 at 8:00 pm central time on Google Meet. Becky will send out invitations.**

The National White-nose Syndrome Decontamination Protocol (March 2024) outlines procedures to effectively clean and disinfect clothing, footwear, and equipment that may have been exposed to *Pd*, and can help reduce the risk of human-assisted spread of the fungus. The recommendations are based on the best available evidence to date.

Key changes to the current update compared to October 2020 include the following:
- **Ethanol, Formula 409 and Hibiclens are removed from the approved disinfection product table.**
- **Isopropanol concentration is narrowed to 50-70%. In the previous protocol, >50% isopropanol was approved.**
- **The WNS management areas map is updated to reflect the current status of Pd and WNS occurrence in the US. Hawai'i, Alaska, and Puerto Rico are added to the map of management areas.**
- **Guidelines for movement of gear and when to decontaminate gear are stated in a bulleted list rather than a diagram.**
- **Additional information is provided regarding decontamination of mist-nets, harp traps and acoustic equipment.**

from https://www.whitenosesyndrome.org/mmedia-education/national-wns-decontamination-protocol-u-s

Bat White-Nose Syndrome (WNS)/Pd Surveillance Submission Guidelines
Winter 2023/2024 (November – May)

The following sample submission guidelines are for use when evaluating unusual bat morbidity or mortality during Winter 2023/2024 identified through either passive surveillance efforts (i.e.: public reporting, rabies lab submissions) or active surveillance efforts (i.e.: hibernacula surveys, spring trapping). They are meant to assist with prioritizing appropriate field samples for laboratory submission based on presence/absence of WNS clinical signs, geographic location, and prior knowledge of WNS/Pd status at a site. This document replaces all previous winter submission guidelines from the USGS-National Wildlife Health Center (NWHC).

BAT CONSERVATION TRUST
www.bats.org.uk/about-bats/threats-to-bats/white-nose-syndrome/overviewWhite-nose syndrome

(WNS) is the name used to describe a group of symptoms associated with the deaths of millions of bats in the USA (40 states) and Canada (eight provinces), according to figures from the US Fish and Wildlife Service. In some hibernation sites numbers have declined by 80-100% since 2006, when the condition was first identified.

The video Battle For Bats: Surviving White Nose Syndrome shows what is being done in the United States to mitigate the effects of WNS on bat populations.

MINUTES

CENTRAL OKLAHOMA GROTTO MEETING
DECEMBER 13, 2024

In attendance: Sue Bozeman, Becky Hunsinger—virtual meeting facilitator, John Talbot, Lil Town, Dale and Carole Town, John, Tammy, and Andrew Van Dyke, Jon and Kelley Woltz, Noan Zinn, Steve Beleu

Start time: 8:14
PRESIDING: Jon Woltz

OLD BUSINESS

Lead Officer John Van Dyke discussed this year's bat count, scheduled for January 25, alternate date February 1. He noted that Ron Harris, landowner of Jester Cave, has stated that he can't get anyone to count his bats. But he didn't ask COG, so John will contact him and COG will step up to the plate as we have done many a time before.

NEW BUSINESS

1. Noah demonstrated the DNA sequencing for bats project he developed for his class and very impressive it was.
2. Noah noted that he plans to test the vertical gear that Becky gave him soon in the Wichita Mountains as preparation for using it in vertical caves.

TREASURER'S REPORT

John Talbot presented his report to us, including a $24 donation from a wealthy member!

Meeting ended 9:08

Report by S. Beleu, Secretary and Sergeant at Underarms

TREASURER'S REPORT

December 2024 TREASURERS'S REPORT

	INCOME	**EXPENSES**
Dividends	$ 0.19	
TOTAL	**$ 0.19**	
CASH	$ 6.05	
CHECKING	$ 300.49	
SAVINGS	$ 1,234.79	
TOTAL	**$ 1,541.33**	

PREPARED BY TREASURER JOHN TALBOT NSS #30254

1/5/2025

CENTRAL OLLAHOMA GROTTO
2024
TREASURERS'S REPORT

1/1/2/24	**BANK BALANCE**	**$**	**1,546.48**		
	CASH ON HAND	**$**	**106.05**		
	TOTAL	**$**	**1,652.53**		
INCOME			**EXPENSES**		
DONATIONS	$	36.00	PRINTING	$	94.00
Dividends	$	0.83	POSTAGE	$	54.00
TOTAL	**$**	**36.83**		**$**	**148.03**
12/31/2024	**BANK BALANCE**			**$**	**1,535.28**
	CASH ON HAND			**$**	**6.05**
TOTAL				**$**	**1,541.33**

PREPARED BY TREASURER JOHN TALBOT NSS #30254

1/8/2025

TRIP REPORTS

NO TRIP REPORTS THIS MONTH

POTPOURI

Cappadocia, ancient district, Turkey
Last Updated: Dec 5, 2024
https://www.britannica.com/place/Cappadocia

Cappadocia, ancient district in east-central Anatolia, situated on the rugged plateau north of the Taurus Mountains, in the centre of present-day Turkey. The boundaries of the region have varied throughout history. Cappadocia's landscape includes dramatic expanses of soft volcanic rock, shaped by erosion into towers, cones, valleys, and caves. Rock-cut churches and underground tunnel complexes from the Byzantine and Islamic eras are scattered throughout the countryside.

Neolithic pottery and tools found in Cappadocia attest to an early human presence in the region. Excavations at the modern town of Kültepe have uncovered the remains of the Hittite-Assyrian city of Kanesh, dating from the 3rd millennium bce. The tens of thousands of clay tablets recovered from the remains of an Assyrian merchant colony at Kanesh are among the oldest written ocuments discovered in Turkey.

The earliest appearance of the name of Cappadocia dates from the 6th century bce, when Cappadocia's feudal nobility was dominated by a Persian satrapy and Zoroastrian temple cults were widespread. Because of its rugged terrain and modest agricultural output, the area remained underdeveloped in antiquity, with only a few significant cities.

Alexander the Great bypassed Cappadocia but sent troops under his general Perdiccas (322 bce). After a power struggle following Alexander's death, Cappadocia fell into the dynastic orbit of the Seleucids, although a local aristocracy descended from the Persian satraps continued to rule and Persian religious practices persisted. Cappadocia transferred its allegiance to Rome after the Roman victory at Magnesia (190 bce) and remained faithful despite the Pontic and Armenian attacks of the 1st century bce. Cappadocia was retained as a Roman client state until Emperor Tiberius annexed it in the 17 century for its command over strategic passes in the Taurus Mountains.

The region had early contact with Christianity. The Acts of the Apostles reports that Cappadocian Jews were present in Jerusalem during (Continued on page 4)

the descent of the Holy Spirit on Pentecost (Acts 2:9), and the First Epistle of Peter mentions Cappadocia among the persecuted Christian communities of Asia Minor (1 Peter 1:1). In the 4th century three Cappadocian theologians—Basil the Great, Gregory of Nyssa, and Gregory of Nazianzus—made important contributions to Christian thought in their writings, refuting Arianism and elaborating on the doctrine of the Trinity.

Cappadocia's position on the eastern side of the Byzantine Empire left it open to attack. Raids by tribal groups in the 5th century spurred the construction of heavier fortifications in the area. In 611 an incursion by the Sasanian army ravaged the Cappadocian capital, Caesarea (modern Kayseri). Arab raids into Cappadocia commenced in the 7th century and continued into the 10th. During these periods of instability Cappadocia's large complexes of man-made caves and tunnels may have been built or expanded from existing structures for

During these periods of instability Cappadocia's large complexes of manmade caves and tunnels may have been built or expanded from existing structures for use as refuges.

use as refuges. However, establishing precise dates for their construction has proven difficult.

Cappadocia enjoyed a period of prosperity in the 10th and 11th centuries that led to a surge in the construction of rock-cut churches and monasteries. Many of the surviving churches from this period are richly decorated. The Byzantine Empire lost Cappadocia permanently when it came under the control of the Seljuq Turks about the time that they defeated the Byzantine army at the Battle of Manzikert in 1071.

The name Cappadocia is now commonly used in the tourism industry to refer to the area that extends roughly from Kayseri west to Aksaray (95 miles [150 km]), where the largest number of monuments are situated. The most-visited attractions include the sprawling underground cites of Derinkuyu and Kaymaklı and Göreme National Park, where there are a large number of rock-cut churches and dwellings. In 1985 Göreme National Park and other rock sites in the area were designated a UNESCO World Heritage site.

Marble Caves: Chile's ethereal turquoise caverns with 'mineral ice cream' on the walls

https://www.livescience.com/planet-earth/geology/marble-caves-chiles-ethereal-turquoise-caverns-with-mineral-ice-cream-on-the-walls

By Sascha Pare published December 13, 2024

The Marble Caves sit on the shores of a turquoise glacial lake in southern Chile. Light bounces off the water onto the walls, creating a magical, ever-changing display inside the caverns.

Why it's incredible: The marble walls reflect the turquoise color of the water in the cave, tinting them blue.

The Marble Caves are natural rock formations with curved walls covered in swirling mineral patterns. They sit on the shores of General Carrera Lake, a glacial lake in southern Chile. The lake floods the caverns with turquoise waters, which fill the caves with blue light and give them an ethereal appearance.

The Marble Caves are so smooth, they look like they've been hollowed out with an ice cream scoop. But the caves formed due to the slow action of lake water, which dissolved minerals in the rocks until the walls crumbled. Researchers think this occurred over the past 10,000 to 15,000 years, after glaciers retreated from the region and exposed its stone to weathering.

"After the glaciers retreated, the lake was created, and that was when the process of sculpting the [caves] began," Francisco Hervé Allamand, a professor of geology at Andrés Bello National University in Chile and an honorary fellow of the Geological Society of America, told the BBC in 2019.

The stone in the caves was originally limestone, a sedimentary rock made of calcium carbonate. But it transformed into marble, which is a metamorphic rock, under high heat and pressure before the caverns opened, Hervé Allamand said. Limestones are some of the most soluble rocks in the world, he said, meaning they are extremely susceptible to erosion from water.

The original limestone formed closer to the equator than Chile sits today and drifted southward millions of years ago as tectonic plates shifted around Earth, Hervé Allamand said. This grinding journey jumbled up Earth's crust and buried rocks so deep that they be

(Continued on page 5)

came exposed to blistering temperatures of 570 to 750 degrees Fahrenheit (300 to 400 degrees Celsius). Together with the pressure from plate movement, this heat recrystallized the limestone into whitish-gray marble and created ripples of brown and yellow rock where impurities were trapped in the limestone.

Interior of the flooded Marble Caves in southern Chile. The walls of the caves have swirling mineral patterns on them and the water is turquoise.

"When a rock undergoes metamorphosis, new minerals are formed," Hervé Allamand said, referring to brown and yellow veins within the marble.

Reflections off the water in the Marble Caves give rise to stunning images that shift depending on the light and water levels. The water owes its brilliant azure color to glacial silt, which is also known as "rock flour." This fine stone powder absorbs the shortest wavelengths of light — the purples and indigos — and reflects mainly light-blue and green light back to the surface, giving the water a turquoise tint. (Water absorbs longer wavelengths of light that give rise to red, orange and yellow.)

The turquoise water may look like a tropical sea, but its glacial origin means it's freezing.

The Marble Caves are accessible only by water, and they are best explored with kayaks, which enable visitors to wind in and out of the curved walls, according to the travel website Swoop Patagonia.

Tiny cave snail with muffin-top waistline rolls out of the dark in Laos

November 16, 2020
Pensoft Publishershttps://www.sciencedaily.com/releases/2020/11/201116112922.htm

A new species of tiny cave snail that glistens in the light and has a muffin-top-like bulge, was discovered by Marina Ferrand of the French Club Etude et Exploration des Gouffres et Carrie?res (EEGC), during the Phouhin Namno caving expedition in Tham Houey Yè cave in Laos in March 2019. The new species, Laoennea renouardi, is 1.80 mm tall and is named after the French caver, Louis Renouard, who explored and mapped the only two caves in Laos known to harbor this group of tiny snails. Only two species of Laoennea snail are known so far, L. carychioides and now, L. renouardi.

Caver and scientist, Dr. Adrienne Jochum, affiliated with the Natural History Museum BernUniversity of Bern (Switzerland), as well as the Senckenberg Research Institute and Natural History Museum (Frankfurt, Germany) described the new species and its cave habitat together with co-authors: Estée Bochud, Natural History Museum Bern; Quentin Wackenheim, Laboratoire de Géographie Physique (Meudon, France) and Laboratoire Trajectoires (Nanterre, France); Marina Ferrand, EEGC; and Dr. Adrien Favre, Senckenberg Research Institute and Natural History Museum, in the open-access, peer-reviewed journal Subterranean Biology.

"The discovery and description of biodiversity before it disappears is a major priority for biologists worldwide. The caves in Laos are still largely underexplored and the snails known from them remain few in number," points out Dr. Jochum.

The fact that two species of tiny cave snails of the same group were found in two caves located in two independent karstic networks 3.4 km apart, caused the authors to question evolutionary processes in these underground hotspots of biodiversity. The authors hypothesise that the two caves might have been connected during the Quaternary, around 100-200 thousand years ago. In time, the river Yè might have formed a barrier, thus disconnecting the cave systems and separating the populations. As a result, the snails evolved into two different species

A little bit of useless trivia.

THIS HAS NOTHING TO DO WITH CAVING OUTSIDE OF THE FACT WE WEAR THEM!

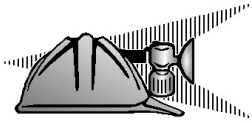
Blue Jeans Were Initially Called "Waist Overalls"
https://interestingfacts.com/blue-jeans-facts/

When businessman Levi Strauss and tailor Jacob Davies received their patent for denim pants with metal rivets at the stress points to make them more durable on May 20, 1873, they marketed the trousers as "waist overalls," intended for miners and other workers. The utilitarian pants underwent their first marketing shift in 1890, when the company introduced Levi's 501 waist overalls made from blue denim, a move to widen their appeal in advance of the patent's imminent expiration. (Why Levi's chose the number 501 is unclear; many of the company's records were destroyed in the 1906 San Francisco earthquake.)

This marked the start of a shift in blue denim's fashionability. In the following decades, the pants began to grace the silver screen, worn by movie stars such as Marlon Brando (in 1953's The Wild One) and James Dean (in 1955's Rebel Without A Cause). As the product garnered mainstream attention, the focus of marketing campaigns transitioned away from the working man to a wider audience interested in everyday fashion. By 1960, the pants became known as "blue jeans" — a term that originally referred to a type of twilled cloth from Genoa, Italy — replacing the "overalls" designation for good.

Central Oklahoma Grotto is a non-profit organization and a chapter of the NSS (National Speleological Society), 6001 Pulaski Pike, Huntsville, AL, 35810-1122 USA. Phone (256)852-1300. Dedicated to cave conservation and safety, C.O.G. publishes general information in a monthly newsletter ($6.00/year) and detailed cave surveys and related Speleological items in a yearly publication, *The Oklahoma Underground* ($3-$8/issue) Membership is by sponsor and is $12 per year for adults, $6 for spouses and students, and $3 if under 18. Central Oklahoma Grotto meets once a month on the second Friday of each month. For information, write Lil Town, 25692 Mosier Circle, Conifer, CO 80433: All submissions to the newsletter should be sent to the editor: Lil Town, 25692 Mosier Circle, Conifer, CO 80433: Telephone: (580)471-1238: E-mail: cavemoose@gmail.com. The deadline for submissions for any particular month's issue is the 20th day of the previous month. If you wish material returned, please include an SASE with submission. All materials in this newsletter are available for reproduction, provided proper credit is given with the article when you print it. Trade publications are welcomed. *Cave softly and safely!*

Friday
January 10, 2025
There will be a virtual meeting.
See you online!



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