CENTRAL
OKLAHOMA
GROTTO
OF THE NATIONAL
SPELEOLOGICAL SOCIETY,INC

C.O.G.nizance

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Google Meet
Friday, September 8, 2023
At 8:00 central time
Becky will send you an invitation

See you Friday evening online.

ANNOUNCEMENTS

*No trips planned at the present time.

*Next meeting is September 8, 2023 on Google Meet. Becky will send out invitations.

MINUTES

CENTRAL OKLAHOMA GROTTO MEETING, MAY 12, 2023

In attendance: Dale Amlee, Sue Bozeman, Duane Del Vecchio, Becky Hunsinger—virtual meeting facilitator, John Talbot, Lil Town, Jon and Kelley Woltz. Noah Zinn, S. Beleu

Presiding: His Highess Dale Amlee
Start time: 8:08

OLD BUSINESS

COG's three surveyors have now gone on two surveying trips this year. COG has returned to doing what a grotto should do.

NEW BUSINESS

1. Duane noted that on the Saturday following our meeting the COG website would bite the dreamless dust. He's loaded 28 gigs of our website onto a stick drive to transfer the data to the VanDyke household.
2. Dale reported on the survey trip to Grotto Cave and various sinkholes and other entrances that probably tie into that cave, many of them too small for human access. He displayed a Google Earth map that he created with notations of these sinkholes on it. Jon will enter his survey data into Compass to revise the final map. They noted encountering quite a few bat-mats in the cave.
3. At the meeting we expected the next survey trip to be in May but have subsequently learned that with Jon gone during May COG will only have two surveyors at the ready, not enough personnel to mount a survey.

TREASURER'S REPORT

Treasurer Emeritus John Talbot delivered his report.
Meeting ended 8:54
Report by S. Beleu, Secretary

WHITE-NOSE SYNDROME DECONTAMINATION PROTOCOL, September 2018

This is the latest formal revision of the national decontamination protocol to prevent spread of the fungus that causes white-nose syndrome. This document is the product of a collaborative effort with multiple federal and state agencies and several non-governmental organizations. Go to this website to view the detailed suggestions listed to help stop the spreading of WNS
https://www.whitenosesyndrome.org/static-page/decontamination-information

Wildlife Health Bulletin 2022-01
National Wildlife Health Center
Jonathan Sleeman, Center Director
January 31, 2022

Winter 2021/2022 Bat Submission Guidelines and Highlights of the 202/2021 White-Nose Syndrome Surveillance Season

Summary

The USGS National Wildlife Health Center has released updated guidance for bat diagnostic submissions for the 2021/2022 white-nose syndrome (WNS) surveillance season.

During the 2020/2021 surveillance season, WNS was detected for the first time in Wyoming and Montana, increasing the number of states where WNS has been confirmed to 37.

Field testing of several vaccine candidates to prevent WNS in susceptible bat species is ongoing, and field vaccination has proven to be safe in WNS susceptible animals.

Updated guidance from the USGS National Wildlife Health Center (NWHC) is now available for bat diagnostic submissions for the 2021/2022 white-nose syndrome (WNS) surveillance season. These guidelines are posted on the NWHC WNS web page and replace all previous NWHC bat submission criteria.

TREASURER'S REPORT

May 2023 TREASURERS'S REPORT

INCOME		EXPENSES
Dividends	$ 0.01	
TOTAL	**$ 0.01**	
CASH	$ 106.05	
CHECKING	$ 341.90	
SAVINGS	$ 1,433.53	
TOTAL	**$ 1,881.48**	

PREPARED BY TREASURER JOHN TALBOT NSS #30254

TRIP REPORTS

No Trip Reports this month

POTPOURI

The BLUE MOON CAVE and Trail
Submitted by Steve Beleu
http://enchantedforestresort.com/blue-moon-cave/

A unique, natural feature of the Enchanted Forest Resort property is the Blue Moon Cave and Trail – a must see for nature lovers and adventurers.

The Blue Moon cave is privately owned and available exclusively to our guests, accessible from our Eureka Springs cabins via a 1/2 mile hike through the forest. We maintain a natural, scenic trail to the entrance.

An interesting piece of local Ozark history – the cave was used by Eureka Springs settlers in the 1800s as a clay mine. It winds deeply into the mountain, sometimes wide, sometimes narrow – Are you feeling brave?

Remember a flashlight and proper footwear – the Blue Moon is dark and wet – please be careful!

Steve's plan is to visit here in December to hike.

Here's a link to a u-tube tour of the cave.
https://www.youtube.com/watch?v=xiJW4Mjk6xo

The Australian town where people live underground
By Zaria Gorvett
3rd August 2023
http://www.bbc.futre/article/200230803-the-town-where-people-live-underground

In one unusual outback town, everything is subterranean – from churches to campsites. As the world heads for 2.7C (4.9F) of global warming, should we be heading underground?

On the long road towards central Australia, as you travel 848km (527 miles) north from Adelaide's coastal plains, is a scattering of enigmatic sand-pyramids. Around them, the landscape is utterly desolate – an endless expanse of salmon-pink dust, with the occasional determined shrub. But as you venture further along the highway, more of these mystery constructions emerge – piles of pale earth, haphazardly scattered like long-forgotten monuments. Every now and then, there is a white pipe sticking up from the ground next to one.

These are the first signs of Coober Pedy, an opal mining town with a population of around 2,500 people. Many of its little peaks are the waste soil from decades of mining, but they are also evidence of another local specialty – underground living.

In this corner of the world, 60% of the population inhabits homes built into the iron-rich sandstone and siltstone rock. In some neighbourhoods, the only signs of habitation are ventilation shafts sticking up, and the excess soil that has been dumped near entrances.

In the winter, this troglodyte lifestyle may seem merely eccentric. But on a summer's day, Coober Pedy – loosely translated from an indigenous Australian term that means "white man in a hole" – needs no explanation: it regularly hits 52C (126F), so hot that birds have been known to fall from the sky and electronics must be stored in fridges.

This year, the strategy seems more prescient than ever. In July, the city of Chongquing, in southwest China, resorted to opening up air raid shelters built during WW2 – amid large-scale bombing from Japan – to shelter citizens from a very different threat: a 10-day streak of weather above 35C (95F). Others have been retreating to underground "cave hotpot" restaurants, which are popular in the city. As the blistering three-month heatwave continues in the US – with temperatures even cacti can't handle – and wildfires incinerate swathes of southern

Walking in the desert around Coober Pedy can be perilous - the landscape is pitted with abandoned mining shafts (Credit: Getty Images)

Europe, what could we learn from Coober Pedy's residents?

A long history

Coober Pedy is not the world's first, or even its largest, subterranean settlement. People have been retreating underground to cope with challenging climates for thousands of years, from the human ancestors who dropped their tools in a South African cave two million years ago, to the Neanderthals who created inexplicable piles of stalagmites in a French grotto during an ice age 176,000 years ago. Even chimpanzees have been observed cooling down in caverns, to help them cope with the extreme daytime heat in southeastern Senegal.

Take Cappadocia, an ancient district of central Turkey. The region sits on an arid plateau, and is famous for its striking, almost fantasy geology, with a landscape of sculpted pinnacles, chimneys, and spires of rock, like a kingdom in a fairytale. But it is what's among these that is truly spectacular.

According to popular rumour, it all started with some disappearing chickens. In 1963, a man was knocking through the basement of his home when his poultry kept going missing. He soon found they were disappearing into a hole he'd accidentally opened up, and after clearing the way, he followed them in. From there, things became even stranger. The man had discovered a secret passageway – a steep subterranean path that led to a labyrinth of niches and further corridors. This was one of many entrances to the lost city of Derinkuyu.

Derinkuyu is just one of hundreds of cave dwellings and several underground cities in the area, and is thought to have been built around the 8th Century BC. It was almost constantly inhabited for millennia – with its own ventilation shafts, wells, stables, churches, warehouse,

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Derinkuyu was abandoned in 1923, and totally forgotten until it was rediscovered in the 1960s (Credit: Getty Images)

and a vast network of underground homes – and doubled as an emergency shelter for up to 20,000 people, in case of invasion.

Like at Coober Pedy, subterranean living helped the region's inhabitants to cope with the continental climate, which swings between hot, dry summers and frigid, snowy winters – while outside, it varies from well below zero to above 30C (86F), underground it is always 13C (55F). (Read more about the ancient city of Derinkuyu from BBC Travel.)

Even now, the region's man-made caves are renowned for their passive cooling abilities – a building technique involving using design choices instead of energy to reduce heat gain and loss. Today Cappadocia's ancient galleries and passages are piled high with thousands of tons of potatoes, lemons, cabbages, and other produce that would otherwise need to be refrigerated. They are in such popular demand, new ones are being built.

An effective solution

Further along the road to Coober Pedy is the main town. At first glance, it could be mistaken for an ordinary outback settlement – the streets are pink with dust, and there are restaurants, bars, supermarkets and petrol stations. On a ridge overlooking all this is the town's only tree, a sculpture made of metal. Coober Pedy is eerily empty. The buildings are widely spaced, and something doesn't quite add up.

But below ground, all is explained. Some of Coober Pedy's "dugouts", as they are known, are accessed through what look like small ordinary buildings – as you step inside, their underground passages gradually reveal themselves, like stepping through a wardrobe into Narnia. Others are more obvious – at Riba's, a campsite where people can pitch their tents in niches several metres below ground, the entrance is a dark tunnel. In Coober Pedy, subterranean buildings must be at east four metres (13ft) deep, to prevent their roofs collapsing – and under this amount of rock, it is always a balmy 23C (73F). While above-ground residents must endure oven-hot summers and frigid winter nights, where it regularly dips to 2-3C (36-37F), subterranean homes remain at perfect room temperature, 24 hours a day, year-round.

Apart from comfort, one major advantage of underground living is money. Coober Pedy generates all its own electricity – 70% of which is powered by wind and solar – but running air conditioning is often impossibly expensive. "To live above ground, you pay an absolute fortune for heating and cooling, when it's often above 50C (122F) in the summer", says Jason Wright, a resident who runs Riba's.

On the other hand, many underground homes in Coober Pedy are relatively affordable. During a recent auction, the average three-bedroom house sold for around AU$40,000 (£21,000 or US$26,000). Though many of these properties were extremely basic or in need of renovation, there's a large gap between these valuations and those in the nearest major city, Adelaide, where the average house price is AU$700,000 (£361,000 or US$457,000). Other benefits include zero insects – "when you get to the door flies jump off your back, they don't want to come into the dark and the cold," says Wright – and a lack of sound and light pollution.

Oddly, the subterranean lifestyle might also provide some protection against earthquakes, which Wright describes as producing a vibrating noise that builds to a crescendo, then rolls through to the other side of the dugout. "We've had two since I've lived here and I've never even flinched," he says. (However, how safe underground structures are during seismic activity is entirely dependent on how large, complex and deep they are.)

An ideal setup

The question is, could underground homes help people to cope with the effects of climate change elsewhere? And why aren't they more common?

There are several reasons why making dugouts in Coober Pedy is uniquely practical. The first is the rock – "It's very soft, you can scratch it with a pocket knife or your fingernail," says Barry Lewis, who works at the tourist information centre.

Back in the 1960s and 70s, the residents of Coober Pedy expanded their homes the same way they created the opal mines – using explosives, pickaxes and shovels. Some didn't require much digging at all, with many locals using abandoned mine shafts as a starting point. Today they are often excavated with industrial tunnelling equipment. "A good tunnelling machine can do about six cubic metres (211 cubic ft) of rock per hour, so you could have a dugout made in less than a month," says Wright.

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However, it's still possible to excavate by hand – so when residents need more space, they sometimes simply start hacking. And as an opal mining area, it's not unheard of for a renovation project to actually make money. One man discovered a large gem sticking out of the wall when he was installing a shower, and a local hotel discovered opals worth AU$1.5m (£774,000/$985,000) while building an extension.

The remote town made from opal mines

Furthermore, the sandstone is structurally sound without supports, so it's possible to make (literally) cavernous rooms with high ceilings, in any shape you like, with no additional materials. In fact, tunnelling in Coober Pedy is so straightforward, many locals live in elaborate, luxury dwellings, with underground swimming pools, games rooms, expansive bathrooms, and high-spec living rooms. One local has previously described his subterranean home as "like a castle", with 50,000 tumble bricks and arched doorways to every room.

"We've got some stunning dugouts here," says Wright, who explains that the residents are notoriously private – another possibility when you live underground – so you only tend to find out about them when you're invited over for dinner.

A question of moisture

However, the feats at Cooper Pedy would not be possible everywhere. One major challenge with any underground structure is damp.

Of the many rock dwellings that have been inhabited by humans, the majority are in dry areas – from the towers and walls built onto the cliffs at Mesa Verde in Colorado, inhabited for over 700 years by the Ancestral Pueblo people, to the elaborate temples, tombs and palaces cut into the pink sandstone at Petra, Jordan. Today, one of the last inhabited rock-cut villages in the world is Kandovan, in the foothills of Mount Sahand in Iran – a valley scattered with strange, pointed caves that have been hollowed out into houses, like a colony of termite mounds. The area receives just 11mm (0.43in) of rainfall each month on average throughout the entire summer.

On the other hand, building underground in wetter areas is notoriously tricky. To waterproof the original London underground tunnels, which were built in the 19th Century, each one was encased in several layers of brick and a liberal coating of bitumen (today more modern methods are used). But even with those precautions, there are still regular reports of black mould. The same issue plagues basements, bunkers and car parks in high-rainfall areas throughout the globe.

There are two main reasons for this: a lack of ventilation, which can allow moisture from cooking, showering and breathing to condense onto a cave's cool walls, and groundwater – if underground homes are built near the water table.

In Coober Pedy, it's not just homes that are underground - there are subterranean restaurants, shops, motels, and even a Serbian Orthodox Church .

Take the Hazan Caves in Israel, a complex network of underground hideouts built by Jewish people avoiding persecution by the Romans in the 2nd Century AD – complete with olive presses, kitchens, halls, water reservoirs and a columbarium for storing funerary urns. Just 66m (217ft) into the cave, the temperature drops significantly compared to outside, but the humidity also leaps from just 40% to double this level. This may be partly because the cave system is built into porous rock in a lowland area – where there tends to be more groundwater. With narrow passageways and limited entrances, it also has poor air flow.

But in Coober Pedy, which sits on 50m (164ft) of porous sandstone, conditions are arid even underground. "It's very, very dry here," says Wright. Ventilation shafts are added to ensure an adequate supply of oxygen and to allow moisture from indoor activities to escape, though these are often just simple pipes sticking up through the ceiling.

There are some other downsides to these heatwave-proof bunkers. Lewis currently lives above ground on a caravan park, after his underground home – at the very same spot – collapsed. "It doesn't happen very often," he says. "It was on bad ground." It's also not unheard of for residents to accidentally knock through into a neighbour's house.

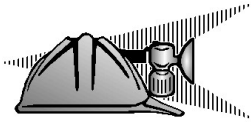
Despite the setback, Lewis misses dugout life – and Wright would highly recommend it to anyone who is currently suffering in unreasonably high temperatures. "It's a no-brainer when you experience that heat," he says.

Perhaps soon Coober Pedy's peculiar sand-pyramids will start poppling up in other places too..

In Coober Pedy, it's not just homes that are underground - there are subterranean restaurants, shops, motels, and even a Serbian Orthodox Church (Credit: Getty Images)

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!* Website: http://www.okcavers.com

Friday
September 8, 2023
There will be a
virtual meeting.
See you online!



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