

# AL DAKHILIYAH

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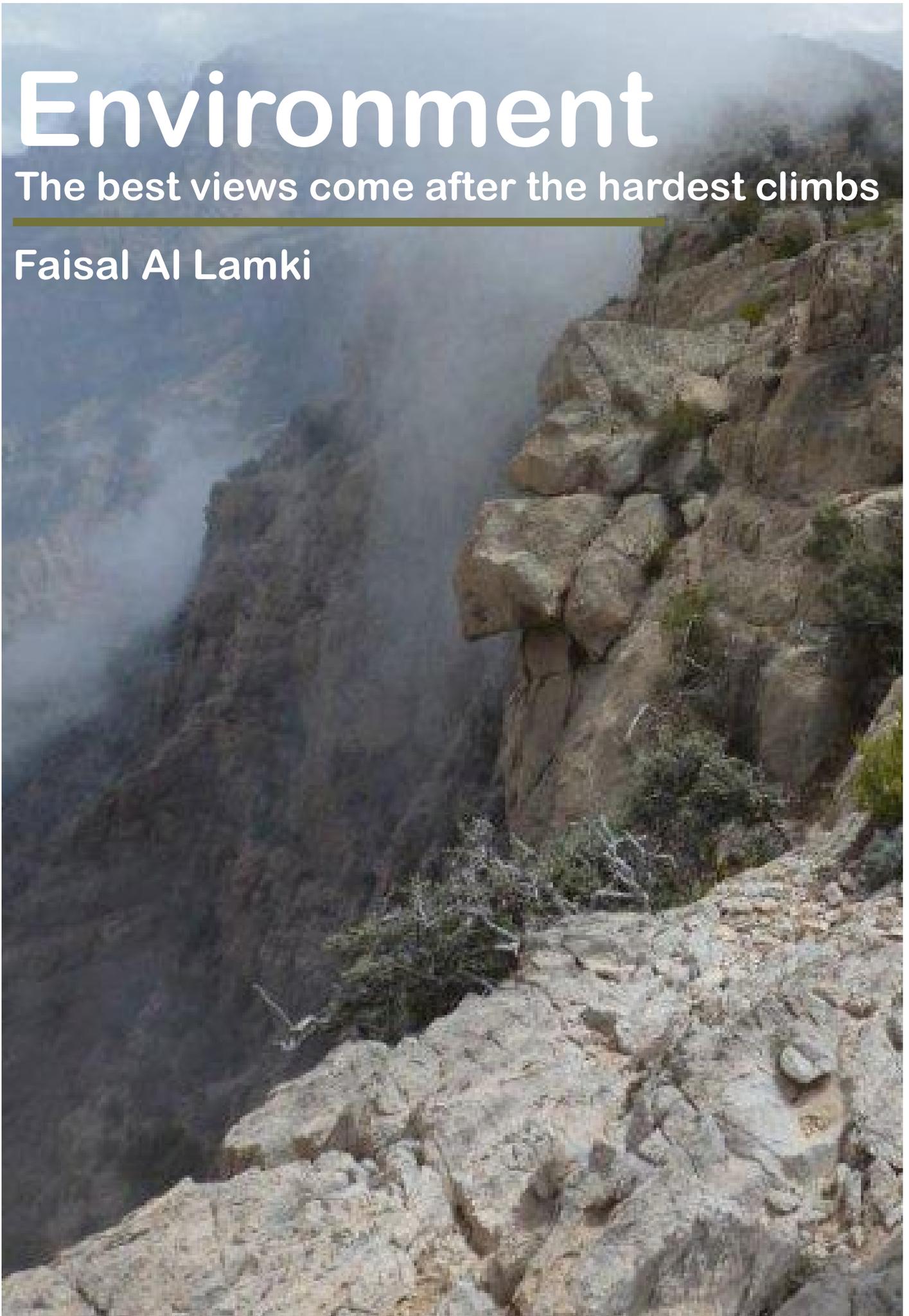
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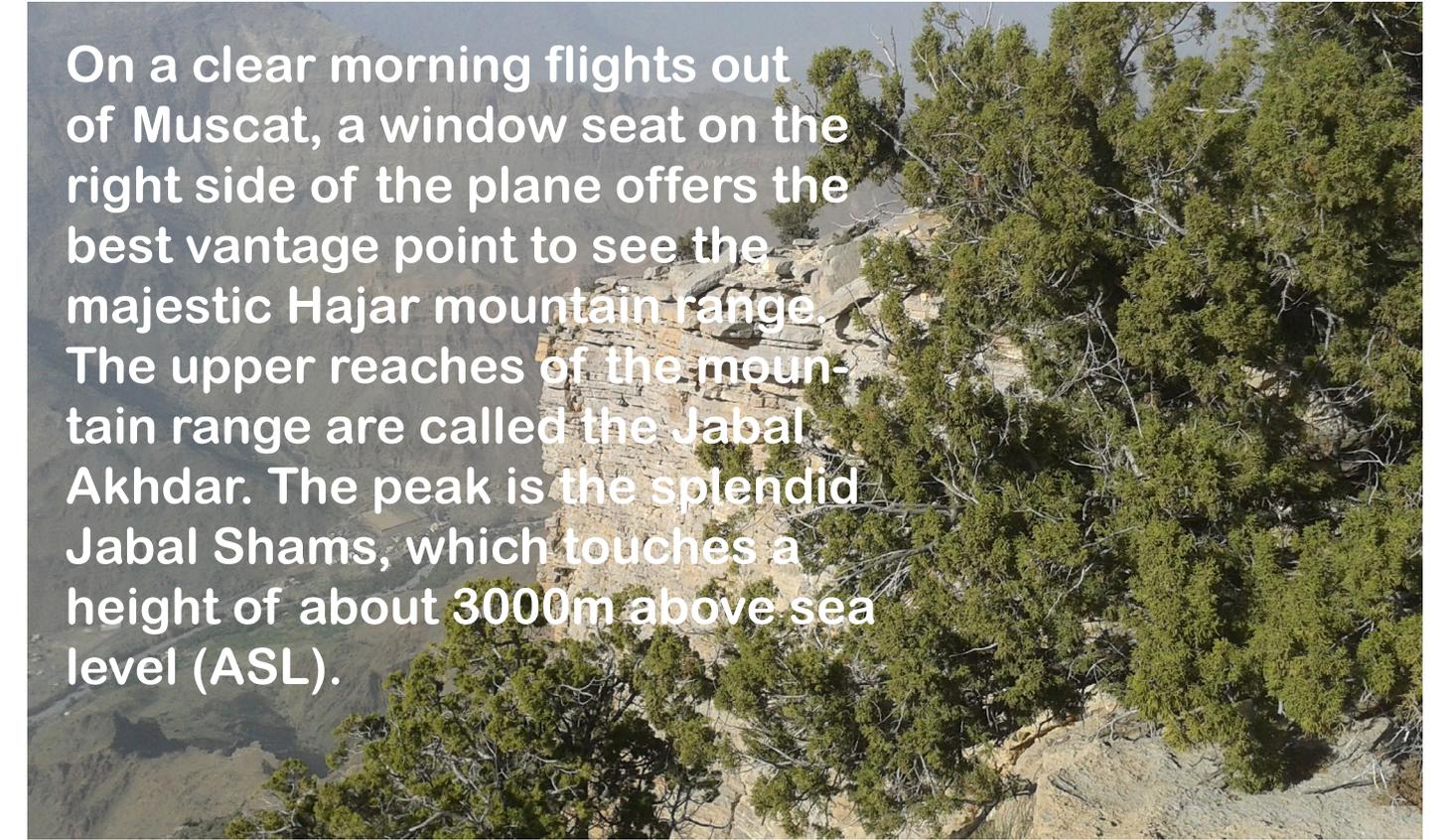
# Environment

The best views come after the hardest climbs

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Faisal Al Lamki





On a clear morning flights out of Muscat, a window seat on the right side of the plane offers the best vantage point to see the majestic Hajar mountain range. The upper reaches of the mountain range are called the Jabal Akhdar. The peak is the splendid Jabal Shams, which touches a height of about 3000m above sea level (ASL).

**A**north-facing escarpment with a large vertical drop; this sheer drop translates into pure grandeur. The southern side of the mountain range slopes gently towards Al-Hamra and Nizwa, enabling those who are not experienced mountain climbers to ascend to the summit.

Visiting the Jabal Akhdar range is most spectacular from the North. The drive from Rustaq takes you deep into the foothills of the Hajar range, following a trail ending up at Wajmah, a small village nestled in the mountains. It's a typical Omani mountain village — a cluster of clay houses and terraced agriculture. Between the houses and the terraces runs a falaj, the village's water supply. From there one can start to ascend. A two days walk but worth all the efforts.

The Hajar foothills are covered with Acacia and Ziziphus trees associated with Maerua crassifolia and Lycium shawii shrubs. On the higher terrain, conspicuous Euphorbia larica and violet lavender shrubs start to appear. These small plants are an indicator of high altitude of 1,000m ASL. The dominant tree at this height is the Acacia gerardii, locally known as tulh. It's a medium-sized tree, and its seedpods are used as fodder for goats.

The Sultanate of Oman's vast landscapes and seascapes host some of the richest biodiversi-

ty in the region. In Oman, typically, variations in vegetation according to whether the habitat is sandy, stony or rocky. In the mountains, however, the main environmental factor that determines the kinds of flora and fauna one sees is the temperature — and this changes with height.

What is most striking about the ecology of the Hajar Mountains, however, is the diversity of the origin of the vegetation cover. The plants have affinities with both African and Asiatic species. Specifically, the plants seen in the wadis and the foothills belong to those in the African group, whereas those at higher elevations are related to plants from Asia, especially Iran and Afghanistan.

The wild Olive tree zone starts at about 1,200 m. The common tree species is Olea europaea, locally known as utm. It's an evergreen, medium-size tree whose purple-black fruits are not palatable. Goats, however, seem to like its leaves and twigs; some of the trees appear to be heavily browsed, and the locals cut off tender shoots to feed the younger animals. Associated with the wild olives is the Monotheca buxifolia, locally known as but. It's a large spiny shrub up to 4m tall. In protected ravines it forms areas of dense woodland. Its fruits are round purple berries that are edible. The berries are harvested and sold at the local souqs.

A popular campsite from the northern escarpment for mountain travelers is called Masjid Mu'alla. It is really no more than a protruding ledge; in fact, it is the only available flat surface on the cliff face large enough to accommodate a few people. At a height of about 1,900m, the panorama is breathtaking. One can command a view of the foothills extending northwards all the way to the Batinah coast. Indeed, the mountain breeze is not only cool but moist, coming all the way from the sea.

People from neighbouring villages going up or down the mountain conducting errands of one sort or another regularly stop at Masjid Mu'alla for the night. While I was there, we exchanged news, helped each other to prepare food and finally brewed some coffee. Interestingly, one of the first questions asked by people climbing up the mountain was "Has it rained?". Here, high in the mountains, enough moisture can collect in the air to cause a localized rainstorm. It takes 2-3 hours of walking, climbing a virtually vertical part of the cliff. To approach the edge of the escarpment, the most striking feature were the Juniper trees (*Juniperus excelsa*), locally known as al'alan. The tree's leaves are needle shaped

and have a pleasant smell; they are used as an ingredient in locally produced massage oil.

The flat summit is at about 2600m— the view is overwhelming. During the hot summer when temperatures at the coastal plain and interior of the desert reach as high as 45 degrees and above, the mountain summits are 20 degrees cooler. Being there is in contrast to the more arid environment of the desert plains. One is transformed into a temperate Mediterranean forest. The climate, the landscape and the vegetation make you wonder if you are indeed in the arid Arabian Peninsula. The summit plateau was dotted with Juniper trees; the ground below was covered with tall grass. The grass is harvested, it is cut folded and tied into bundles and transported back to the villages at lower altitudes.

The peak of Jabal Shams feels like the roof of Oman; an elated achievement and an absolute photo session.



## Village of Quyut



To the west of the mountains summit is Jabal Shams at a height of about 3000m ASL. Approaching Jabal Shams are depressions covered by what must be one of the densest Juniper forests in the country. The trees were standing side by side, 10m high.

They were in much better condition than the isolated ones we had seen earlier. The densest juniper forest in Oman is at the Hayl Hawari village, east of Jabal Shams. The Jabal plateau main village is Seiq. The cultivated terraces are spectacular making use of the soil and meager water resources. From March to mid-May, Damascene roses bloom on the surrounding mountain slopes. The rose water is extracted in traditional distilleries.

The Jabal Ahkdar have seen rapid infrastructural development and rise in population, transforming villages into towns. This was needed as Oman entered a new modern era. But one cannot ignore the drastic transformation of the fragile montane ecology. All efforts should be made to preserve the mountain ecosystem. The Jabal woodlands are ancient; some of them are probably about 300 years old or more. Many trees are withering away because of age and few signs of

regeneration, and those that remaining fall prey to domesticated animals.

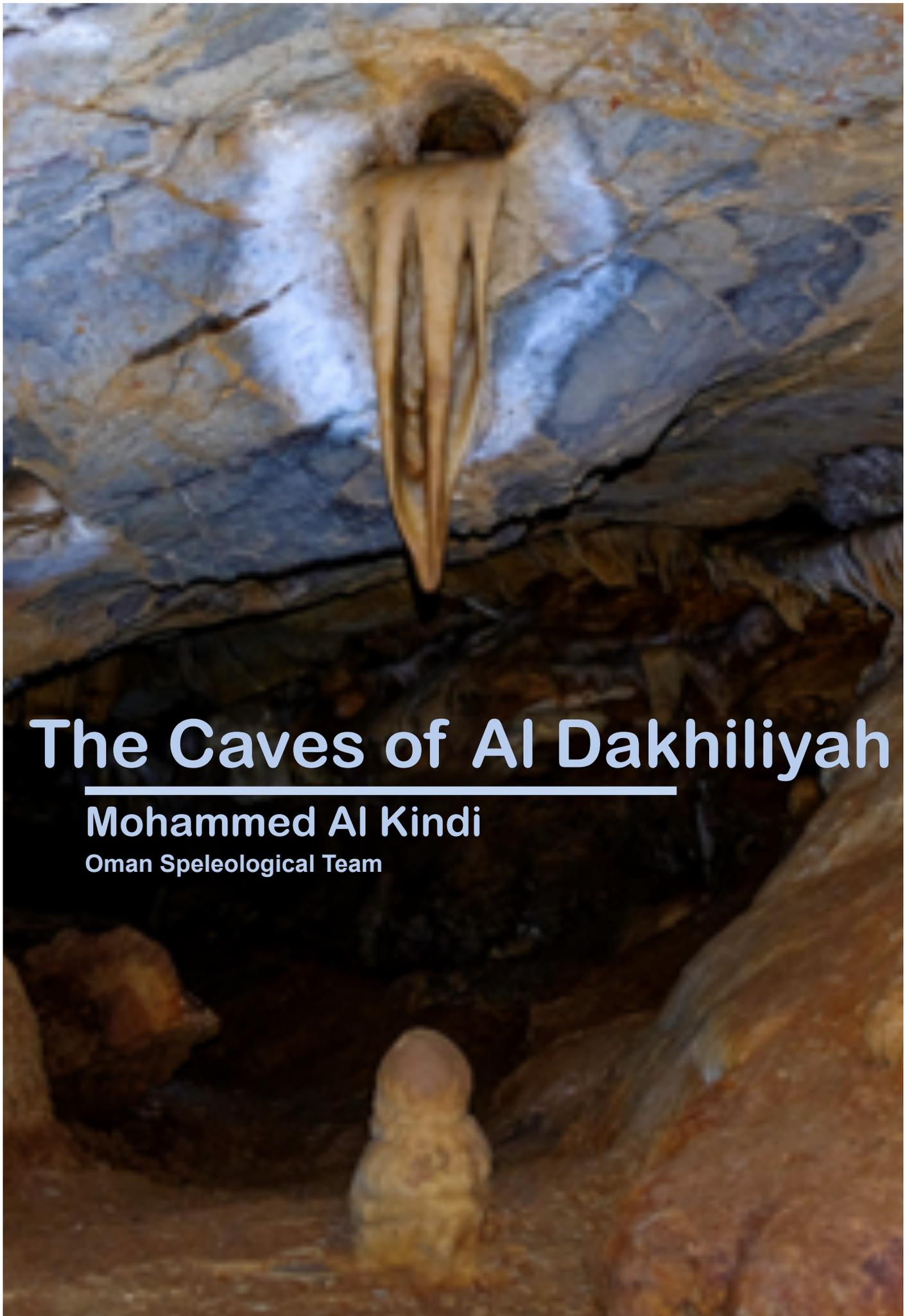
### About Faisal Al Lamki

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Faisal worked for over 25 years as an environmentalist and Engineer in the oil and gas sector. Mainly in Petroleum Development Oman (PDO) with overseas posting in Shell Holland and Shell Sarawak Malaysia.

He worked within the public sector for four years as advisor for Conservation of Environment for Diwan Royal Court of Affairs, with two years spent as deputy project leader with IUCN/WWF. Followed by one year at the Ministry of Environment as the Director of Nature Conservation.

Faisal's indepth & intimate knowledge of Oman's rural landscape and geography helped him to receive a grant back in 2016 from the Society on Oman's Steppe Eagles. The grant has recently received a second round of funding to continue the research further.



# The Caves of Al Dakhiliyah

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Mohammed Al Kindi

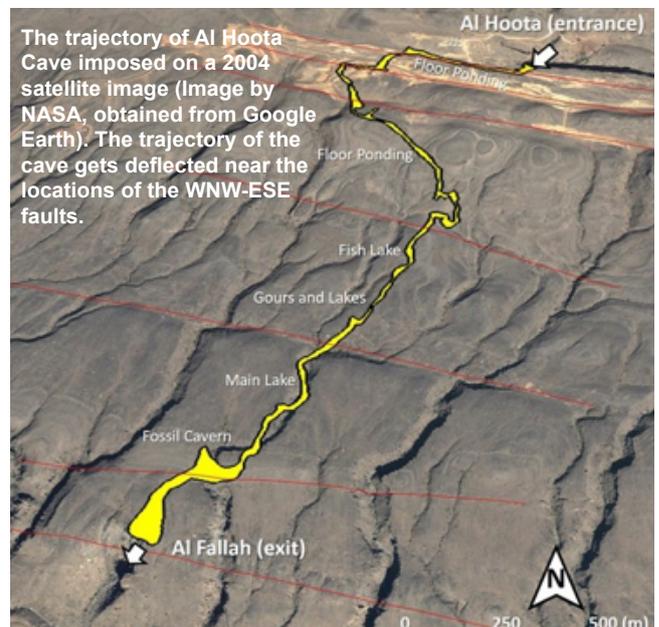
Oman Speleological Team

The caves in the Sultanate of Oman vary widely in formation, size and geometry. They are worthy of international recognition in terms of their formation, features, and potential for scientific and anthropological study. The Oman Speleological Team recently documented the caves of Oman in a book that will be published in 2021.

For recreational cavers, scientists, or anyone with a general interest in speleology, the caves of Oman should not be overlooked. They also form part of the rich history of human habitation in Oman, being used as shelter from wars, predators and harsh weather conditions, sources of freshwater, and as valuable mining resources. Petroglyphs and ancient scripts have been found in and around many of the caves, helping to preserve the history of past generations and give us a valuable insight into the mining practices and daily life.

Among the most beautiful caves in Oman are those located in Al Dakhiliyah Governorate. These mostly formed on the southern flank of the Jebel Akhdar Massif. The majority of these caves formed in thick carbonate units that deposited in shallow seas between 100 and 250 million years ago, in a time period known as the Mesozoic Era. The caves developed along massive rock fractures or faults that formed millions of years ago. The big cavities enlarged during the last thousands or millions of years, mostly during the pluvial periods of the Quaternary, when the rainfall in Oman elevated, hence promoting the reaction between acidic water and the carbonate units. These caves include Al Hoota Cave, Kittat Al Suwairat Cave, Hayl Al Diyar Cave and Amer Cave.

Al Hoota Cave is one of the most famous caves in Oman, alongside Majilis Al Jinn. It is certainly the most visited since the development of the show cave. The cave is comprised of large chambers, long rounded tunnels and narrow passages, often separated by lakes and mud pits. In most places, the cave passage seems to be above the current water table. However, during pluvial climate episodes in the Pleistocene and Holocene times, the cave was probably filled with water, as is evident from the abundant dissolved pockets in the cave roof, as well as the presence of saw-tooth profiles.



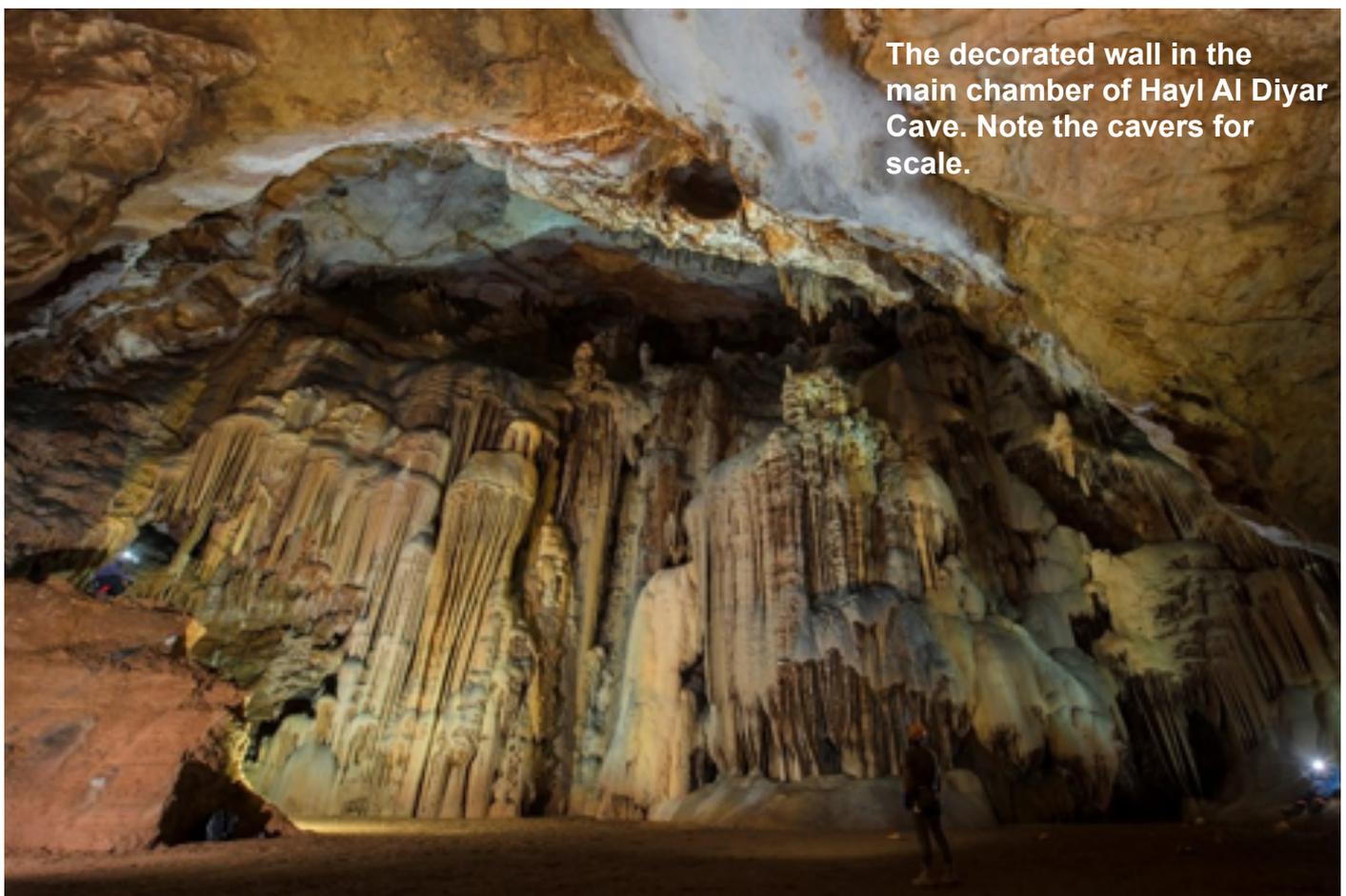
Hayl Al Diyar Cave is one of the most beautiful caves in the Jebel Akhdar region, decorated with a wonderful array of deposits. It is ideal for scientific research because of the thick layers of clay that cover its ground, and may also include fossils from ancient times, and also for the various types of speleothems that form inside the cave. It also has strong potential for touristic development, especially considering its location in the centre of a popular, developing tourist destination. A viability study is being carried out to see if the cave could be opened as a touristic or educational show cave.

Kittat Al Suwairat Cave is about 15 kilometres west of the Al Hoota Cave. Both caves share similar characteristics. The cave was first surveyed by the Oman Speleological Team in 2017. It is a very beautiful cave, decorated with a large variety of speleothems ranging from small, delicate deposits to huge stalactites. The formation of the cave consists of a series of vertical drops followed by bedding parallel passages. Current exploration has stalled at the lake in a chamber 1,000 m beyond the entrance. The lake is approximately 100 m long and 25 m wide, with a small island in the centre. The cave connects to a resurgence, known as Al Ohr Spring, which is also not fully explored. The exploration of the re-

surgence came to an end because of the very low oxygen levels beyond the resurgence lakes.

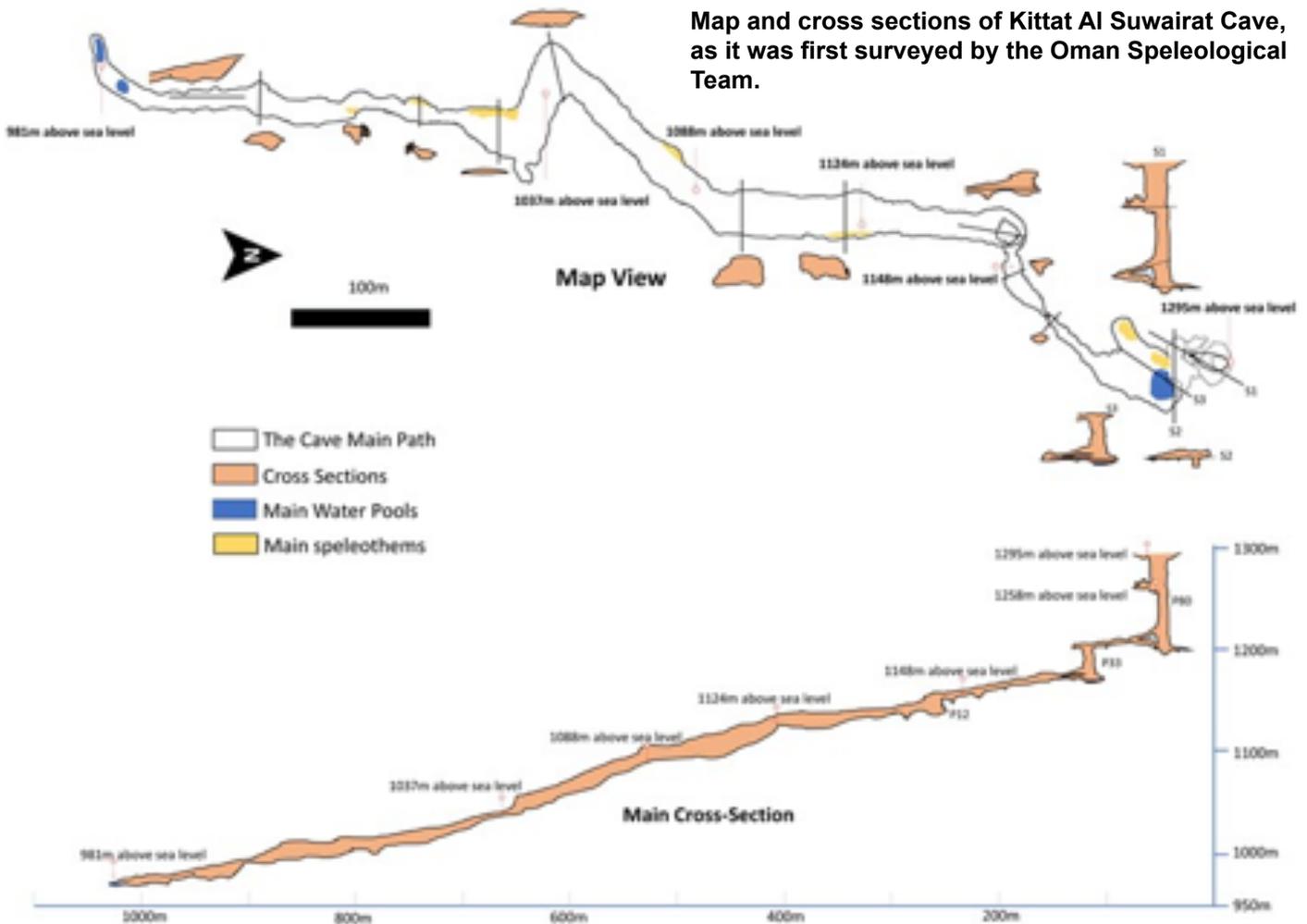
Amer Cave is located near a beautiful village in Jebel Akhdar, known as the Sawjrah. The entrance of Amer Cave is a large vertical crack which reduces to a narrow squeeze before opening up again. The cave is more than 600m long. It has a number of blind shafts and small side passages. Some of these may connect to the surface, as active air circulation is prominent in some isolated parts of the cave. Many small tubes and shafts of the cave remain unexplored. These may lead to larger openings and other cave systems. As the cave penetrates deeper into the mountain, the humidity level gradually increases, and the cave gets progressively wetter. Active calcite deposition is seen in several places, particularly at the end of the cave. During wet seasons, very thin streams of water flow down the rocks and are creating flowstones.

The caves in Al Dakhiliyah also include those that were often enlarged by humans, mainly for the purpose of mining copper. Examples of these caves include Al Tabbakhat Copper Mines in Ni-  
zwa. The mines in Al Tabbakhat are formed in a shear zone within the mantle sequence of the



The decorated wall in the main chamber of Hayl Al Diyar Cave. Note the cavers for scale.

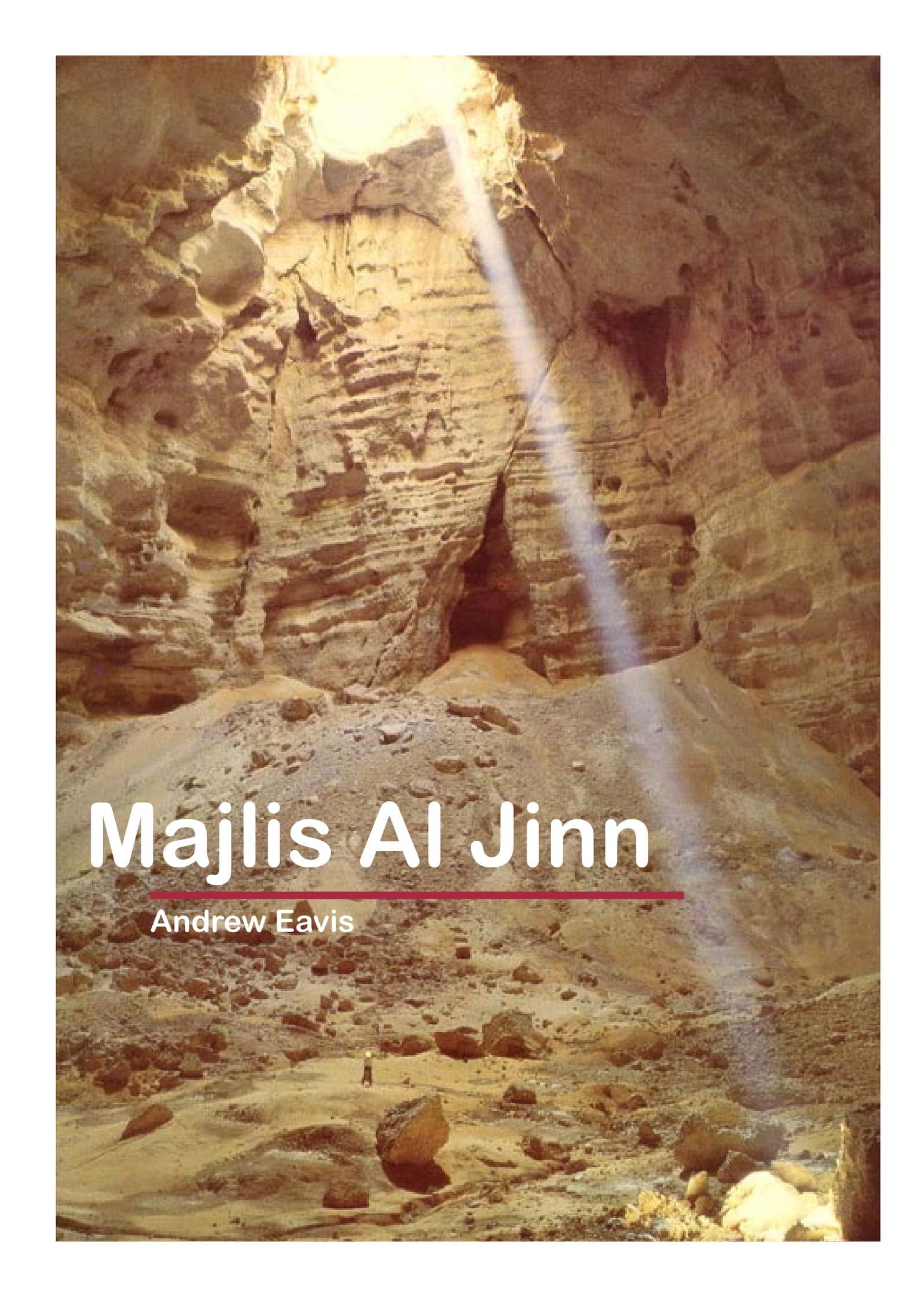
**Map and cross sections of Kittat Al Suwairat Cave, as it was first surveyed by the Oman Speleological Team.**



ophiolite. These rocks were formed in an oceanic plate in the Cretaceous Period, at least 90 million years ago, before being emplaced on Oman during the end of the period. The mineralization zones probably have late magmatic hydrothermal origins, postdating the ophiolite emplacement. The caves include various copper minerals including chalcopyrite, malachite and azurite. The mines in Al Tabbakhat represent examples of relatively large, underground, ancient copper mines within the mantle sequences of the Semail Ophiolite in the Western Al Hajar Range. Some of these mines are tens of metres long and several metres deep and provide an opportunity to understand the distribution of copper veins within the mineralized fault zones of the mantle and the crust.

## About Mohammed Al Kindi

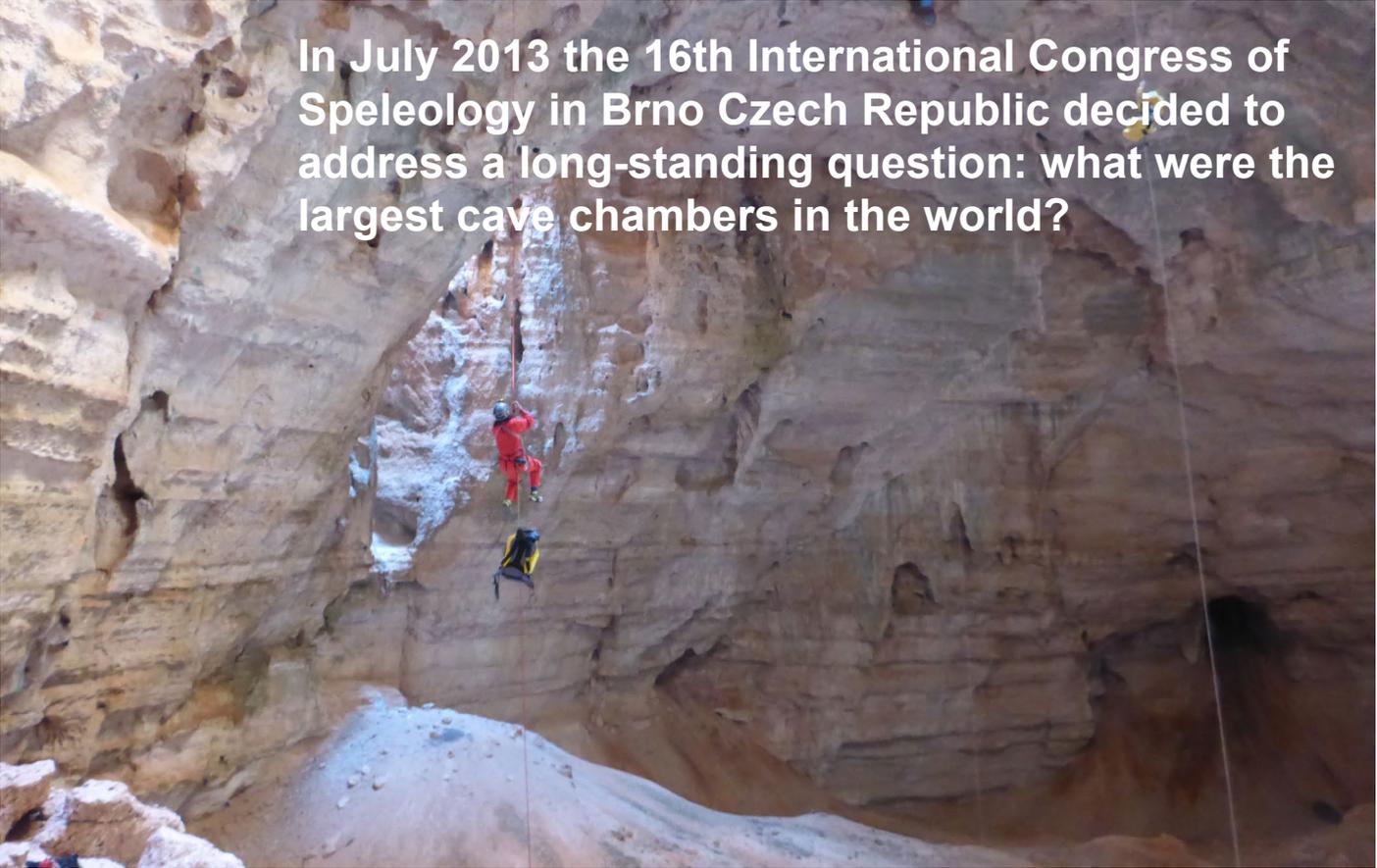
Mohammed Al Kindi is a prominent Omani geologist. He obtained his Bachelor of Science in Physics with Geology from the University of Aberdeen, Scotland, in 2003. He then completed his PhD in Geology with the University of Leeds, England, in 2006. From 2013 to 2015, he was the President of the Geological Society of Oman, and currently holds honorary membership of the society. He is a geological surveyor, and an enthusiastic fossil-hunter, cave explorer and photographer. He has worked on various geological and archaeological expeditions done for different ministries, companies, and educational firms in Oman. Mohammed currently (2020) is the CEO and founder of the Earth Sciences Consultancy Centre. Within Oman, he has had the opportunity to visit and document many geological wonders and fossil-rich areas and led a number of geological expeditions and research groups. He has published several books and scientific papers about the geology, geomorphology and archaeology of Oman. Mohammed is also a visiting lecturer in different universities in Oman.



# Majlis Al Jinn

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Andrew Eavis



In July 2013 the 16th International Congress of Speleology in Brno Czech Republic decided to address a long-standing question: what were the largest cave chambers in the world?

To answer this question lists of past surveys of recorded dimensions needed to be consulted, and the task was made more difficult by the fact that values often varied in many cases from one survey to another. The idea put forward at the congress was to survey the ten largest cave chambers—so far discovered—with the latest laser scanning technology and come up with a definitive list.

After studying the available technology, the Riegl RZ400 was settled on as the best equipment to undertake the careful measuring. The '400' stands for the 400-metre range of the laser which was deemed necessary because it was already known that some of the chambers have roof heights over 300 metres. The measuring device was purchased with a substantial bank loan, and a small team formed to travel to nine different countries which I was lucky to be a part of.

While everything was decided in theory, in practice, there were two problems. First, as surveys began it turned out some cave chambers were not as large as previously estimated and were dropped from the envisioned top-ten list. This meant other caves needed to be surveyed in their place. The second problem was two new cave chambers were discovered during the project and should be included. In the end, fourteen

cave chambers were scanned: China, Malaysia, Mexico, Iran, France, Spain, USA, Belize and Majlis Al Jinn cave chamber in Oman.

Given that this project was part-time and self-funded we estimated a timeframe of two years, but as before theory gave way to practice and it took four years.

We started the survey project in October 2013 with Sarawak Chamber in Malaysia which had previously been thought to be the biggest. Our work found that in fact, the roof is fairly low, making it still the largest by area but by overall volume second to the Maio Room in China.

After the Sarawak Chamber, we then surveyed Api Chamber also in Mulu Sarawak in Malaysia, followed by cave chambers in Spain and France and a couple of trips to China. It wasn't until November 2016, after visiting Belize, we came to Oman.

On November 16th, 2016 we arrived in Muscat, greeted by an entourage of Omani's under the auspices of Dr Saif Al Shaqsi, Executive Director and CEO of the Million Date Palm Plantation Project and of the National Field Research Centre for Environmental Conservation. We had organised the trip with invaluable help from Dr Saif

Al Shaqsi and Dr Nigel Winser, a long-time friend I had previously visited Muscat with to obtain permission.

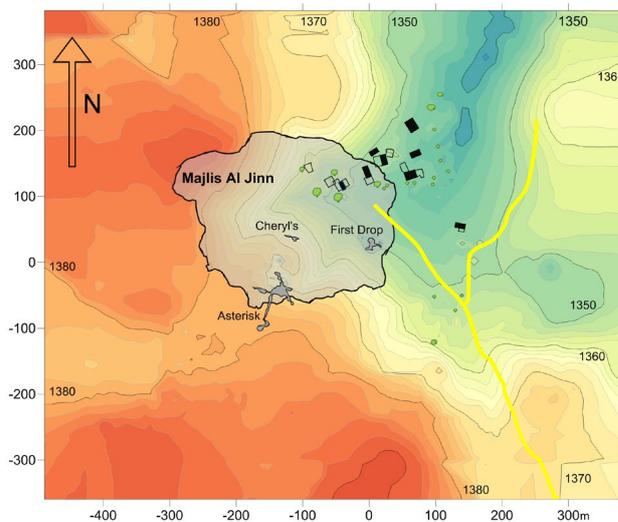
The team consisted of myself, Richard (Roo) Walters our software scanning man and Tim Allen the official expedition/team organiser. We met up with Catherine and Steve Jones, two long-time caving friends who lived in Muscat and had agreed to help with our logistics, and we also had Joe Daniels from adventure operators Twenty3 Extreme who assisted with logistics. Our project would not have been possible without all their help.

We travelled up to the limestone plateau on November 14th and immediately started surface surveying using the scanner. We were then joined by Carsten Peters, a photographer from National Geographic who had been with us throughout the project, following our activities, with the hopes of an article in the future.

When we all went underground into Majlis Al Jinn we realised what a beautiful cave it is. Wonderful beams of light shine down into the chamber acting like giant fluorescent tubes illuminating the whole of the chamber in natural light. This beautiful novelty meant for the first time we were able to not only use the laser scanner but also the camera on the scanner to take photographs in full colour.

To understand the majesty of Majlis Al Jinn it is important to understand a debate that exists about what qualifies as a cave chamber. If a space in a cave is open to the sky vertically, it is considered a shaft, if it is open to the outside horizontally it is a cave entrance. There are many examples of both entrances and shafts which are compar-

Majlis Al Jinn  
Selma Mountains  
Oman



Location  
First Drop: Lat 22° 52' 54" N, Long 59° 6' 21" E  
UTM Zone 40Q, 716025.39m E, 2531969.00 N

ble with these gigantic chambers but fall outside the definition of a chamber, and therefore outside our remit for surveying. This also meant that most chambers we surveyed were in complete darkness, and without light, we often had no idea of the scale and beauty of our surroundings.

Majlis Al Jinn is different, there are a couple of small eye holes allowing sunlight into the huge chamber. As the surface above is a very dry semi-desert, the air has a small number of particles which, when picked up by sunlight streaming into the cave, form a huge light beam that illuminates the whole of the chamber. It is a true underground chamber, and with streams of daylight, our team considered it the most beautiful of all the large cave chambers we surveyed.

After two days of surveying, we returned to Muscat on the 16th. As a result of our work, we were



able to determine that Majlis Al Jinn is currently the seventh-largest cave chamber in the world by volume.

I hope that more people will be able to experience the vast majesty of Majlis Al Jinn in the future. The cave chamber has a 100-metre abseil to get to the floor of the chamber and it is not inconceivable that an environmentally friendly lift system could be installed to create one of the most spectacular show caves in the world. Further infrastructure development in the area around the cave could provide a unique opportunity for tourists to visit one of the most beautiful caves on earth.

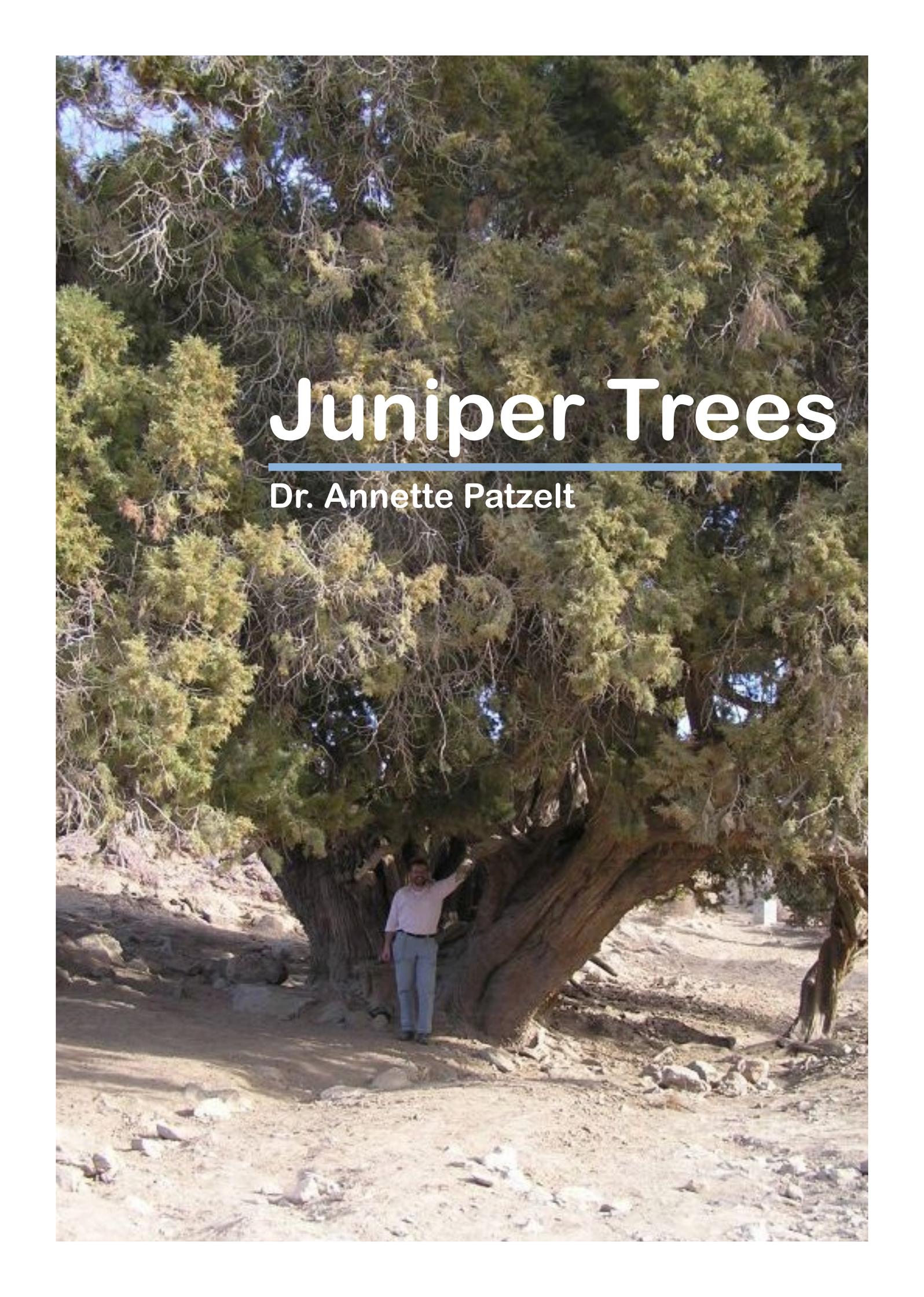
It is estimated that only ten per cent of the caves in the world have so far been explored, and for now, it seems the largest and most stunning have already been explored, but there is still a lot more exploring and surveying left to do. Regardless of future possibilities, I have a feeling Majlis Al Jinn will retain its position in the top ten cave chambers in the world by size, and certainly the top one or two for beauty.

## About Andrew Eavis

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Andrew Eavis is a world expert in caving whose experience has seen him take part in expeditions all around the world. He obtained a BSc in Mining from the University of Leeds, and a BSc in Engineering from the University of Leicester. During his studies at the University of Leicester, he joined the Exploration Society and the Caving Club and began his lifelong passion for caving with an exploration of an arctic cave in Norway. On top of a professional life spanning the National Coal Board, ownership of the Thompson Plastics Group, and directorship of Coppershop Limited, Andrew Eavis has been a part of caving expeditions across Europe, East Asia, North America, South America, and the Middle East. His vast experience includes bottoming the world's deepest cave during the 1970s and discovering with two fellow cavers the largest enclosed space in the world in Mulu, Malaysia. He is an Honorary Fellow at the Royal Geographical Society with the British Institute of Geographers and Honorary President of the Speleological Union among other positions. He continues to lecture for learned organisations including the Royal Geographical Society in London as well as at various regional meetings. Eavis is currently working on a caving project in the Mulu Caves planned to take place in October 2021.



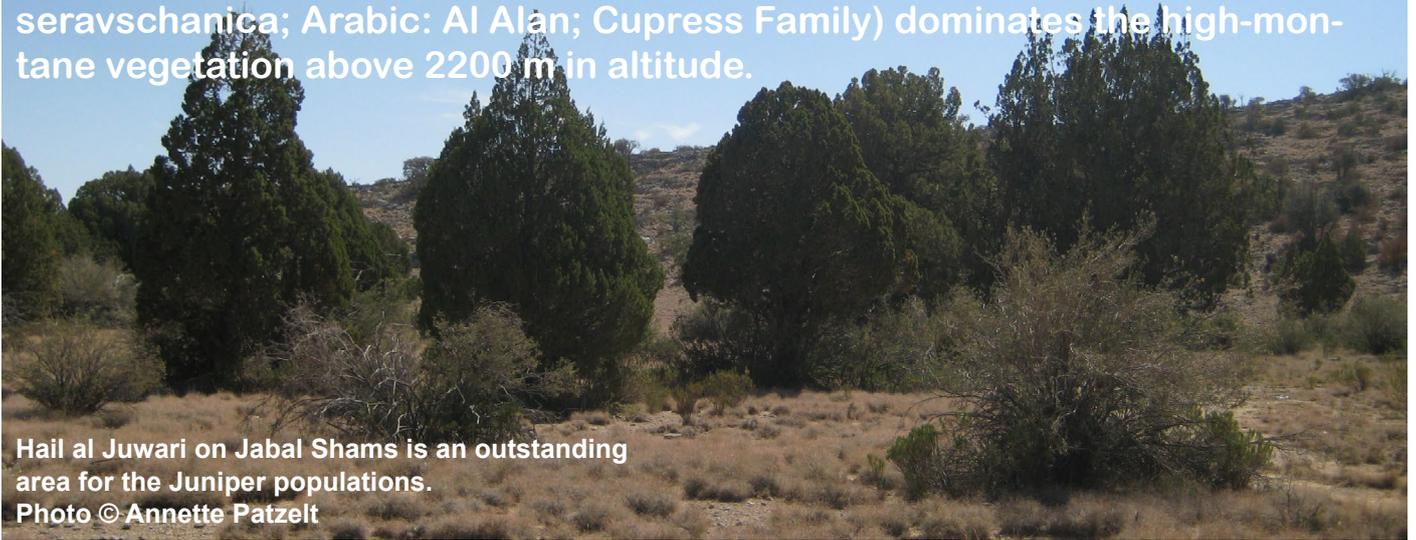
A large, ancient-looking juniper tree with a thick, gnarled trunk and dense, green foliage. A man in a light-colored shirt and blue pants stands next to the trunk for scale. The ground is dry and rocky, suggesting a desert or semi-arid environment. The sky is visible through the branches, showing a clear blue color.

# Juniper Trees

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Dr. Annette Patzelt

The Western Hajar Mountains of northern Oman are botanically rich, with a variety of interesting and beautiful native plant species that surprise and intrigue visitors while contributing to the overall biodiversity of this unique mountain ecosystem. These arid mountains represent a distinct ecological and botanical unit. The charismatic needle-leaved Juniper tree (*Juniperus seravschanica*; Arabic: Al Alan; Cupress Family) dominates the high-montane vegetation above 2200 m in altitude.



Hail al Juwari on Jabal Shams is an outstanding area for the Juniper populations.  
Photo © Annette Patzelt

In Oman, the juniper is restricted to the high areas of the central massif of Jabal al Akhdar and Jabal Al Shams and the outlying mountains of Jabal Qubal and Jabal Kawr. Juniper trees can also occasionally be found below 2200 m in cool and shady locations, but they only thrive in the cooler climate of the high mountains.

The Juniper trees can reach up to 12m in height, dominating all other tree species in the vicinity. The Juniper tree forms open woodlands together with the wild olive (*Olea europaea* subsp. *cuspidata*; Arabic itm) and but trees (*Sideroxylon mascatense*). This Juniper species occurs in Oman, Afghanistan, Iran, Kazakhstan, Kirgizstan, Pakistan, Tadzhikistan, Turkmenistan, and Uzbekistan. The Omani population represents its southernmost point of global distribution, and it is isolated from all other populations by the Gulf of Oman. The oldest Juniper specimens in Oman are at least 783 years old; the real age is highly likely to be older, estimated to be up to 1000 years. They are amongst the oldest trees of the Arabian Peninsula.

The trees are used by local people: traditionally, fresh, or dried and powdered leaves of the Juniper trees are boiled, and the solution is used to treat stomach problems. Moist aromatic powdered leaves are used as perfume for rooms, and they are mixed with powdered leaves of the Christ thorn tree for use as shampoo. The fruits are used to make a necklace.

### **An Exceptional Flora**

The montane and high-montane vegetation of the Hajar Mountains show strong links to the mountain vegetation of southern Iran, Iraq, Afghanistan, and Pakistan (Baluchistan), and it is enhanced by the remarkable relict species and endemic plant species that occur only in the northern mountains of Oman.

The Juniper woodland is characterised by an exceptional flora with a high number of endemic species. The herb and shrub layers are characterised by the presence of conspicuous species, such as the aromatic endemic 'ja'ada' (*Teucrium mascatense*). Most accompanying smaller trees and shrub species have a strict preference for colder and wetter conditions and are not found below 2000 m, for example the common shrub 'mintin' (*Daphne mucronata*) and the beautiful Yellow Himalayan Honeysuckle (*Lonicera hypoleuca*). The occurrence of such species underlines the importance of the mountains of Northern Oman as a refuge for ecologically restricted species, only found at high altitudes.

### **A Threatened Species**

The Juniper tree is a flagship species for conservation efforts. It is an extremely slow growing tree, with an average growth rate of less than half a millimetre per year. Even "young" Juniper

trees in the Western Hajar Mountains are likely more than 50 years old, although very few trees of this age group have been observed by the author over 23 years of field research. It is difficult to determine the age of Juniper specimen, but as a rule of thumb, if a stem has a diameter of about 5 cm, the specimen is approximately 80 years old, although it could be much older. It may take decades before a Juniper plant is mature enough to produce fruits. Unfortunately, in all Juniper woodland in Oman, no regeneration of trees can be observed.

The health status of many Juniper trees is deteriorating, and most trees show substantial signs of dieback. In many areas, an estimated 80-90% of the trees are seriously affected, dying or already dead. The decline of the Juniper trees in recent decades can be attributed to five causes:

- Temperature-induced dieback caused by the rising global temperatures due to climate change.
- Drought periods combined with very long rejuvenation periods.
- The arid phase in the climate of Arabia causing dieback through a long-term increase in aridity over the last few thousands of years.

- Overgrazing by livestock.
- Cutting of branches, using the wood as firewood and removal of topsoil around trees by people.

In particular climate change is increasingly thought to be affecting the high-altitude vegetation of the Oman mountains. Winter minimum temperatures have increased considerably in the last few decades, while precipitation amounts have substantially decreased. The effects of climate change pose a severe threat to the survival of the Juniper and other species found at high elevations.

From birds and insects to bats and birds, the Juniper trees provide a canopy and a habitat for many species of wildlife. The fascinating trees have been important for local people for millennia. The *Juniperus seravschanica* woodland community is unique to Oman and it is of critical importance to preserve the trees and their habitat to ensure the long-time survival of this precious yet fragile ecosystem.



Most Juniper trees show substantial signs of dieback.  
Photo © Annette Patzelt.

## About Dr. Annette Patzelt

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Botanist and plant ecologist Dr. Annette Patzelt is the leading authority on flora and vegetation of Oman.

She was the foundational director at Oman Botanic Garden, as part of the senior management team for 15 years. As assistant professor and researcher, she taught botany at Sultan Qaboos University (Oman), and at the Technical University of Munich and the University of Freiburg (Germany).

Annette's professional expertise spans the fields of botany, taxonomy, plant ecology and restoration biology to horticulture, education, ethnobotany, interpretation and staff management. Her project management experience includes assessing pre-concept designs, masterplans and detailed designs, tender stages, and supervision of construction onsite.

Annette has led the development of the world's largest documented collection of Arabian plants, in addition to establishing a regional herbarium and a seed bank. She is an expert consultant on botanic gardens, plant conservation, habitat restoration, and botanical interpretation and education for sustainable development projects.





# BLOCK 61

A relationship of mutual growth

bp

There are some relationships that just get better with age, that deepen as each side learns more about the other. Such is the relationship between bp and the Sultanate of Oman – a partnership almost a century in the making.



**T**he Al Dakhiliyah Governorate is in a strategic location between Muscat and the major oil and gas concession areas in the northern part of Oman - making it a substantial hub for operators to pursue development opportunities in the middle of the country's deserts.

### **Developing Block 61**

Block 61, which comprises both Khazzan and Ghazeer fields, is in the middle of the Al Dakhiliyah and Al Dhahirah governorates. It is one of the Middle East's largest tight gas accumulations, in which gas lies at depths of up to five kilometres in narrow bands of hard, dense rock. When bp started the development of Block 61 back in 2007, it was nothing but a great land of desert but with an estimated 10.5 trillion cubic feet of recoverable gas resources.

Using technologies developed in its US operations, in 2007 bp started what would become the largest onshore seismic survey of its kind, gathering vital reservoir data from a 2,800 square kilometre area in just five months. The study was followed by a three-year extended well test, in which gas and condensate were recovered rather than flared, which proved that Khazzan was indeed a viable reservoir.

By 2013, bp and Oman had signed an agreement to proceed to full-field development. First gas from Khazzan was delivered at the end of 2017, followed by first gas from Ghazeer in 2020.

Block 61 has evolved from a remote desert location into a small city with new roads, a water treatment plant, waste facilities, accommodation blocks, kitchens and a clinic that, in 2019, won the Ministry of Health's Excellence Award for the best private first aid clinic. bp recently also planted around 1,800 trees on Block 61 as part of the Environment Authority's 10 million trees in 10 years initiative.

The size of the site is now equivalent to the whole of Greater London.

### **Supporting Al Dakhiliyah's Local Economy**

bp is proud to support the sustainable development of Oman's economy, which is done through three main strategies: supporting local business growth and overall economic productivity, encouraging the development of Omani skills and capability; and generating employment and training opportunities.

In the Al Dakhiliyah governate, bp supports the hiring of local people, rental of lands, storage and

Image: Khazzan first gas



buildings, and use of services such as catering.

In 2020 bp celebrated the first successful well stimulation on Block 61 by local contractor Abraj Energy Services. The well, located on the Ghazzer field, also represented one of the largest stimulations completed by Abraj. The company used its facilities in Wilayat Adam to assemble the equipment required for this job.

Another contractor, Mohammed Al Barwani company, provides coil tubing and slick line services from its base in Wilayat Nizwa.

### **bp & Oman: There's energy in this partnership**

*“As home to our pioneering and world class Block 61 development, the Al Dakhiliyah governorate is an extremely important area for us. As part of our commitment to Oman and the areas in which we operate, it's really important for us to provide our support to local economies and society wherever we can. Our relationship and involvement in the governorate has continued to grow over the years and we're proud to play a role in the area's future prosperity.”*

**President, bp Oman Yousuf Al Ojaili**

### **Supporting Al Dakhiliyah's Society**

bp's social investment programme in Oman is a unique model that seeks to support local communities' development. Since its launch in 2014 the programme has benefitted over 94,000 people through 106 initiatives.

Among those programmes are two dedicated to the local community in Nizwa, at the heart of the Al Dakhiliyah governorate – the educational cinema hall and the engineering village.

In 2019, bp funded the establishment of an educational cinema hall at the Nizwa Science and Technology Centre with seven-dimensional technology – the first of its kind in the Sultanate.



Image: 7D Cinema in Nizwa

The Engineering Village was launched in Nizwa back in 2016. The region's first specialised institute, it supports the evolving needs of the technology sector and provides the tools and technical workspace needed to take skilled industrial workers' capabilities to the next level. Training programmes include electronics, computer-based programming, mechanics, micro-controllers and robotics.

bp also supported Nizwa hospital in 2020 as part of the combat against Covid-19, funding an entire ICU department and donating health equipment.



**Students hiking in Jabal Akhdar as part of Outward Bound Oman programme.**

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