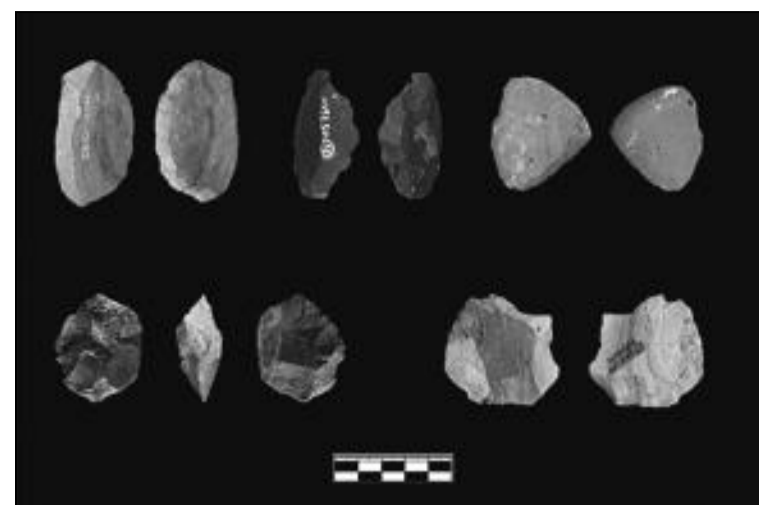


LIFE



From left: A polished stone implement unearthed from the Zhaoguodong cave site in Gui'an New Area, Guizhou province; the site is located in an area of karst caves with dense vegetation; a set of chipped stone tools excavated from the site. PHOTOS PROVIDED TO CHINA DAILY

Rocks and a charred place

Archaeologists are using sophisticated tools and evidence of fire to study the history of human settlement at the Zhaoguodong relics site in Guizhou, **Wang Kaihao** reports.

For Zhang Xinglong, the deputy director of Guizhou Provincial Institute of Cultural Relics and Archaeology, exploration of the Zhaoguodong cave is like traveling through time.

Stepping down the ladders and along the platforms in the cave, located in Gui'an New Area, not far from Guiyang, capital of Guizhou province, Zhang and his team members can review tens of thousands years in one glance, but it may take years to decode the abundant hidden information in detail.

Earlier this month, the site was chosen by the country's top-tier scholars as one of the Top 10 New Archaeological Discoveries of 2020.

According to Zhang, the 8-meter-deep sediments left underground in 25 strata span the late Paleolithic age to the Neolithic period, which is about 45,000 to 10,000 years ago.

"Such a site with a long continuity of human settlement is rarely seen in China, or even worldwide," he tells China Daily. "There has been an abundant discovery of relics in the thick layers of sediment, which is astonishing."

About 50 areas indicating early usage of fire have been found in the cave. Two tombs with burial objects dating back to sometime between 9,000 and 12,000 years, are among the earliest known of their kind in Southwest China, Zhang says.

Rich findings of stone relics in the cave, including one of the earliest polished stone implements in China, dating back 12,000 years, as well as over 300 tools made of bones and antlers — the biggest reservoir of such items discovered in any of the country's prehistoric caves to date — further consolidate the extraordinary status of Zhaoguodong.

"We have been given new clues about how polished stone implements originated and what they were used for," Zhang says. "These kinds of items are also an indicator of modern humans, so it may greatly help our studies into their origin and how they migrated in southern China."

"And the rich evidence of fire usage, together with other relics surrounding them, can be key references in unveiling the cave dwellers' living habits and their strategy to survive," he says.

The latter point is a key one, as for the residents here tens of thousands years ago, life could be really tough. Zhang cites a layer of earth, which



looks darker than the others, as an example.

"That indicates one of the coldest eras that human beings ever experienced," he says. "At that time, our human ancestors began to migrate from Northeast Asia to North America via the frozen Bering Strait."

"The same period of time was also when people in Zhaoguodong set fires more frequently to keep warm, leaving a darker layer of earth in the strata," he adds.

"The exciting part is that many interdisciplinary studies have been done at the Zhaoguodong site," Li Shuicheng, a professor at Sichuan University, says. "They can show how the climate changed and how people handled that change."

Compared with an aged cave, per se, time of human settlement could be transient. However, human beings also made their mark on the natural formation of the local geology.

According to a team of researchers from Southern University of Science and Technology based in Shenzhen who participated in Zhang's project, human activities were quietly recorded by the growing stalagmites in the cave as burned ash has been detected in the geological deposits of calcium carbonate, echoing a time



Top: Zhang Xinglong, the deputy director of Guizhou Provincial Institute of Cultural Relics and Archaeology and the leading scholar at the Zhaoguodong site, examines rocks in the cave on April 16.

Above: The excavation area of the Zhaoguodong cave site. PROVIDED TO CHINA DAILY

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Zhang Xinglong, deputy director, Guizhou Provincial Institute of Cultural Relics and Archaeology

when fires were frequently lit in the cave.

"Further studies of the information hidden in the stalagmites may unveil more types of human activity," says Zhang, who is confident that more findings will present themselves.

But their existence was not just about staving off the darkness and the fear of animal attacks. Beyond the cold nights was the continuous pursuit of a comfortable life and a place to call home.

In 2016, Zhang led his team on a comprehensive survey of the caves in Guizhou. He first learned of the existence of Zhaoguodong, the name of which literally means "a cave attracting fruits", through a conversation with local villagers.

Surrounded by trees and situated close to a river, the cave, with its ideal living conditions, immediately hooked Zhang's interest. Guessing that it had probably once been home to an ancient human settlement at some point, Zhang began investigating the cave, which proved his instincts right.

Zhang notes that, much like people today, who consider many things about a location when buying a property — such as how close the nearest grocery shops are and how

safe the neighborhood is, people from 40,000-odd years ago also had similar concerns, choosing this place, not only because the natural landscape made for a perfect shelter, but also because the river in front of the cave was a consistent source of water and food.

Follow-up research in the lab has analyzed their potential diet. Grapes and kiwi fruits appeared on dining tables between 12,000 and 16,000 years ago, and as much as 25 varieties of animals once fed these cave-men, according to research by Chengdu Cultural Relics and Archaeology Research Institute in Sichuan province.

"The era of Zhaoguodong as a settlement site was a key time in the formation of agriculture," says Jiang Ming, a researcher from the Chengdu institute. "The discovered plant seeds indicate early-stage cultivation of crops, but we still need more clues."

Only a 70-square-meter area out of the total 200 within the cave has been unearthed, but, currently, there is no further excavation plan. As Zhang says, on one hand, it leaves larger room for archaeologists in the future to try new research methods, and on the other, it allows us to focus on all the work that needs to be done in the laboratory on the relics that we have already uncovered, such as getting samples of human DNA from the tombs for comparative studies.

"It could also be a good chance to promote archaeology to the public if a museum or heritage site park is to be established," Zhang says. "The public often consider there is not so much to see at a cave site compared with the stunning artifacts present at other archaeological sites. But if its stories showing the long history of human settlement can be vividly told, its significance can be better understood."

Similar discoveries nearby once enjoyed widespread attention, such as the Niupodong cave, which dates back 15,000 years. Also located in Gui'an New Area, Niupodong was listed among the Top 10 New Archaeological Discoveries in 2016. In Zhang's eyes, the pair complement each other in portraying a continuous picture of thousands of years of human activity in the area.

Wang Jin contributed to this story.

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Running across China's soccer goals on a rural grassroots pitch

I recently spent 15 days filming a documentary in Yan'an, Shaanxi province, climbing ancient cliff-side stairs otherwise deemed too dangerous for public access, filming in freezing temperatures and staging hours-long interviews with people whose thick local accents I couldn't understand.

It was a tough but worthwhile journey. But the segment I looked forward to most is one many people would least — playing soccer with middle schoolers.

First, I hate cardio. Second, I hadn't played since I

was about 9 and wasn't sure I even remembered all the rules.

Third, I was concerned that, as a big, fumbling-footed galoot, I might accidentally injure one of the cute kids.

And, well, I'd just never been interested in the game. Nothing against it — just not my thing.

Also, my dress shoes were too large, and one flew off when I kicked a goal during warm-up.

But the film shoot was happening, no matter what.

Turns out, the coach and I wear the same size shoe, so he lent me his shoes so I could perform the footwork without launching my footwear into some kid's face.

As I ran onto the field, I couldn't wait for it to be over with.

But almost instantly, I forgot about my trepidations, about the cameras, about the crowd — about everything except the ball.

And, to my shock, I was actually able to dribble and block decently, although not as well as the children. But I absolutely missed a penalty shot. It wasn't even close, to the tremendous amusement of the kids — and myself.

I had fun! What I'd expected to rank among the least enjoyable activities of filming turned out to be one of my favorites. And it made me rethink my attitude toward soccer.

Zhidan, the rural county of about 160,000 residents in which I played, has become celebrated nationwide for promoting soccer

culture and talent.

Roughly 60 people played in the county in 2003, and about half were adults.

Today, all of its more than 20 primary and middle schools have soccer programs. Nearly a third, or about 6,000 students, play on 32 artificial-turf pitches. Around 250 have gone on to pro clubs or university teams.

I spent the rest of the afternoon talking with a teenage girl who told me that she'd become lonely, withdrawn and despondent after her parents divorced. And since her mother works until late, she raises herself in the cave they call home.

Xiao Bai says soccer helped her gain confidence, make friends and

find a new sense of happiness overall.

She scored three goals the day I met her.

Her eyes told her story better than her words.

I'd frankly only thought of such benefits of the game abstractly until talking with her, face-to-face.

Beyond Zhidan, China has in recent years made great efforts to advance soccer, including in rural areas, to close the gap with "global powerhouses" in the sport, improve health and even boost tourism.

Still, China's men's soccer team only qualified for the World Cup once, in 2002, and seems unlikely to make the 2022 finals in Qatar. The team also didn't qualify for the Tokyo Olympics.

And that's despite the fact that, in

2004, FIFA recognized the ancient martial game of *cuju* that originated in Zibo, Shandong province, as the origin of contemporary soccer.

New national measures call for establishing soccer facilities in all urban communities by 2035 and enhancing youth training everywhere.

I'd always agreed with the value of China's campaign to advance soccer, even though I didn't personally care for the game.

But after actually playing in Zhidan and engaging with the kids there, I have a newfound appreciation of this goal, in every sense, and my own interest in the sport.

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Second Thoughts