



Ritual Landscapes Project Field Director Dr. Alex Wasse at Iraq ed Dubb . (Photography Iona "Kat" McRae)

UNDERWORLD

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In the dangerous and little-known caves underneath northern Jordan, a team of explorers and archeologists is seeking to uncover the secrets of the past.

ANCIENT SECRETS

“Copper Cave,” as the survey team calls it, sits tucked away in the lush woods behind a small village in one of Jordan’s northern wadis. From outside it appears to be little more than a rock ledge, where a wandering shepherd might seek shelter during a winter rainstorm. But concealed in the rear is a narrow crevice, which winds its way 150 meters into the mountain.

Inside, the cave seems surprisingly bright, as the reflection of the high-powered lamps on the team’s caving helmets plays off the pale limestone walls. But this is, in a way, an illusion: if the lamps were to go out, the darkness would be absolute.

A few meters on, the passage narrows to a tiny crack, barely more than 30 centimeters high and 70 or 80 wide. This is what

they call a squeeze. To pass through, the explorers have to crawl, headfirst, down into the narrow slit of rock, pushing their packs and equipment ahead of them.

The air in the upper passage still carries the crispness of autumn, but beyond the squeeze it quickly gets stuffy, then stifling. The walls and floor grow slick with damp clay and bat guano, and tiny rivulets of water trickle down muddy walls in which the fossils of ancient sea creatures are still visible. This is a far cry from the lighted, air-conditioned caverns that tourists around the world take pleasure in exploring.

It is here, in one of these muddy crevices, that archaeologist Jaimie Lovell, director of the cave survey project, made one of her expedition’s most interesting finds: a copper axe head and chisel blade dating back to the Chalcolithic period, between 6,500 and

"The volume of the caves under Jordan is absolutely immense, in comparison to the amount we're finding"



Cavers Frag Last and Henry Rockliff accessing a cave in the Wadi Irjan. (Photography Jaimie Lovell)



The group explores Iraq el Wahij. (Photography Frag Last, outdoorinstruction.co.uk)



Dr Jaimie Lovell returns from exploring a cave in the Wadi Zubia. (Photography Adam Evans, outdoorinstruction.co.uk)

5,500 years ago. Under the layers of clay and muck, she says, who knows what other valuable information is waiting to be found?

UNKNOWN TERRITORY

For archaeologists, caves can be treasure troves – not of gold or jewels, but of knowledge and artifacts that can help shape our view of human history. People often use natural caves as places of shelter, habitation or burial; when a site is abandoned or its inhabitants die, the cave protects the traces of their existence from weather, animals and inquisitive humans.

While cave exploration is popular as a sport in many countries, including Lebanon and Saudi Arabia, which boast beautiful and tourist-friendly cave systems, it has never caught on in Jordan.

But much archeology has been done in caves just across the nearby border with Israel and the Palestinian Territories, Lovell says. In part, this is because there is a culture of outdoor activities and adventure sports there that includes cave exploration, and also because caves are often discovered during the excavation for major construction projects like building roads or settlements. Excavations there have turned up evidence that the caves were inhabited during several periods of history (see sidebar on page 64).

Jordan's caves, however, have never been substantially explored. No one knows how big they are and even finding the entrances proves a difficult proposition, but experienced cave explorers say it's likely there are underground systems that cover vast distances.

Lovell and a team of cavers and archaeologists funded by the Council for British Research in the Levant have set out to find and survey the cave systems of two major wadis in the north of Jordan, Wadi Rayyan and Wadi Kufrinja, looking for clues to the lives of their ancient inhabitants.

"In terms of Jordan's archeology and exploration, this is the first time anyone's done this kind of work," Lovell says. "We've looked at over 120 [significant] caves... ones we've bothered to record... in terms of whether they're Bronze Age, Iron Age, Byzantine... [and] we're able to add those to the Jordan Department of Antiquities' database system." Adding the caves to the national database of archaeological sites could help prevent the destruction of caves that could contain important information or artifacts.

"When I designed this project I had never been in a cave myself, except maybe tourist-y caves," Lovell says. "I went to the UK on a re-





*Interiors of Zubia, Jordan's largest and best-known cave.
(Photography Iona "Kat" McRae)*



*Archaeologist Matt Williams, in full protective gear, inside "Copper Cave."
(Photography Adam Evans)*

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search leave, and I did my research on who can train me to be in caves." After taking a course in cave exploration, Lovell says she realized just how much expertise was needed for the job – expertise not available in Jordan – and ended up asking her instructor, Adam Evans, to come back with her and lead a group of three certified cavers who would assist the project.

DANGEROUS JOBS

"Climbers climb for their own enjoyment," says Adam. "You get to the top, it's the thrill of being the conqueror. Cavers don't do that." Exploring underground, he says, is "more of a holistic experience; it makes you appreciate the environment more."

If rock climbing is about conquest, cave exploration is more about understanding: accepting the power of the natural world over the explorer, and the necessity of playing by its rules in order to survive.

Michael Last, a.k.a. "Frag," is Adam's business partner from the UK. The two men run Outdoor Instruction (www.outdoorinstruction.co.uk) an adventure sports company that teaches cave exploration, rock climbing, survival skills and more.

The third member of the caving party is Henry Rockliff, by his own description, a different kind of caver. While exploring the underground darkness is a profession for Adam and Frag, in Henry's case it could conceivably be called an obsession. In his spare time, he looks for new cave systems to explore, and as a day job, he does rope work – hanging in a harness inside the roofs of supermarkets or on the sides of skyscrapers, doing repairs or maintenance in areas that just can't be reached otherwise. He says it's the closest you can get to caving without a cave.

"In England, if you want to find new caves, you've got to go down to the grottiest little bit and dig for hours," Henry says. In Jordan, everything is unexplored, and requires cavers who not only understand how to explore safely, but how to improvise as they do it.

"You don't always know what's around the corner," he says. "No one's entered those caves [in Jordan] so they're quite loose...so there's things that will fall down on you." In known caves, you choose what you're going to do and where you go, he says – in unexplored caves, you often have no choice except to climb, crawl or abseil through whatever you find in front of you.

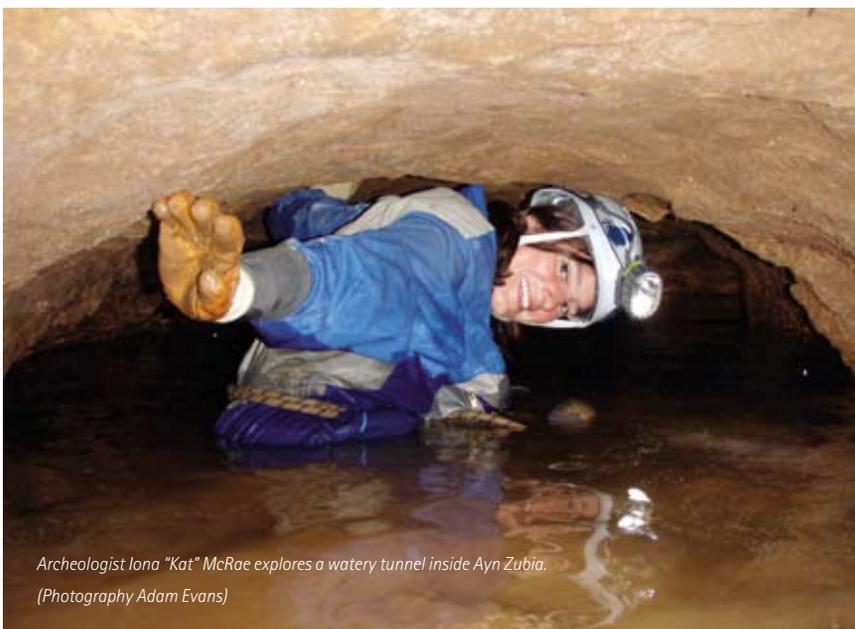
The cavers' job is to help identify possible cave areas. When a site is found, they go in first to assess it, and figure out how to assist the archaeologists in getting in, doing their work and getting out alive.

THE SEARCH

Much of the team's time is spent crammed into pickup trucks, traveling from village square to village square looking for old men with stories of caves up in



Caver Adam Evans lights up some stunning rock formations inside Zubia cave.
(Photography Frag Last)



Archeologist Iona "Kat" McRae explores a watery tunnel inside Ayn Zubia.
(Photography Adam Evans)

the mountains or young boys who have come across them in their work or play.

The key figure in this is Najih Abu Hamdan, the Department of Antiquities' Acting Inspector for Jerash, and the survey team's liaison, guide and ad hoc folklorist. Over the weeks of the expedition, he has become adept at finding stories about caves and deciphering the often-fictionalized accounts.

It's a frustrating process, and Najih and Lovell have spent a lot of time exploring caves that turn out to be used as goat sheds and chicken houses. In one cave, Lovell found a farmyard abattoir filled with the carcasses of dozens of goats in various stages of dismemberment. Other caves are filled up with rubble left over from building houses, blocked by piled garbage or plugged with concrete to prevent children and livestock from wandering inside.

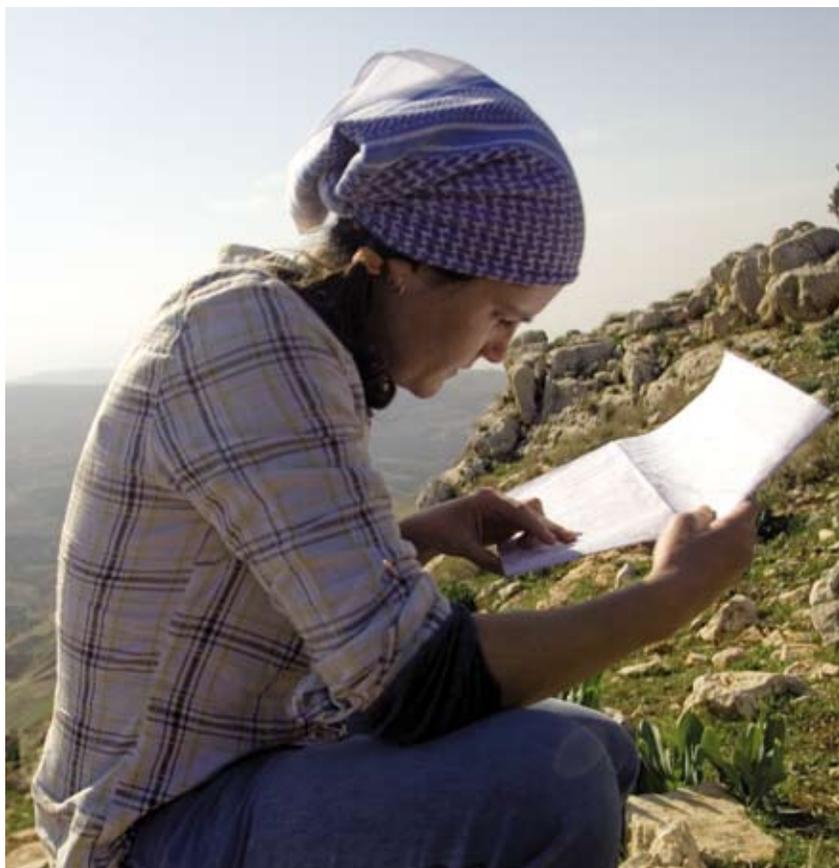
Despite many caves being destroyed, Lovell says, there is evidence that cave systems were considered a valuable resource by many people, who thought of them as potential refuges in times of trouble. A few sources even knew how many people could take shelter in nearby caves, a memory from the wars of three decades ago. A few were upset about caves that had been destroyed to lay highways or build houses.

"They saw [the caves] as important aspects of the landscape, which were lost," Lovell says. Registering caves with the Department of Antiquities could help prevent further destruction, she hopes.

But danger and fear also keep local communities from exploring. Several members of the survey team said they had been warned not to go into caves because of a variety of perils: bats, snakes, strange noises or bad air. Perhaps this attitude is wise, since exploring caves without experience, a trained group and proper caving safety equipment can, indeed, be very dangerous.

When caves have been found or partially explored, Frag says, the explorers seldom seem motivated by curiosity: "They're not doing it for pleasure, they're doing it because they think there's treasure."

Tales of buried gold are more myth than reality, but they create yet another challenge for the archaeologists: many potentially important sites have been looted or destroyed. For example, Zubia, Jordan's one well-known cave, has been extensively damaged by treasure hunters armed with spades, chisels and even dynamite, Lovell says. Finding unspoiled sites requires the



team to explore the most inaccessible and potentially dangerous places they can find.

Copper Cave is a good example. The only reason the artifacts there were left undisturbed, Lovell suspects, is the squeeze: crawling headfirst into a dark, muddy crack barely large enough to breathe in is enough to stop all but the most determined treasure-hunters.

THE TREASURE

The copper chisel and axe head found in Copper Cave are not, at first sight, impressive. They are kept on a shelf in a small storeroom, packed in jars of silica gel. No gold or jewels here, just corroded old metal, still flecked with mud. But for Lovell, the finds represent impressive proof that there is information to be gleaned by underground exploration in Jordan.

"Finding those copper axes is really stunning, and will make a huge impact in the field," she says. "Nothing of that nature has ever been found in Jordan before. What we're showing is that people were using the landscape over here in the same way they were using the landscape in the west [of the Jordan river]. Because there is

no tradition of caving here, nothing was known about whether use of caves over in the west was just a very local phenomenon."

In their last days of work, the team also discovered traces of much older inhabitants of the caves, Lovell says, in a larger cavern system that can only be reached by a 15 meter abseil.

"We'd done a survey of the cave, but there were still more passages to explore," she says. "On the last day, we decided we would go back and survey that area a little more carefully." In one passage, they discovered a number of artifacts that appeared to date back to the end of the stone age, testifying to how long the caves had been occupied. Lovell is convinced there are many more secrets to uncover, and says she hopes soon to mount a larger exploration in one of those caves.

But not all of the rewards of the work are scholarly.

"We've seen some of the most beautiful caves," says Henry Rockliff, "But many of them are quite small...we've found lots of caves that don't go anywhere...[but] the volume of the caves under Jordan is absolutely immense, in comparison to the amount we're finding." ¹⁰

HIDDEN TREASURES

"In the 4th millennium B.C.E., man, who had used only stone and flint in prehistoric times, and pottery vessels in the late Neolithic period, first learned to smelt copper ores, and to make copper objects for his use.

"This period is considered to be the dawn of history, when the foundation was laid for the development and rapid progress of civilization."

—Pesach Bar-Adon, *The Cave of the Treasure*.

The importance of caves in Middle Eastern archeology has been recognized for years, but a major spur to exploration came with the discovery of the Dead Sea scrolls in the late 1940s. The religious and scholarly significance of the scrolls helped galvanize a flurry of exploration backed by the Israeli Antiquities Authority, according to articles on their web site.

In 1960, Pesach Bar-Adon, an archaeologist sponsored by the Antiquities Authority discovered a cave containing a hoard of hundreds of copper, ivory and obsidian objects from the Chalcolithic period, about 6,500 to 5,500 years ago.

"The work was indeed difficult and dangerous," Bar-Adon writes: "Climbing with the aid of ropes and ladders, walking along goat-paths on the edge of sheer precipices, back-breaking excavations in thick clouds of dust and constant danger from falling rock."

But his finds in what came to be called *The Cave of the Treasure*, is the largest collection of Chalcolithic items ever discovered. It includes huge numbers of weapons and decorative objects made from an early kind of low-purity smelted copper, as well as objects whose functions still baffle scholars. While such a huge find is one-in-a-million, many other expeditions have turned up interesting, if less spectacular, discoveries in the caves of Israel and Palestine.

Caves in the region were inhabited during several periods of history, most clearly during the Chalcolithic period, and then again, thousands of years later, during the Judean revolts at the beginning of the first millennium C.E., when they were probably a place of refuge from the Roman military.

By contrast, no one knows why the people of the Chalcolithic, who possessed a highly developed artistic culture and built many settlements in the area, came to inhabit the caves at all. Perhaps they, too, were taking refuge from their own inter-community wars. Or perhaps there was a ritual or religious region, as the burials in several caves suggest. About 5,500 years ago, Chalcolithic settlements were abandoned and not re-settled, for reasons that remain unknown.

A more thorough exploration of Jordan's cave systems could help to answer some of these questions.