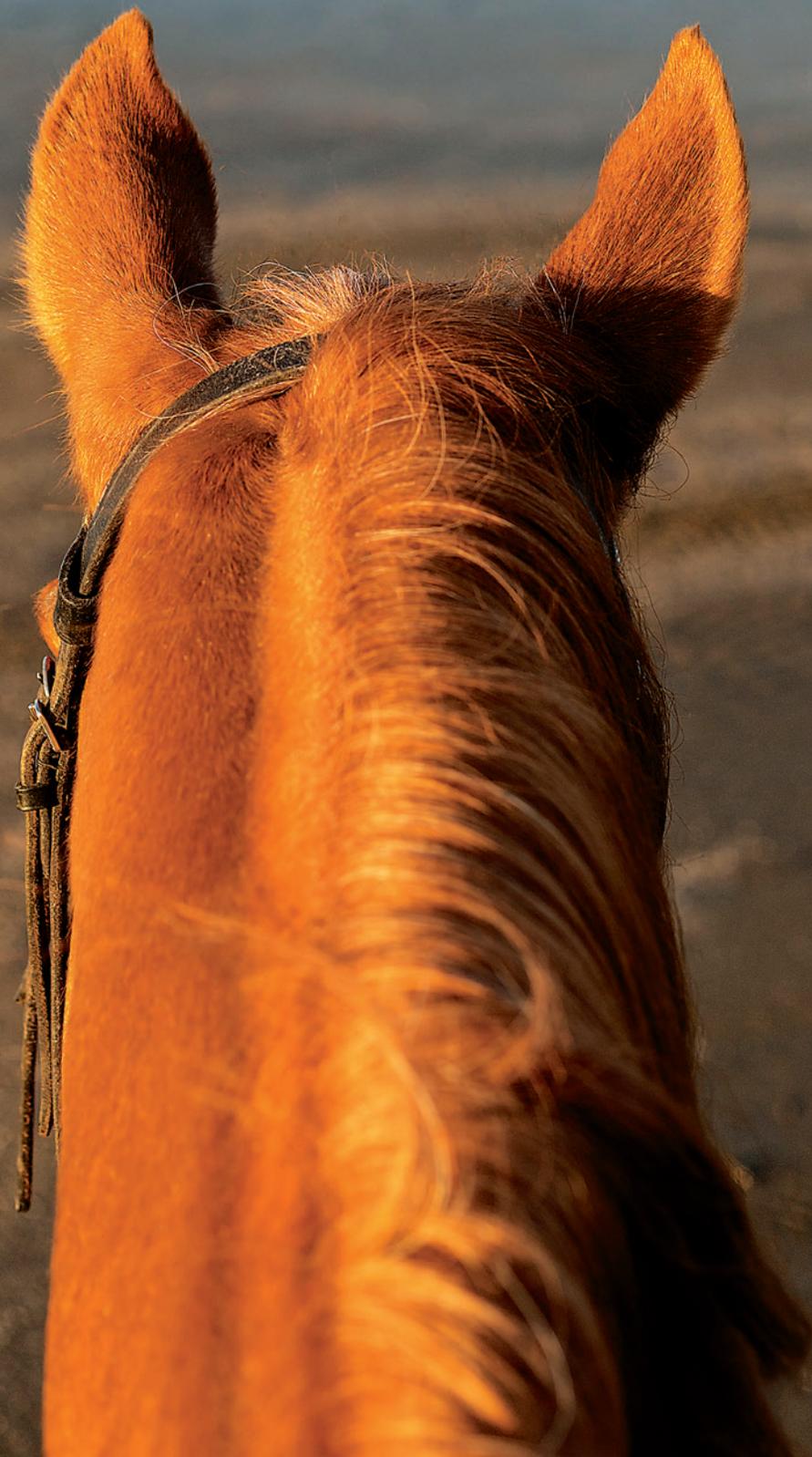


MARCH APRIL 2023

AramcoWorld





6 The Return of the Karabakh Horse

Written by **Tristan Rutherford**
Photographed by **Rebecca Marshall**

Strength, speed and a lustrous coat made the Karabakh horse a symbol of status, power and beauty in its native Azerbaijan, and beyond. Wars over the past century nearly eliminated them, but now breeders are steadily restoring their numbers.

16 The Mysteries of the Mustatils

Written by **Graham Chandler**
Photographed by **Talal Afandi**

In northwest Saudi Arabia, scattered across an area twice the size of Portugal, archeologists and aerial surveyors have identified more than 1,000 roughly built, low, rectangular stone structures that date back 7,000 years to an era when today's deserts were savannas. These *mustatils*—"rectangle" in Arabic—have been long-known to regional tribes, and in 2018 archeologists began to investigate and excavate. Discoveries of animal bones and horns point toward ritual purposes. The great number of mustatils may be evidence of population and social organization. But why are there so many—and in so many different places? While no two are quite the same in length and width, all are close in height and shape. Amid more questions than clues, archeologists continue to dig.

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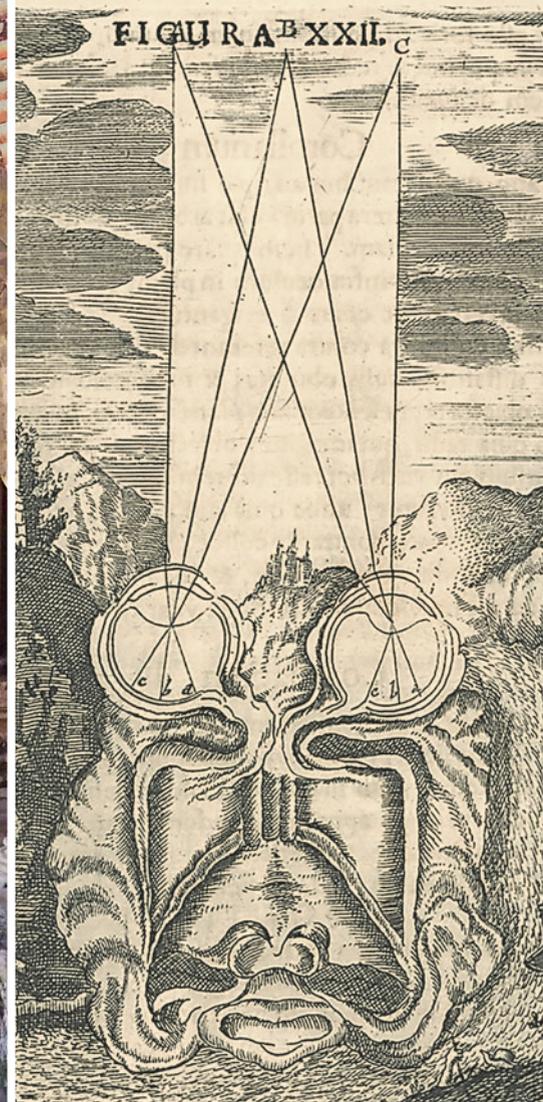
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We distribute *AramcoWorld* in print and online to increase cross-cultural understanding by broadening knowledge of the histories, cultures and geography of the Arab and Muslim worlds and their global connections.

FRONT COVER Brushed by sunset on the shore of the Caspian Sea, the burnt-butter-gold coat of a Karabakh shines as brightly as the breed's storied history and hopeful future. Photo by Rebecca Marshall.

BACK COVER In the church of Santa Maria dell'Ammiraglio, one of UNESCO's nine World Heritage Sites of Arab-Norman heritage in Palermo, a mosaic depicts a symbol common also in early Arab iconography: a tree of life. Photo by Richard Doughty.



24 Palermo's Palimpsest Roads

Written by **Ana M. Carreño Leyva**
 Photographed by **Richard Doughty**

As the Mediterranean Sea's largest and most central island, Sicily has lured invaders, traders and travelers since antiquity, and each one has left its layers of legacy. From the ninth to the 12th century, Arabs and Normans dominated the island. Along its western coast, in its capital Palermo, the Arab-Norman royal court of King Roger II rose to become one of the most influential seats of power of its time. Since 2015 the UN has recognized a set of nine buildings whose syntheses of Byzantine, Arab and Norman designs epitomize the best of a time whose multiculturalism remains a foundation for Palermo today.

34 INGENUITY AND INNOVATIONS 2 Ibn al-Haytham: Testing is Believing

Written by **Lee Lawrence**

Joining math, physics and real-world tests, Abu 'Ali al-Hasan ibn al-Haytham, who worked in 10th-century Iraq, pioneered not only optics but also empirical science itself.

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FIRSTLOOK

Rain in Fayoum

Photograph by Hesham Elsherif

I took this photo during a rainy day in November 2018 from the window of my family home in Fayoum, Egypt, located about 100 kilometers southwest of the capital. It hardly rains but a few times in the year in most parts of Egypt, and when it does, it is always something special, bringing joy and happiness particularly for the local children.

That day I was in my room when I noticed it raining. I looked out the window and saw children running out of their homes to play in the rain. I quickly reached for my camera and headed to the window to capture this scene. The children were jumping for joy as they ran through the rain while singing traditional Egyptian songs. Some of them even tried catching raindrops on their tongues. Women in the background were trying to make their way home quickly and not get wet.

I'm happy I was able to capture this moment. It reminds me of my own childhood and how I use to play as a child. I take photos like this because it shows how simple a joyful life can be.

—Hesham Elsherif

 @hesham.a.elsherif



FLAVORS

Fattoush Salad

Recipe and photo by
Yasmine Elgharably and
Sheweker Elgharably

This classic Middle Eastern salad is made distinctive—and more substantial—by the addition of torn-up bread.

Traditionally, it's a great way to use up yesterday's flatbreads, but we use gluten-free crackers here for a slightly lighter recipe. Sumac and mint are essential flavors for fattoush, and we, like many others, love to add sweet-sour pomegranate molasses to the dressing. To combine the olive oil, syrupy molasses and lime juice perfectly in no time, take our tip and shake the dressing ingredients together in a sealed glass jar.

(Serves 4)

3 tomatoes, deseeded and cut into chunks

3 small cucumbers or 1 large cucumber, sliced

½ red bell pepper, deseeded and cut into squares

½ yellow bell pepper, deseeded and cut into squares

Handful mint leaves

Handful black (preferably Kalamata) olives, pitted (optional)

Gluten-free crackers, broken into 10 to 12 medium-sized squares

For the dressing:

1 garlic clove, minced

3 limes, juiced

1 teaspoon pomegranate molasses

3 tablespoons extra-virgin olive oil

1 teaspoon sumac

Salt and pepper

1 red onion, thinly sliced

Add all the dressing ingredients except the onions to a glass jar, seal the lid, and shake well. Add the sliced red onions.

Rinse the olives to get rid of any excess brine, and pat dry with kitchen paper. Mix all the vegetables, the mint leaves and the olives in a large bowl.

Give the dressing another shake and drizzle over the salad. Scatter over the broken crackers and serve.

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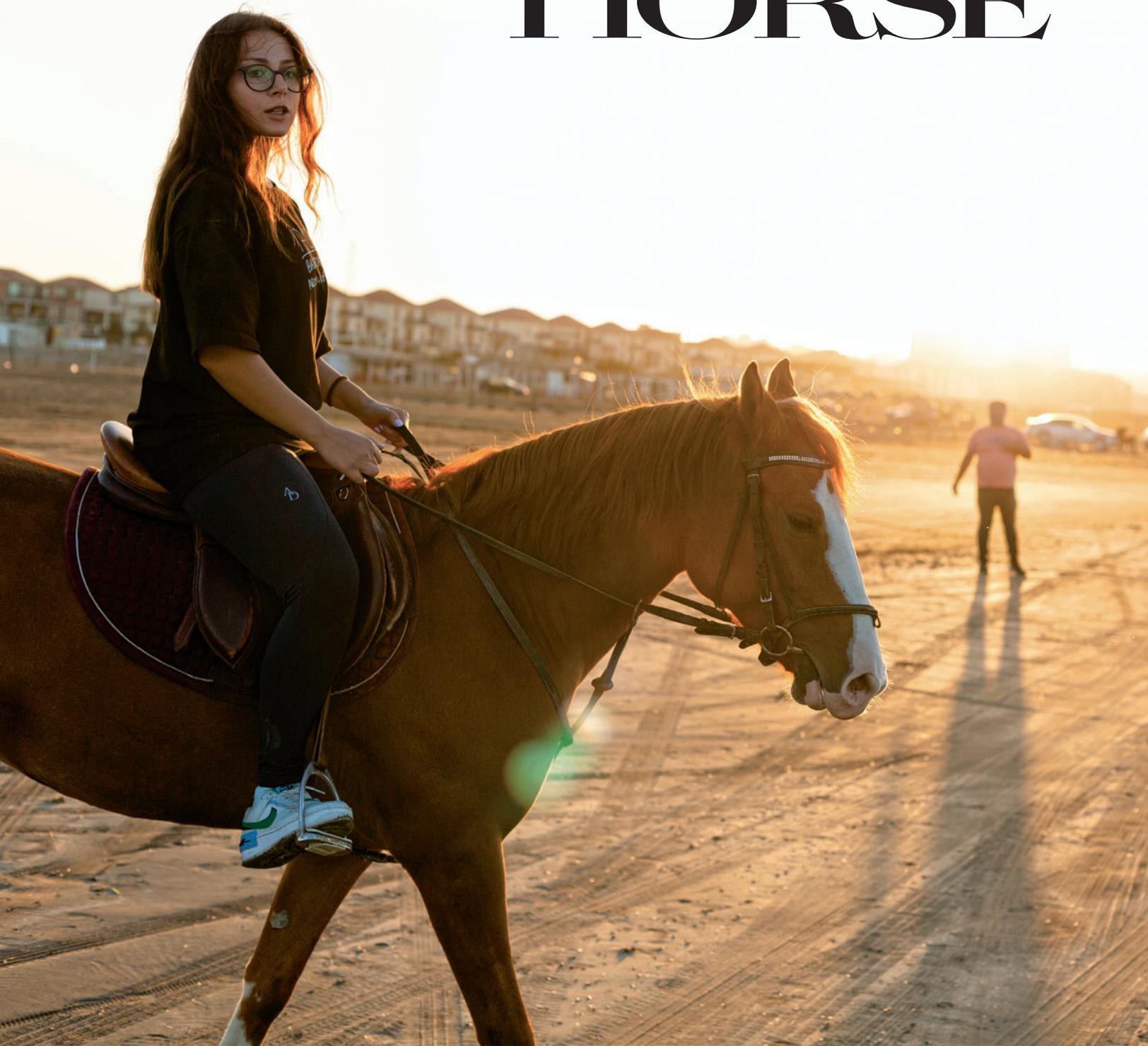
Bilhana: Wholefood Recipes From Egypt, Lebanon, and Morocco

Yasmine Elgharably and
Sheweker Elgharably,
AUC Press, 2021.
aucpress.com

Yasmine Elgharably is a self-taught home cook with a business background and a passion for Middle Eastern food. She is a cofounder of cairocooking.com, a recipe-sharing platform helping cooks across the Middle East. She is also based in Cairo. **Sheweker Elgharably** is a certified holistic health coach and culinary nutrition expert based in Cairo, Egypt. She completed the Integrative Nutrition Program and the Culinary Nutritional Program at the US-based Academy of Culinary Nutrition. Originally an established interior designer, after seeing how small food and lifestyle changes have a huge impact on health, she wanted to help people strive to live healthier and happier lives. Shewekar is also the founder of #HealthyRocks.



THE RETURN OF THE
KARABAKH
HORSE



As director of the Agjabedi Horse Center in the highlands of western Azerbaijan, Elman Qadirov starts each day at his desk under the gaze of an artist's depiction of a spellbindingly beautiful horse with a radiant, golden coat the color of burnt butter. The horse is a Karabakh. Outside his window Qadirov can see some of the approximately 300 purebred Karabakhs currently being reared in the center that includes a laboratory, an indoor riding area and even a horse spa.

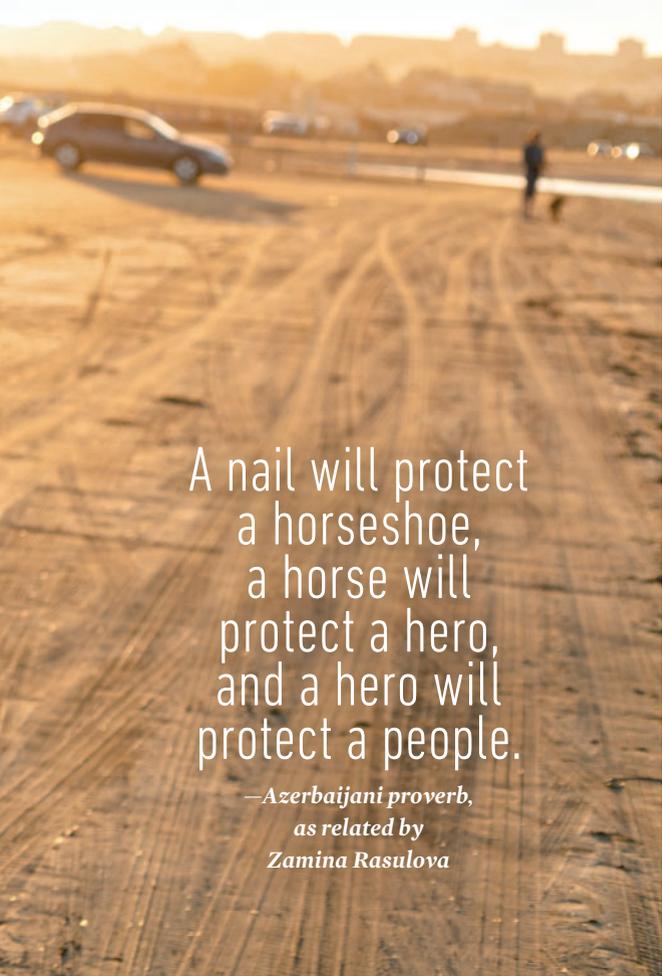
The high-tech center opened in 2018 for one reason: Just a quarter century ago, the Karabakh breed, native to the central Caucasus and emblematic of its equine heritage, was on the brink of dying out.

Written by

TRISTAN RUTHERFORD

Photographed by

REBECCA MARSHALL



A nail will protect
a horseshoe,
a horse will
protect a hero,
and a hero will
protect a people.

—Azerbaijani proverb,
as related by
Zamina Rasulova

The Caucasus is a post-card-picturesque region known mostly for its mountains that reach up to 5,000 meters, but its subtropical forests grow all the way down to the shores of the Caspian Sea. As a trading nexus on the Silk Roads, horses carried silk and spices through the region for centuries, Qadirov explains.

At the same time, the crosspollinations of commerce and culture bred conflict, and in the nation that today borders Russia, Armenia, Georgia and Iran, the Karabakh horse has also borne heavily the burdens of war.

The story of the Karabakh started on the other side of the Caspian, on the grasslands of the Turkmenistan steppe. Here the Turkoman horse—extinct now for more than 1,000 years—had adapted to the steppe's rocky, barren terrain with tough hooves and an extended back for long-distance riding. The Turkoman gave rise to Turkmenistan's famously sturdy, nimble Akhal-Teke breed that similarly could cover great distances. One of the oldest of the world's 200-plus horse breeds, and with a history stretching back at least 1,000 years, the Akhal-Teke is a prominent parent breed of the Karabakh.

The Karabakh's home in the Caucasus meant the breed carried these steppe characteristics to a land slashed by snowcapped mountains and pockmarked with deep valleys and lakes. Its tight, muscular frame and slender limbs gifted Karabakhs superior abilities both to climb mountains and gallop through flatlands at pace. The horses adapted also with uncommonly large nostrils that can dilate in warm weather and constrict in the mountain air more than other breeds. According to Qadirov, this evolution allows the Karabakh to climb up to where even a truck might seize up in the thin air and cold. So exceptional were the best Karabakhs that, up to three or four centuries ago, they were one of the top gifts bestowed by regional khans.

The breed was certainly in its current physical shape and form 250 years ago, in the late 18th century, when the Palace of Khans was constructed in the city of Shaki, which lies in the mountains 150 kilometers north of Agjabedi. This former royal residence, today inscribed as a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO), was built without using a single nail. It took two years to build, but another six to decorate: Every wall is painted with multicolored scenes and patterned frescoes. One salon displays a hunting scene with 140 horses galloping around the entire room, and among them, the Karabakhs are recognizable by their glowing coats in shades from light cinnamon to burnt gold.

"Karabakh horses were a symbol of power and beauty," says Zamina Rasulova, a palace guide since 2004. "The unseated horses in the palace frescoes depict Karabakhs that were given as gifts from Azerbaijani khans, usually following a peace agreement," she continues. The breed was so integral to regional culture that if a Karabakh's owner died, the horse was declared "a widow." If authorities wished to punish somebody, they would cut the hair of their Karabakh.

Buta, an 11-year-old purebred Karabakh mare, trots along the shore of the Caspian Sea near Baku, Azerbaijan. In the saddle is Lala Aghayeva, a recreational rider and member of the Baku Golden Horse Club.



At the foot of the Caucasus Mountains, Shaki, a city of about 70,000 residents in northern Azerbaijan, was once an important Silk Road trade hub. The supplies carried, pulled and delivered by horse generated wealth for the city and the region during the Middle Ages, and no horse was better-bred for long journeys, heavy loads and varied terrain than the Karabakh.

the 300-room caravanserai that sits a few minutes' walk from the Palace of Khans. Until the 1970s, Shaki residents still reared silkworms inside their handsome homes, which were for the most part built from river stones washed down from the mountains.

The Silk Road required horses that could trot tirelessly across any topography. "We have needed horses since ancient times," confirms Mammad Ahmadov, director of the Palace of Khans. Craftsmen came by horse with goods to sell, and for those who could afford them, Ahmadov adds, Karabakh horses were preferred to venture into the forest and mountains to help bring wood for heating. In addition to its other qualities, the Karabakh's svelte coat is surprisingly warm.

Rasulova, whose book, *The Notes of a Palace Guide*, was published last year, points also to Azerbaijani proverbs, many of which, she says, refer to horses. These include sayings such as, "A horse is the wings of a man," "A good horse adds beauty to any hero," and "A nail will protect a horseshoe, a horse will protect a hero, a hero will protect a people."

The Karabakh horse also lends its name and silhouette to Azerbaijan's current football league champions Qarabağ Futbol Klubu. (The country's premier women's league champion is currently the team from Shaki.)

Trade along the Silk Road made Shaki wealthy. Beginning in the first century CE, horses and carts loaded with metalwork, carpets and spices were carried to and from mainly China and what are now Uzbekistan and Pakistan. Caravans tied up inside

What Is a Karabakh Horse?

The Karabakh is a mountain saddle breed with links to the now-extinct Turkoman horse and the Akhal-Teke breed. Karabakhs originate from the Nagorny Karabakh region of Azerbaijan, and they are known as the "golden horse" due to the shades of their coats that range from light cinnamon to burnt gold. The Karabakh's frame is muscular, and its limbs are slender, which provide it superior abilities to climb mountain trails and gallop at speed through rocky flatlands.



LOWER, LEFT AND RIGHT In Shaki's 18th-century Palace of Khans, Mammad Ahmadov, director, and Zamina Rasulova, guide and author, point out the prominence of the Karabakh horse throughout frescos by architect and master painter Abbas Qulu. These include the hunting scene, **ABOVE**, whose full length depicts some 140 horses as well as people whose variety reflect the region's historic role as a nexus of trade and powers. The Karabakhs, they point out, are recognizable by their golden color as well as the bejeweled blankets that attest to their value. **LOWER, CENTER** Elman Qadirov, director of the Agjabedi Horse Center, says the Karabakh is made for the rugged region because "their size and muscular body allows them to move comfortably through the mountains."

Every year in Shaki, Ahmadov continues, "we host *çövken* games where we use Karabakhs." In 2013 UNESCO inscribed *çövken* (chov-KEHN), a hurly-burly ancestor of polo, onto its list of intangible heritage. But unlike polo, in which players wear riding helmets, *çövken* players wear traditional lambswool Astrakhan hats. From the saddle they wield wooden mallets big enough to thwack a ball about the size of a football. It's a high-velocity, 45-minute contest that would, Ahmadov maintains, tire most other breeds in minutes.

Paintings depict the game being played in the Caucasus as far

"Karabakh horses were a symbol of power and beauty."

—ZAMINA RASULOVA

back as the ninth century CE. The *Book of Dede Korkut*, a 14th-century Turkic-language epic that gathered tales from Central Asia, also described a stick-and-ball horseback game with the words, "Your lovely

back can take one to its goal. I shall not call you horse, but brother."

Qadirov, at the horse center, once also served as an umpire in the Shaki *çövken* tournaments, and he is author of today's official rules of the game. The drive from Shaki to Agjabedi winds through the kind of high hills in which Karabakh horses thrive. Forests of mulberry trees, the leaves of which form the sole nutrition for silkworms, line the route. Each successive village





Stable worker and jockey Cafar Cafarzada runs with stallion Qalam at the breeding farm in Agjabedi. With as few as 50 Karabakhs left in existence at the turn of the 21st century, each horse remains vital to the breed's future: Karabakhs are now protected by law and the breeding programs receive official support in Azerbaijan. **LOWER** Agjabedi Horse Center master jockey Orucov Natig says that with numbers of Karabakhs on the rise, the recent lifting of the ban on selling Karabakhs will further sustain the breeding practices that to date have proven so successful.

specializes in a different fruit, from grapes and plums to apples and apricots. The road follows a river the color of Azerbaijani tea, and its waters host carp that is served in roadside restaurants.

Qadirov explains that the game plays to the Karabakh's strengths to turn rapidly and block an opponent as their small head and slender legs grant them not only unrivaled endurance but also speed. The record average across a 1-kilometer course is 52 kilometers per hour, which compares to most other breeds' top gallops that tick in between 40 to 48.

in 1993 when another conflict broke out among newly independent, formerly Soviet states of Armenia and Azerbaijan.

Qadirov explains how the surviving Karabakhs narrowly escaped. "I was born and raised in Aghdam, a flat area at the foot of the mountains, where the Karabakh horses are from," he explains, where his uncle was "an important man" at the Aghdam horse farm. Together with five colleagues, the team drove nearly 400 horses across open fields to escape shelling. The journey to

It was in the 19th century that the breed began to attract interest from outside the Caucasus. In 1823 a British company purchased 60 purebred mares from the last Karabakh owned by a khan. In 1867 a stallion, aptly named Khan, won a silver medal at the Universal Exposition in Paris.

Yet increasing unrest in the Caucasus began to curtail the stock. The rising power of Russia to the north demanded large, pack horses to carry goods across its vast distances, such as the Don, of which the Karabakh is a parent. But a century ago the Karabakh was decimated during battles between the Soviet and anti-communist forces. It was diminished further





Stable workers exercise horses Siyazam, at center, and Qalam, at right, in Agjabedi. According to the Karabakh Foundation, Karabakhs can be very fast: In 2004 a Karabakh named Kishmish set two speed records by running 1,000 meters in 1 minute 9 seconds and 1,600 meters in 1 minute 52 seconds. **LOWER** Getting a kiss while guiding the stallion named Şafron back into his stable, trainer Panah Allahverdiyev says that since he was a child he wanted to work with horses, and now he trains others to ride and care for the horse.

a safe space in Agjabedi took several days. Not one horse was lost in the escape, although it required the men to leave most of their personal possessions behind. Yet tragically wartime food shortages ravaged the herd, and by 1997 as few as 50 purebred Karabakh horses remained.

Today the breed appears to have found a haven at the Agjabedi Horse Center. Written on a plaque in front of each stable is each horse's name, parentage, age, gender and coat color. Many

Karabakhs have a white, diamond-shaped mark on the forehead, as if they have been struck by lightning. When trainers walk past their comfy stables, the horses regularly lean out to give him or her a kiss. "I love them," says Panah Allahverdiyev, an Agjabedi graduate who now trains other riders. "I wanted to be a trainer since childhood."

From the stables, jockeys Cafar Cafarzada and Kurkan Huseynov trot their horses Qalam and Siyazam to the adjoining

racetrack. Both riders are proud to perform a walk, trot, canter and gallop to show off "our heritage, our blood," says Cafarzada. The walking gait hits a 1-2-3-4 beat as the horse uses its slender legs independently. The trot pairs limbs diagonally to pick up speed. The canter is quicker still until the horses blister forward with three legs off the ground at once, propelled alternately by a single rear leg.

Then the horses gallop. For the briefest of moments in each pounding, four-beat gait, all their legs are suspended in the air after every limb has powered forward. The sight is mesmerizing in its force; in the saddle, the jockeys claim, the ride is undulating, wildly exciting and not at all smooth like an English trotter. Qalam and Siyazam thunder past in





ABOVE Sultan, a 4-year-old Karabakh stallion, is exercised by trainer Javid at the Baku State Hippodrome stable in Azerbaijan's capital. **RIGHT** This 1956 photo shows Zaman, the stallion gifted that year to the United Kingdom's Queen Elizabeth II. The jockey is Ali Tagiyev, grandfather of trainer and Baku Golden Horse Therapeutic and Educational Center founder Sarxan Tagiyev, shown **OPPOSITE TOP AND LOWER** carrying on his family tradition of breeding and training Karabakhs and educating people about them.

a cloud of dust before halting with whinnying cries, their golden coats shimmering in the sun like liquid gold.

Qadirov explains how when Azerbaijan was part of the former Soviet Union, the Soviet state safeguarded—and monetized—Karabakh DNA beginning in the 1920s, but collectivization meant horses were taken away, too, in great numbers. “They left only 87 pureblood horses in the yards of people in different villages,” he explains. In 1934, Soviet scientists gathered more Karabakh horses in Shaki to make the best breeding selection. “Each summer, some of the herd would climb toward the top of the Caucasus mountains,” and the offspring were sold across Europe and Russia.

Orucov Natig, a master jockey and trainer at the Agjabedi Horse Center, has worked with Karabakh horses since 1977. During the Soviet period about 50 Karabakh horses were sold abroad each year in exchange for much-needed US dollars, he says. In the 1990s overseas sales were halted, as the Karabakh herd dwindled.

Today there is a slow lift on the ban of Karabakh sales. After much breeding, about 30 horses are sold per year within Azerbaijan, Natig confirms. The starting price of a Karabakh horse begins from the equivalent of US\$3,000—roughly equivalent to the average price of a privately sold horse in the US.



However, a top horse can fetch much more: At one auction last year, the price of a horse named Sultan began around US\$18,000.

Some of the horses are sold to private stables on the shores of the Caspian Sea in Baku, the capital of Azerbaijan. A new high-speed train, which shuttles across the nation of 10 million people, describes a rapidly modernizing country that remains a continental crossroads. Moving far faster than Silk Road riders ever dreamed, the scenery outside the train leaves behind the orchards and rural greenery as it gallops through rows of oil derricks that pounce up and down like giant ants and then sprints into Baku past skyscrapers and a glittering cultural center designed by the late architect Zaha Hadid.

Sarxan Tagiyev is the founder of an equestrian club next to the Baku State Hippodrome.

Jockeys describe riding a Karabakh at full gallop as an undulating, wildly exciting ride.



Inside the stadium, Karabakh horses nibble grass alongside a circular racetrack as more horses rest in stables inside the complex.

As Tagiyev pats his beloved Karabakhs, he recalls a remarkable relationship with the breed that goes back generations. His grandfather Ali and his great uncle Calal started to collect horses in Aghdam in 1946, just after the end of World War II. A decade later, the Soviet Union wanted to cultivate relations with other countries. Mirroring the Caucasus tradition of gifting horses, Soviet authorities decided to use a Karabakh horse as a diplomatic present to the United Kingdom. “They received advice that the newly crowned Queen Elizabeth II loved horses,” explains Tagiyev. The horse the Soviets wanted to gift to her was a Karabakh named Zaman, born in the Aghdam horse center in 1953, the same year UK had crowned the young queen.

Here the Soviets hit a problem. “They struggled to find a chaperone to accompany Zaman

Mirroring the Caucasus tradition of gifting horses, Soviet authorities in 1956 decided to use a Karabakh horse as a diplomatic present to England.

to London because the chairman of the Soviet Union, Nikita Khrushchev, didn't like any of the jockeys they presented,” explains Tagiyev. The authorities discovered that Tagiyev's grandfather had taught military leaders how to ride on parade and that he looked suitably handsome in a national costume. In 1956 Ali Tagiyev was groomed to ride for the queen and to be prepared to answer questions she might pose. “He became the first Azerbaijani jockey in Britain,” says his grandson with a smile.

At Windsor Castle, Tagiyev continues, “the queen asked my grandfather to train her new Karabakh horse and stay in England for 10 days.” He unfurls a collection of yellowing UK newspapers that show the national rapture the golden-coated Zaman inspired. “I Gotta Horse!” headlined Britain's *Daily Mirror* on April 21. “At Epsom [racecourse] they've met all kinds of horse types. But never one like [Tagiyev],” who was pictured in his traditional costume, wearing leather riding boots and an Astrakhan hat. So



notable was Zaman's unique coat that it even sparked fashion trends, as women allegedly began choosing jackets and coloring their hair in golden hues.

As he pets one of his Karabakhs, Tagiyev describes the history. "My little brother Jamal went to Britain in 2012 with three more horses" to perform at the Royal Windsor Horse Show.

On the east side of the capital, the Karabakh's resurgence gets confirmation also from the Royal Pegasus Stables, the workplace of Svetlana Kuznetsova. As registrar of the Equestrian Federation of Azerbaijan, Kuznetsova helps compile the Karabakh's official stud book—the authoritative documentation of the entire breed.

"I first saw Karabakh horses in the hippodrome when I was about 9 years old," says Kuznetsova as she overlooks the stable of a frisky, 18-month-old stallion named Ucan. "It's important to create a stud book to keep the pedigree pure," she continues. "Especially as we only have a small number of them." The records go back to the Soviet era when every detail describing which stallion paired with which mare on which date was written into the ledgers by hand.

Today Kuznetsova's task merges big data with pen and ink. "Breeders still

ABOVE Trainer and jockey Cafar Cafarzada shows off Qalam's profile while sunlight shimmers off his coat. Most Karabakhs stand about 140 to 150 centimeters, or 13 to 14 hands, and weigh in at about 280 to 350 kilograms. **LEFT** Svetlana Kuznetsova is the registrar of the breed for the Equestrian Federation of Azerbaijan. She manages the stud book and is conducting DNA testing across the country to improve tracking and recordkeeping.



need to draw a diagram of each horse,” says Kuznetsova. “Every equestrian passport still contains one.” Kuznetsova believes that only a horse with seven generations of proven parentage can be considered pedigree. To this end she hunts down parent horses all over the country to cross-reference records, count the foals and take DNA samples.

“We used to send blood to a laboratory for DNA analysis,” Kuznetsova explains. “Blood samples are very complicated, as sending them abroad requires loads of documents.” Now she sends horsehair samples to a DNA laboratory in Germany, “which

Digital data and DNA testing are merging with historic, pen-and-ink studbooks to help secure the future of the Karabakh.

is much easier.” The gene sequence of each horse is then saved onto a microchip that is inserted painlessly near the top of each horse’s neck as a record for the future.

Back at the Agjabedi Horse Center, Qadirov, too, has been involved in the Karabakh stud book. He helped compile an earlier printed edition of

it, and he is strolling the stable complex during another busy day. The feral spirit of the Karabakh comes out as three young stallions are trotted toward a trailer, en route to a DNA test and as frisky as children. One of the trio rears up; its slender legs kick skyward. Then the horse accelerates across the manicured grounds until the soothing voice of its trainer cajoles it into the trailer, an unvanquished spirit, ready to break into a new era at a gallop. 🌐



Tristan Rutherford is a winner of six journalism awards and a regular contributor to *Boat International* and *The Times*. He recently traveled on assignment with his three young sons across Europe to Morocco on a Eurail pass.

Rebecca Marshall is a British editorial photographer based in the south of France. A core member of German photo agency Laif and Global Assignment by Getty Images, she is commissioned regularly by international publications and clients.



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THE
MYSTERIES
OF THE

MUSSTAILS

WRITTEN BY
GRAHAM CHANDLER
PHOTOGRAPHED BY
TALAL AFANDI



Amid burnt-orange cliffs and monolithic outcrops of weather-sculpted sandstone about an hour's drive from AlUla in northwest Saudi Arabia, archeologists Melissa Kennedy and Hugh Thomas are walking across a prehistoric lakebed in search of a rectangle of stones. Only a wafting breeze keeps the desert heat from being unbearable.

What they seek is a *mustatil* (rectangle, pronounced moos-ta-TEEL) that they helped excavate in 2019, before the COVID-19 pandemic shut down travel. Kennedy and Thomas have come from the University of Western Australia to join local and other international colleagues to probe a mystery: why there are more than 1,000 rectangles of stones laid out in seemingly random locations across a region twice the size of Portugal.

The desert hasn't always been here. Some 7,000 years ago, grasslands, dotted with lakes and coursed with rivers, covered the western Arabian Peninsula. Evidence abounds of the richness of human habitation over the long era that followed the last ice age until the region, along with northern Africa, began drying out some 5,000 years ago.

The region fairly teems with other types of stone structures—mostly cairns, animal traps and tombs—and thousands of drawings on stones and cliffs depict giraffes, cattle, humans and more. Most of these are largely self-evident as to their functions. But not the mustatils. No one knows why they were built, let alone in such numbers and with such variety in size and proportion.

Mustatils are among the oldest of the world's known, large-scale stone structures. Built of local, undressed rocks, they



PREVIOUS SPREAD Often faint in against sand and rocky ground, a *mustatil* is often clearly visible from above, and the Aerial Archaeology in the Kingdom of Saudi Arabia project has charted more than 1,000 of them, including this one that measures 140 by 22 meters. **TOP** Melissa Kennedy of the University of Western Australia and the author examine the outlines of the same *mustatil* from ground level, where its parallel lines pointing toward the cliffs are barely distinguishable. **ABOVE** Wind-sculpted sandstone makes a dramatic setting amid what were, until about 5,000 years ago, lands used for pasture and game-hunting. **OPPOSITE** The distribution of *mustatils* mapped to date show them clustered in northwestern Saudi Arabia.

typically consist of two platforms, each about 2 to 3 meters wide, set on each end of the rectangle. They are connected by thin, parallel walls that vary in length from tens to hundreds of meters. Because these walls appear to have stood only about half to a full meter high, they are clearly too low to have made *mustatils* useful as animal enclosures. Some *mustatils* are isolated; others were built in pairs; still others in groups; and they appear in

landscapes from hillslopes to relatively flat ground. They have no apparent preferred orientation. A few artifacts such as animal remains and stone tools have been discovered in them, and very little around them. Many appear only faintly above the surface—an indication that there may yet be more beneath the sands.

While the mustatils have been known to local Bedouin and others for centuries or even millennia, it was not until 2018 that the first formal archeological excavation was undertaken. Supplemented by satellite imagery, aerial surveys sponsored by the Saudi Royal Commission for AlUla (RCU) have now mapped more than 1,000 mustatils, yet so far fewer than a dozen have been excavated.

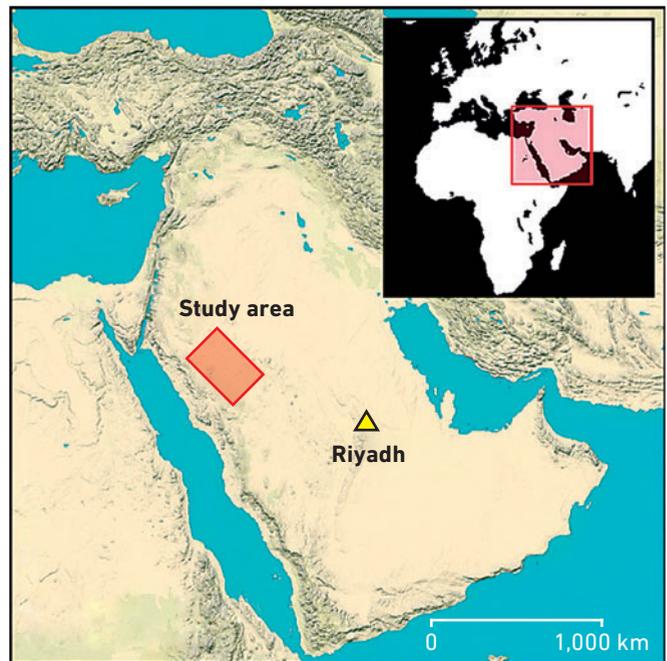
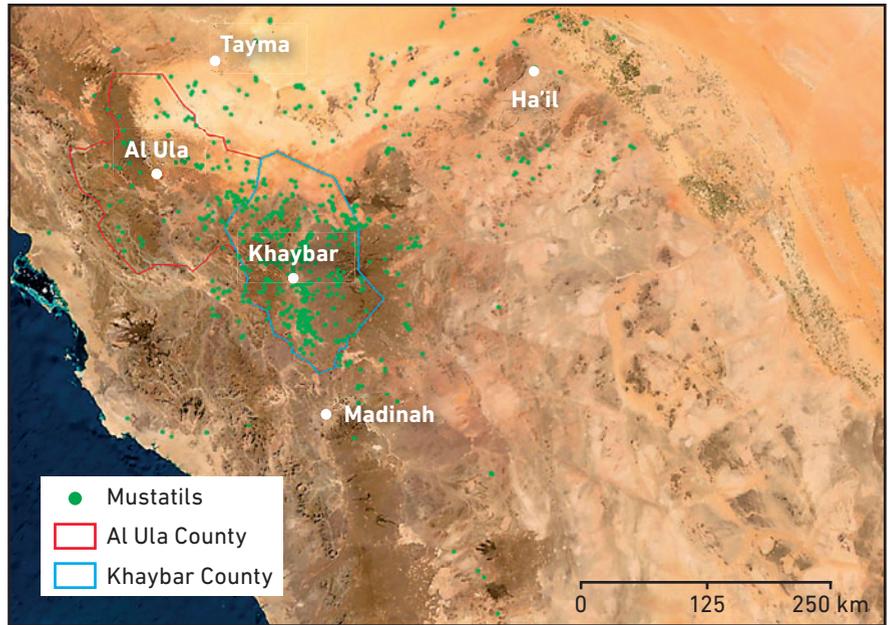
While archeologists are in near-unanimous agreement that mustatils likely served ritual functions, that does not begin to answer the many other questions: How old are they? Why were they made in that form? Why are there so many? Why is there so far no evidence of occupation near any of them? And if they indeed had a ritual function, what did *that* look like? How did that ritual require or favor this construction? What did it aid? To begin to address these questions, says Kennedy, “at the start our main aim was to work out when these structures dated to and what were their purposes.”

As archeologists that meant one thing: Dig—carefully.

“We decided to excavate our first mustatil based on a combination of the aerial photographs and our later ground survey,” explains Kennedy, who is also the field director for the Aerial Archaeology in the Kingdom of Saudi Arabia (AAKSA). The mustatil they selected measures 140 meters long by 22 meters wide. It “looked promising from the aerial photos, and then when we visited it on the ground, we could see that it was undisturbed and in good condition, and [it] was a good choice for excavation.” Similar reasoning guided her team’s choices for subsequent digs as well.

The other recent project, sponsored by the RCU in 2018, took a different approach for its first mustatil excavation, also near AlUla. It was not the best-preserved, explains Wael abu Azizeh, a researcher at the French Institute for the Near East, but it had features suggesting it was well-built and well-organized. Abu Azizeh has led three mustatil excavations in the AlUla region on behalf of Oxford Archaeology while working for the RCU. “Above all, it was chosen because these features were just below an overhang of the cliff rock face, and so protected from rainfall.” This configuration, he says, would have offered optimal preservation conditions for any organic remains.

“This turned out to be verified in the course of the excavation and the unique discoveries we made,” says Abu Azizeh. The first of these was undisturbed deposits of charcoal from two small fires, one flanking each side of an enclosed chamber. The charcoal was later carbon-14 (C14) dated to 5200 BCE—the first-ever firm



Stonehenge and the pyramids in Giza would not be built for another 3,000 years.

dating of a mustatil component. Stonehenge and the pyramids in Giza would not be built for another 3,000 years.

Saeed Alahmari was a research archeologist on Abu Azizeh’s excavation. At the RCU’s headquarters in its soon-to-be-renovated building in downtown AlUla, he describes finding several dozen horns of cattle, goat, sheep and ibex in that mustatil’s 3-meter-wide, enclosed chamber, which the team named the Horn Chamber. Speaking through translator and fellow archeologist

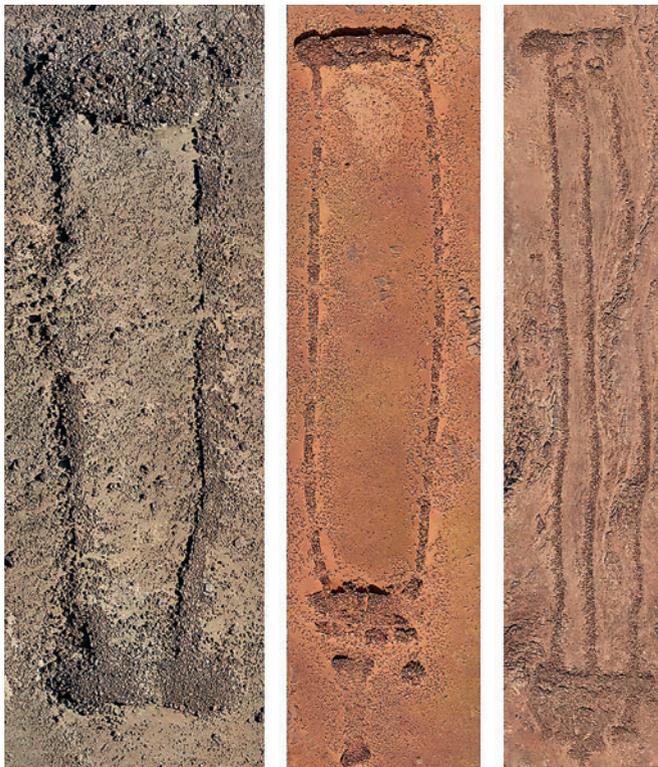
Paul Mahboub, Alahmari explains that the arrangement of the horns in the chamber showed “meticulous placement,” and that among them, the cattle horns were the first evidence of a domesticated species.

It was “one of the best days of my career,” Alahmari says.

In another mustatil, he continues, the

team found “many animal bones and [at a higher level] many human bones, in a specific way that might lead us to the picture that we might have a population there.” Could the mustatil have been a funerary structure?

“They were originally not funerary,” explains Rebecca Foote,



RCU’s director of archeology and cultural heritage research. “In their original purpose, there were only horned animal cranial parts placed in the chamber in great numbers in the Horn Chamber of the mustatil Saeed excavated,” Foote adds. “And that C14 date range is about 5300 to 5000 BCE. Then about 4900 to 4800 BCE, the chamber was cut in half and reused for a human burial. So there is evidence of human burials, but it seems to be 100 or 200 years after the original deposit of horns and teeth. All evidence suggests the original use was ritual, and later there was reuse of the site as funerary.”

Kennedy and Thomas’ team has excavated five mustatils since 2019, all in the sandstone canyons east of AlUla. They too have found similar mixes of wild and domestic animal remains as well as similar dates. “We have C14 dates for all the mustatils we have dug, mainly dating the different deposits of animal remains,” says Kennedy. “All fall between about 5200 and 4900 BCE.”

The importance of this mix of wild and domesticated animals appears to be corroborated in the region’s rock art, where scenes of both cattle herding and hunting frequently appear together. Maria Gaugin specializes in the rock art of northern Saudi Arabia at the Max Planck Institute for the Science of Human History. She points out that this so far seems more coincidence than connection. “I’m not aware of any rock art directly associated with a mustatil,” she says.

After establishing the C14-based ages for the objects

LEFT AND LOWER Mustatils vary in proportions, sites and orientations. Some were built singly and others in pairs or clusters that “may suggest that the very act of their construction was a kind of social bonding exercise,” notes Huw Groucutt of the Max Planck Institute.



discovered, Kennedy began to focus on dates for the structures themselves. For that she turned to optically stimulated luminescence (OSL), which determines when a soil or rock was last exposed to sunlight. She used it to date the time when the people building the mustatil laid its first and lowest course of stones.

“We have just got some of the OSL dates back,” says Kennedy, “and they appear to match up with the radiocarbon data” of the organic remains.

With the structures dated, archeologists could correlate this information with lifeways and knowledge of the climate.

“Northern Arabia 7,000 years ago was very different from today,” states Huw Groucutt, who leads the Extreme Events Research Group at the Max Planck Institute of Geoanthropology. “Rainfall was higher, so much of the area was covered by grassland, and there were scattered lakes. Pastoralist groups thrived in this environment,

At the center of one end of each mustatil, archeologists have found a single, low covered chamber, some of which have horns such as this one from cattle, **RIGHT**. The photo, **LOWER**, shows the chamber found in the mustatil shown on pages 16-17 and 18.



MUSTATILS AND ARCHEOENIGMAS

Archeology today is a discipline that, in its science-based form, is only somewhat more than a century old. This makes archeologists only the latest group to try to interpret seemingly inexplicable relics of the past—archeoenigmas—that communities and travelers have for centuries variously lived alongside and discovered for themselves. How and why were the enormous stone heads on Rapa Nui (Easter Island) in the Pacific Ocean created? How about the 2,000-year-old geoglyphs in what is now Peru, known as the Nazca lines? All such archeoenigmas attract both evidence-based speculation as well as more fabulous hypotheses such as aliens, superpowers and lost civilizations. Here are three lesser-known mysteries that, like the mustatils of the Arabian Peninsula, continue to defy interpretation.

THE STONE SPHERES

In 1940 while clearing jungle in Costa Rica’s Diquis Delta region, the United Fruit Company uncovered numerous partly buried, massive stone spheres. Dated between 500 CE and 1500 CE, around 300 are now known. The largest weighs 16 tons and is more than 2.5 meters in diameter; the smallest is about the size of a basketball. Adding to the puzzle, the source of the stone appears to be more than 80 kilometers away. Firm dating and their purpose remain elusive.

THE PLAIN OF JARS

Discovered in the 1930s, the Plain of Jars in the Xiengkhuang Plain of Laos sports at least 3,000 giant stone jars up to 3 meters tall scattered across nearly 100 sites dated from 500 BCE to 500 CE. Archeological investigations over the decades pointed to some consensus that they probably served as burial containers. But the questions persist: Who carved them? Why jars? And why so many?

GÖBEKLI TEPE

Discovered in 1993 in southern Turkey, Göbekli Tepe is the world’s oldest known monumental art and the earliest, largest monumental structure associated with a hunter-gatherer way of life. It has multiple concentric rings of massive L-shaped stone pillars carved with scenes of animals both realistic and mythic. Cut into a hill and constructed 11,500 years ago by semi-nomadic hunters centuries before the advent of agriculture, the site was intentionally buried about 1,500 years later. Who constructed it, why, and then, who buried it, and why?

RIGHT Janet McMahon, doctoral candidate and assistant to Kennedy and Thomas, discusses progress at the excavation site near AlUla.

LOWER As part of the Royal Commission for AlUla's 2018 team, archeologist Saeed Alahmari found one 3-meter-wide chamber with several dozen horns from goats, sheep and ibex, as well as cattle, whose higher water requirements are an important marker of the era's climatic conditions.

yet it would have been a challenging place to live, with droughts a constant risk.”

“Mustatils are clearly related to the emergence of pastoral nomadic societies,” says Abu Azizeh. The role of the era's very gradual climate change, however, remains unclear, although it likely was a factor in determining the species of animals domesticated. “The presence of cattle, for instance, suggests an overall wetter and greener environment,” he says.

“Recent studies suggest that by the Late Neolithic, northwestern Arabia was very arid, but our archeological data doesn't really suggest this,” says Kennedy. “In terms of the connection with the transition to pastoralism, by the time the mustatils were built, pastoralism appears to have been well-established.”

The environmental changes brought about by the climate changes—desertification—may have led to anxieties about food and subsistence. Groups may have searched for ways to ensure continued abundance, such as rituals that reinforced group bonding and often involved sacrifices.

“The fact that sometimes several of the structures were built right next to each other may suggest that the very act of their construction was a kind of social bonding exercise,” Groucutt writes. And this, he adds, may be a clue as to why there are so many.

Mustatils were not particularly difficult to construct. Using locally available, naturally cleaved sandstone without mortar, a group of 10 people could probably have constructed a mustatil 150 meters long in two to three weeks, according to a recent academic analysis.

Abu Azizeh believes mustatils were a kind of collective or communal monument. “There are so many of them because every community had to build and have its own mustatil ritual monument. In view of the ritual dimension imbued in these structures, I believe the building of a mustatil—involving collective



effort and reinforcing social ties—was privileged over reusing a previous mustatil of another clan or group.”

“In terms of the connection with the transition to pastoralism, by the time the mustatils were built, pastoralism appears to have been well-established.”

—MELISSA KENNEDY

Thomas mostly concurs. “The deposits inside each structure are slightly different—different types of animals or different chambers—so it is highly suggestive of some form of individuality happening with the offerings,” he says. “That may be tribal, different phases of use, different family groups, or different environmental factors that change the preservation.”



"We believe—this is all hypothetical—that you would have seen various communities or groups of people coming together to build the structure. They would then sacrifice the animals that they had brought with them," says Kennedy, left, **ABOVE**. Project director Hugh Thomas stands at right and the author at center as they examine one end of the mustatil they are studying.

Abu Azizeh speculates about one possible scenario: Based on its elongated shape, people would enter and follow a customary, predetermined path. Once the groups had gathered in the space, in effect an open-air courtyard, representatives of the families or clans would enter and successively approach the shrine—the platform-like feature at the mustatil's end. There two hearths provided light from each side of the low, narrow entrance. Into this intimate space, the individuals would place an offering into the chamber behind the hearths.

Kennedy's take is similar. "We believe—this is all hypothetical—that you would have seen various communities or groups of people coming together to build the structure. They would then sacrifice the animals that they had brought with them, depositing the cranial elements—like the maxillaries and horns—in the central offering chamber. And then, we believe, there was a big communal feast, with this done as a group bonding experience."

But it would take only a surprise discovery or two—such as if contemporaneous human remains were to be found alone without associated animal offerings—to prompt significant rethinking. "Our hope is to do more work on these structures in other areas," says Kennedy.

"It is just about getting more experience," adds Thomas. From across the paleolake, under the sky broken only by

"There are so many of them because every community had to build and have its own mustatil ritual monument."

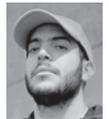
—Wael Abu Azizeh

the blaze of the sun, Kennedy is calling out, "I found something!" She is pointing to a small circle of stones. Thomas records its location. Every discovery is important at this early stage, she says. "Our dream find would be to identify the place where the people who constructed the mustatil were living," she adds.

Abu Azizeh too is keen to discover traces of similar evidence. "Finding and identifying the occupation campsites of these pastoral nomadic societies, in direct association to the mustatils, would constitute for me a major 'dream discovery,'" he says. 🌐



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PALERMO'S PALIMPSEST ROADS

Written by
ANA M. CARREÑO LEYVA

Photographed by
RICHARD DOUGHTY

“The Mediterranean is not an empty space filled with water. It is like a brain full of ideas.”

—STEFANO PIAZZA

“Everything here speaks to layering, of a cultural intermingling.”

—ROSSELLA CORRAO





The Mediterranean Sea was since times of old the easiest way to travel across the then-known world, given the difficulties that traveling by land entailed, and mainly because it established connections to the most important ports of Europe, West Asia and North Africa.

Commanding the center of these waters that Romans called *Mar Medi Terraneum* (Sea Among Lands) and Arabs named *al-bahr al-abyad al-mutawassit* (The White Middle Sea), lies its largest island, Sicily. Over the centuries one of the most disputed places and home to some of the Mediterranean's most important actors of history, Sicily has been throughout a vortex of conquests, commerce and culture. On its western coast lies its capital, Palermo, a kind of historical resonance box echoing still with traces of settlers whose overlaid identities give the city its unique and even exemplary character.

"The Mediterranean has always been a point of confluence of the many civilizations of the Old World," says Stefano Piazza, professor of art history at the University of Palermo. "Every people has poured onto our shores their influences, sometimes assimilated, and others overlapped, giving as a result the Mediterranean nature, a unique kind of transmitting antenna to all its environment. The Mediterranean is not an empty space filled with water. It is like a brain, full of ideas, cultures, materials and all kinds and people." And Palermo "reflects this condition."

OPPOSITE Overlooking Sicily's capital of Palermo and its Conca d'Oro (Golden Basin), so named for the citrus groves introduced during two centuries of Arab rule, the peaked arches and geometric medallions on the apse of the Norman cathedral of Monreale testify to the layered culture of Arab-Norman Sicily. **ABOVE** In the palace of Norman King Roger II, Muslim artisans of the early 13th century produced eight-pointed stars for the ceiling of the royal Capilla Palatina, each one bordered with Arabic inscriptions: This one invokes a string of blessings including "good fortune and favorable fate and custody and victory." In 2015 UNESCO included both buildings in its World Heritage Site designation.

Taking this as Sicily's foundation, its history offers few tranquil tales. Yet this has helped Sicily, and Palermo in particular, to realize the potential of multiculturalism, explains former mayor of Palermo Leoluca Orlando, who was elected in 1985 and re-elected four times until last year. "Culture can reach what politics cannot. Our history and the legacies of the past are our future," he says.

First to Sicily's shores came Phoenicians, followed by Greeks, Carthaginians, Romans, Vandals and, from the mid-fifth century CE, the Eastern Roman Empire from Constantinople (Byzantium). In the latter ninth century CE, the Muslim Arab-Berber Aghlabid dynasty, from Kairouan in what is now Tunisia, concluded more than a century of raids by taking first Sicily's southwest and then its eastern city of Siracusa (Syracuse) into the expanding Dar al-Islam. They set up their capital in the port city the Greeks had named Panormo, and they Arabized its name to Balarm: Today's Palermo is, characteristically, a synthesis



Upon his visit to Palermo in 1184 CE, Andalusian geographer Ibn Jubayr called the church of Santa Maria dell'Amirraglio, finished in 1143 CE, "the most beautiful monument in the world." **LEFT** Every surface of its ceiling and vaults is covered in Byzantine-style gold mosaic. **ABOVE** "For us God suffices and He is the best disposer of affairs" reads part of this Arabic inscription from the Qur'an that is one of two that appear on columns of Christian structures in Palermo.

of both. The Aghlabids put into practice ways that had proven largely successful with other Arab conquests. They permitted freedom of worship, and they allowed Christian churches and monasteries to carry on traditions of Hellenistic scholarship. They brought advances in agriculture, science, urban administration and water management. They broke up large properties according to Islamic law to create more smaller properties to be managed by farmers who introduced crops like cotton, papyrus, pistachios, rice and date palms. Citrus fruits especially flourished, and since no one today seems to remember when, the Palermo basin has been known as the Conca d'Oro (Golden Basin), due to the color that its many orchards of lemons and oranges added to the landscape.

The revolution of agriculture boosted the economy, and Sicily became again, as it had been in Roman times, the leading granary of Europe.

In construction, says Piazza, "the Arabs found sort of a huge store where they could get either inspiration or technical solutions, which sometimes they improved," all thanks to the abundance of Roman stone works. Arabs brought their own technologies, too, particularly in hydraulic

RIGHT Built meters from Santa Maria dell'Amirraglio and dedicated only nine years later, the vaults and three domes of the church of San Cataldo are devoid of ornament, which makes all the more apparent the Arab-influenced structure—notably the arches as well as the squinches that transition the square vaults up into each round dome. The different capitals on the columns signal reuse of columns from earlier, possibly Roman, structures. **LOWER** This mosaic in Santa Maria dell'Amirraglio depicts the 1130 CE coronation of King Roger II, and it is the only known possible likeness of the king. **LOWER RIGHT** The UNESCO World Heritage Site designation appears outside San Cataldo in downtown Palermo.

infrastructure. Instead of Roman-style aqueducts and pools, which are prone to evaporation, they built *qanats*, or channels that ran both underground and at ground level. These made possible great tracts of agriculture as well as gardens where water not only cooled and decorated, but also brightened spaces in ways not seen before in Europe, except in what was being developed around roughly the same time in al-Andalus, or Muslim Iberia.

Arab power in Sicily began to weaken in the 10th century with the rise of the Fatimid dynasty, which displaced the Aghlabids in North Africa, declared a caliphate and in 969 CE moved its capital to Egypt. It was not long until the Greeks returned to Sicily, this time by the hand of their allies from the north: the Normans.

In 1061 CE the Normans began their invasion of Sicily, having already taken control of much of southern Italy. Their origins were Viking but their name came from the Duchy of Normandy in France. The Normans declared Palermo a Christian capital in 1072, and a generation later, in 1130, the son of the conquest's leader was crowned King Roger II of Sicily. His realm was the third largest in Europe, and the event marked the beginning of what became Sicily's brightest age of cultural layering. Educated by Greek and Arab tutors, Roger II had grown up in a cosmopolitan society, and his court became a crucible of Sicily's Latin, Byzantine, Greek, Islamic and Norman influences, a center of knowledge for scholars and discussions in French, Latin, Greek and Arabic.

As Arabs had done with the remains left by Romans, the Normans also adopted, appropriated and adapted not only Arab infrastructures but under Roger II, especially, they reaped the benefits of Arab statecraft, public administration, architecture, engineering and crafts. The court of Roger II became one of the most eclectic in the region's history, a compendium of people whose echoing legacies



show their eagerness to learn from each other.

One of the clearest examples is Giorgio of Antioch, an admiral of Roger II who was also an architect and an Arab Christian from Syria. He directed the construction of the church of Santa Maria dell'Ammiraglio, also known as La Martorana, which stands today in downtown Palermo as a testament to architectural palimpsest: Byzantine mosaics adorn Arab pointed

arches and ribbed vaults above, while geometric mosaics on the floor show both Roman and Arab influences. On one of the church's columns there is an inscription, in Kufic Arabic script, that quotes the Qur'an—and it is one of two such columns with Qur'anic inscriptions in a church in Palermo. (The other is in the city's cathedral.)

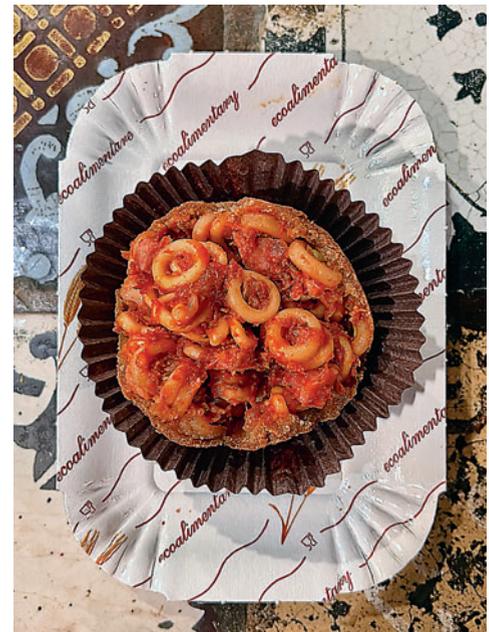
This church is one of Palermo's many open books about how Normans understood Islamic art as well as the architectural features that later would evolve toward the European Gothic, Piazza explains. "Normans were mainly warriors and conquerors. Their first artistic realizations were very primitive. However, once they regained security and were fully established in



Sicily, they started to grow, especially under Roger II." They too reused Roman materials: cupolas, columns and especially "materials like porphyry, a type of igneous rock considered by Romans the most noble of materials that they used to convey the sense of eternity, as a way to remain in people's memory and also to show royal power."

In the 12th century, the continuing Islamic expansion throughout the North African coasts and the south of Iberia reinforced Sicily's role both as a crossroads and a frontier, a boundary land among Latin and Byzantine Christendom and Muslim realms of the Mediterranean. With official languages of Latin, Greek, Arabic and some Romance languages like French and that

Cofounder of Molti Volti (Many Faces), a Palermo restaurant themed to extol the city's multicultural past and present, Claudio Arestivo, at far left, poses with the day's staff, which offers up dishes from Senegal, The Gambia, Morocco, Cote d'Ivoire and Italy. "Food is one of the most interesting ways to represent multiculturalism," he says. "If I could offer one dish to Roger II today, I would choose couscous," he adds, which "arrived here in his times, and now it is a very common meal in Sicily." No less popular in Palermo today are varieties of arancine, a Sicilian Arab rice ball, filled and deep-fried, **RIGHT**.





“Our history and the legacies of the past are our future.”

—LEOLUCA ORLANDO,
FORMER MAYOR OF PALERMO

An evening hike on Monte Pellegrino takes a family up one of the high, defensible hills that surround the wide, crescent bay that made Palermo a maritime crossroads and a crucible of Mediterranean power and culture for nearly 3,000 years.

of Puglia, Arab-Norman Sicily was the leading place in its time showing that conviviality was possible—much as Palermo does today, where the streets and markets resonate with new, 21st-century polyglot combinations.

One of the only descriptions of Sicily prior to the Norman conquest comes from the 10th-century chronicler from Baghdad, Ibn Hawqal, who described the high degree of Sicily’s development in his work *Surat al-‘ard (Face of the Earth)*. He highlighted how habits and customs melded in a heterogenous capital: “The city had around three hundred mosques, most of them being in the lord’s palaces, in the fashion of the Christians’ private chapels.”

From the years of Roger II there are a few Arab sources, including Ibn Jubayr, a geographer, writer and chancellor secretary of the Almohad ruler of Granada in al-Andalus, who visited Palermo in 1184 CE as he was returning home from Makkah. Ibn Jubayr provided testimony about how Muslim people lived in the Christian kingdom, how administration was handled and, through many personal interviews, made a description of towns, palaces, and other structures. He wrote that Palermo is the metropolis of the islands, combining the benefits of wealth and splendor, and having all that you could wish of beauty, real or apparent,



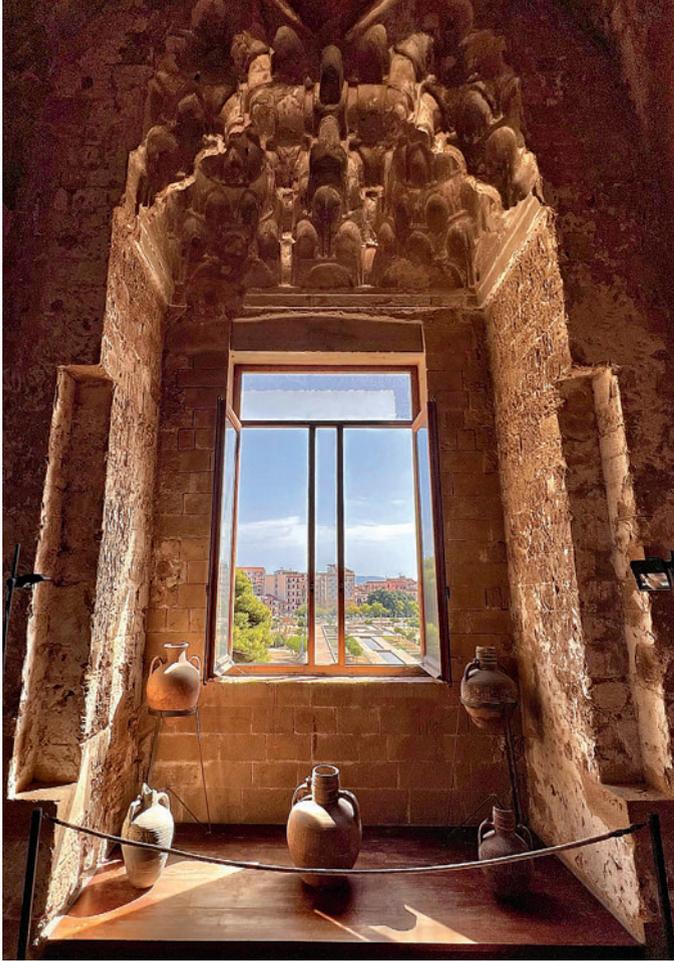
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OPPOSITE Regarded by art historians as one of the masterpieces of medieval Islamic workmanship, the painted wooden ceiling of the Capilla Palatina mesmerizes and enchants with its ranks of star-shaped coffers supported by honeycomb muqarnas set above the walls and vaults covered in mosaics executed by Byzantine craftsmen. **ABOVE LEFT** The 1180-CE Zisa Palace (from *al-aziza*, “the splendid”) was built by Norman kings William I and William II in Arab style, including extensive gardens and pools in front, visible here through the window. **TOP** “He created the sun, the moon, and the stars, governed by His laws,” reads part of the inscription from the Qur’an carved on this column on the portico of the Cathedral of Palermo. The column may have been repurposed from an earlier mosque. The cathedral’s crenellated apse, **ABOVE RIGHT**, shows interlaced, patterned arches and geometric medallions.

and all the need of subsistence, mature and fresh. It is an ancient and elegant city, magnificent and gracious, and seductive to look upon. Proudly set between its open spaces and plains filled with gardens, with broad roads and streets, it dazzles the eyes with its perfection. It is a wonderful place, built in the Córdoba style, entirely from cut stone known as *kadhan* [limestone]. A river splits the town, and four springs gush in its suburbs.... The Christian women of this city follow the fashion of Muslim women and are fluent of speech, wrap their cloaks around them and are veiled.

Twentieth-century historian Julius Norwich, who wrote two magisterial works on Sicily, wrote that Norman Sicily “stood forth in Europe—and indeed in the whole bigoted medieval world—as an example of tolerance and enlightenment, a lesson in the respect that every man should feel for those whose blood and beliefs happen to differ from his own.”

As one of the most important Mediterranean commercial centers, the port of Palermo became crowded, full of markets, traders, languages, identities as well as smells, colors and flavors, much like what can be still relished today, from Arab-style *arancine*—fried balls of rice and fillings—to new fusion restaurants such as *Molti Volti* (Many Faces), which offers cuisine by chefs

from Senegal, The Gambia, Morocco, Cote d’Ivoire and Italy. Opened in 2014 under the motto “*La mia terra é dove poggio i miei piedi*” (“My land is where I put my feet”), co-founder Claudio Arestivo explains that “food is one of the most interesting ways to represent multiculturality.”

For his restaurant, he says, “We wanted to allow diversity to have its own voice. We have different chefs from diverse nationalities—from Africa to Asia as well as European. Because this is the reality we are living and understanding, that our community is composed not only by Italian families, but of families from around the world, and this is the only possible way to comprehend the complexity of our society.”

The best example of this, he adds, is the enduring popularity of couscous, originally of North African origin. “If I could offer one dish to Roger II today, I would choose couscous with fish. For couscous arrived here in his times, and now it is a very common meal in Sicily.”

In 2015 the city secured global recognition for its palimpsest style when the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared an ensemble of seven buildings in Palermo and two outside the city as a suite of World Heritage Sites that show the “Western-Islamic-Byzantine syncretism that characterized the Norman kingdom of Sicily.” This, UNESCO



declared, “created new spatial, constructive and decorative concepts” from origins that also included Latin, Jewish, Lombard and French.

The designation not only makes the city’s heritage more visible to tourists, who have begun to return with the easing of COVID-19 restrictions, but also sparks other projects, explains Lucio Tambuzzo, a Sicily native as well as artistic director of iHeritage, a pan-Mediterranean program that uses digital technologies including Augmented Reality and 3D immersion to promote heritage appreciation, conservation and sustainable development. Implemented by the European Union’s European Neighbourhood Instrument (ENI) and inaugurated in 2020, the city of Palermo acts for Sicily as team leader with national partners Spain, Lebanon, Portugal, Egypt and Jordan.

“It is very important for Sicily to take part in European projects such as iHeritage,” he says. Palermo “summarizes the contributions of the different cultures and religions in the Mediterranean, and this clearly crystallizes in the Arab-Norman period, the reason why the sites of the UNESCO that have been included in the iHeritage project belong to this period. The rest of the selected UNESCO sites in the Mediterranean area will thus be connected through a network, to share learning and good practice experiences.”

Through iHeritage, Tambuzzo also created the Mediterranean region’s first

LEFT Near the sanctuary in the cathedral of Monreale, a marble balustrade shows a pattern that is purely Islamic, and mosaics both on its lower register and on the cathedral’s floor, **LOWER**, show influences from Islamic, Byzantine and Roman designs.





“Mediterranean people are all part of a unique, multifaceted, intertwined and indivisible culture where diversity is its highest value.”

—LUCIO TAMBUZZO,
ARTISTIC DIRECTOR,
iHERITAGE

register of intangible cultural heritage, based on UNESCO’s global criteria. “This clearly shows that we, the Mediterranean people, are all part of a unique, multifaceted, intertwined and indivisible culture where diversity is its highest value. I am sure that Arab-Norman King Roger II would be enthusiastic with this initiative, given the curious, innovative, and visionary man he was.”

Rossella Corrao, a professor of architectural engineering at the University of Palermo, collaborates with iHeritage as an expert adviser. “It is very important that the new generations get to know the meaning and value that historic patrimony has, and it is our duty to use the right tools to make them love and appreciate their historical sites as a part of themselves,” she says.

Of the nine sites on UNESCO’s list in Palermo, one stands apart in its capacity to overwhelm visitors of all ages and backgrounds: the Capilla Palatina (Palatine Chapel), built inside the Norman royal palace and finished under Roger II.

“It is really difficult to know which are the original parts and which were restored or added,” Corrao says. “Everything here talks of the layering of cultural intermingling, a sort of cultural mosaic.” Corrao suggests looking at the chapel as “a message that would endure and transcend time.” Here meld the best of Latin, Byzantine and Arab traditions, in both design and the languages of inscriptions that appear in Latin and Greek on the walls, arches and domes and in Arabic high on the spectacularly coffered, elaborately painted *muqarnas* ceiling.

To Piazza, the ceiling exemplifies “the purest Islamic style, inconceivable for a church,” and that in its beauty, “it constitutes the glorious crown of the site.”

In 2018 Italy named Palermo its Capital of Culture, after its selection to also host the European Biennial of Contemporary Art. The Sicilian capital, says Dario Franceschini, who served as Italy’s minister of culture at the time, has come to “gain new

embrace the same spirit as in the glorious past when multiculturalism, our natural state all our history long, meant progress and growth. We should give Palermo the chance of sending a message. Our history is our future.” 🌐

importance, because of its growth in the fields of culture and tourism,” and “this virtuous competition has created a system of communal participation.”

Former mayor Orlando has long advocated community participation and work as ways to bring out the strengths in multicultural societies. The city’s rising profile comes within its long and broad context at the center of the Mediterranean. “More than just an idea or an intention,” he says, Palermo is a true “capital of cultures—cultures that have found in our city the place for their own coexistence, dialogue and mutual enrichment.

“I have always held that there are no ‘immigrants’ in Palermo,” Orlando adds. “If they live here, they are then Palermitans. We should

In 2015, the same year UNESCO designated Palermo’s World Heritage Sites, the city produced its Manifesto of International Human Mobility, which articulated its stance as a “city of accommodation” to newcomers from Africa, the Middle East and Asia. Palermo is now the most culturally diverse city in Italy—much as it was during its Arab-Norman period.



Ana M. Carreño Leyva lives in Granada, Spain, where she is a translator of modern languages and a freelance writer who specializes in the cultural heritages of al-Andalus and the Mediterranean region.



Richard Doughty is editor of *AramcoWorld*. He holds a master’s degree in photojournalism from the University of Missouri.



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IBN AL-HAYTHAM

TESTING IS BELIEVING

Written by LEE LAWRENCE

From the peak of Cerro Pachón in Chile, the 8.4-meter-wide telescope of the Vera C. Rubin Observatory is set to start scanning the skies this summer. Equipped with the world's largest digital camera, it will capture images with an unprecedented resolution of 3.2 gigapixels.

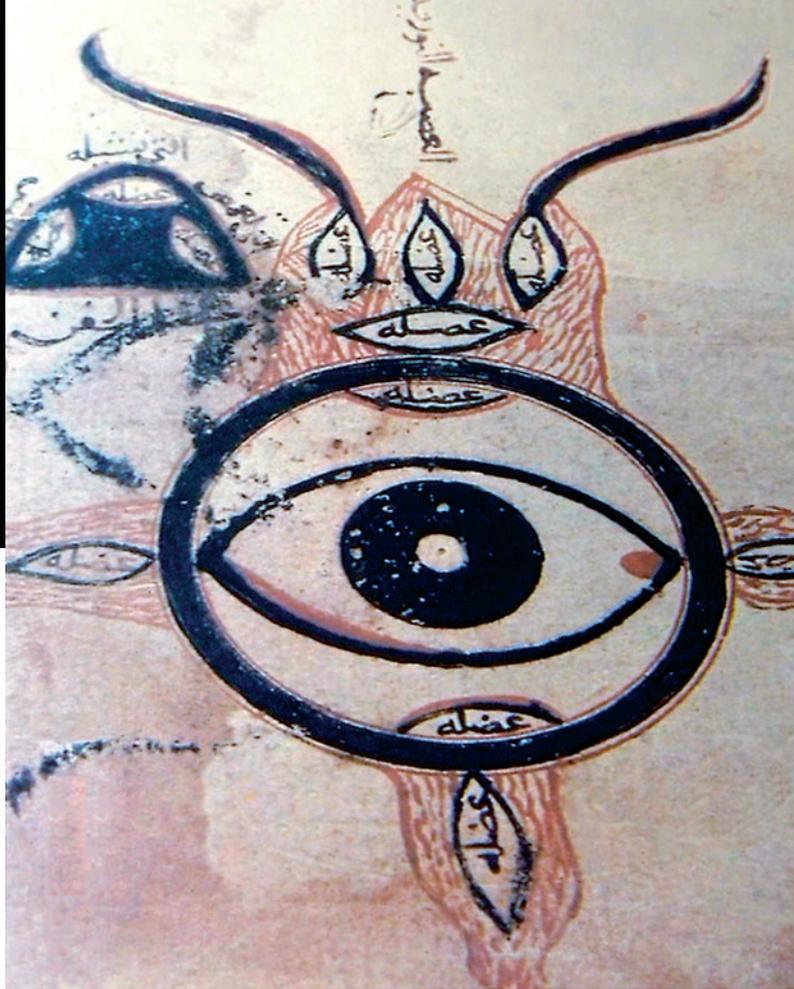
Among the astrophysicists and astronomers eager to scour these super-detailed views of the universe is Burçin Mutlu-Pakdil, Ph.D., who teaches at Dartmouth College. “My fascination with space was purely...” she pauses, looks up as though tracing the arc that has taken her from her 2009 bachelor’s degree in physics at Bilkent University in Ankara, Turkey, to her 2016 discovery, as a doctoral student at the



University of Minnesota, of a new type of galaxy.

“There was this middle school assignment,” she says, face and hands animated, “which was ‘Write an essay about your ideal person.’” She asked her sister, “‘Who is the cleverest person in the world?’ ‘Probably Einstein. Check it out.’”

Mutlu-Pakdil did, and there she discovered the world of science and, specifically, “black holes [and] mysterious



Probably drawn in the 12th century, this diagram of the optics of the eye was based on Abu 'Ali al-Hasan ibn al-Haytham's early-11th-century *kitab al-manazir* (*Book of Optics*). **OPPOSITE** This artist's rendering of the Burçin galaxy shows its two rings of stars. **LOWER** Astrophysicist Burçin Mutlu-Pakdil stands under the 8.2-meter telescope at Maunakea, Hawaii.

are the oldest. They are the least chemically enriched systems. And they are the most dark-matter dominated." Unlike her celestial namesake, these so-called dwarf galaxies are also the most common galaxy in the universe.

Thanks to the Rubin Observatory's telescope and camera, she hopes to "discover basically hundreds of these faint galaxies" that can shed light on, "ultimately, the nature of dark matter and galaxy formation."

While Mutlu-Pakdil's research questions and equipment would astonish scientists of old, to Nader El-Bizri, recipient of the 2014 Kuwait Prize for Arabic and Islamic Scientific Heritage, it seems clear that much would also feel familiar, particularly to Abu 'Ali al-Hasan ibn al-Haytham, who is often known in the West as Alhazen. Born in 965 CE in Basra (now present-day Iraq), Ibn al-Haytham was a polymath who, says El-Bizri, studied physics through the lens of mathematics.

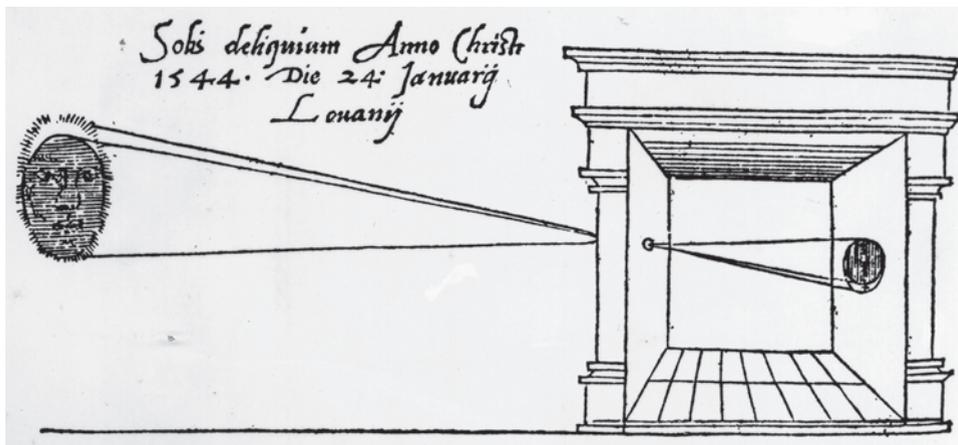
The Greeks, El-Bizri explains, had regarded physics and mathematics as distinct ways of studying reality: Physics described a dynamic, tangible world of movement and flux, whereas mathematics described an unchanging, abstract world. Along comes a generation looking for ways to merge these into a single science, and two aspects of Ibn al-Haytham's work particularly stand out, says El-Bizri, who currently serves as dean of the College of Arts, Humanities, and Social Sciences at the University of Sharjah in the UAE: "the experimental method and the 'geometrizing' of the study of natural phenomena."

This is what Ibn al-Haytham did in studying light. Though some before him had also believed that light traveled in straight lines, it was Ibn al-Haytham who first applied mathematics to explain how light rays actually behaved. As ingenious as this

was, what truly sets Ibn al-Haytham apart is that he did not stop with assertion: He devised experiments to find out whether rays really did travel in straight

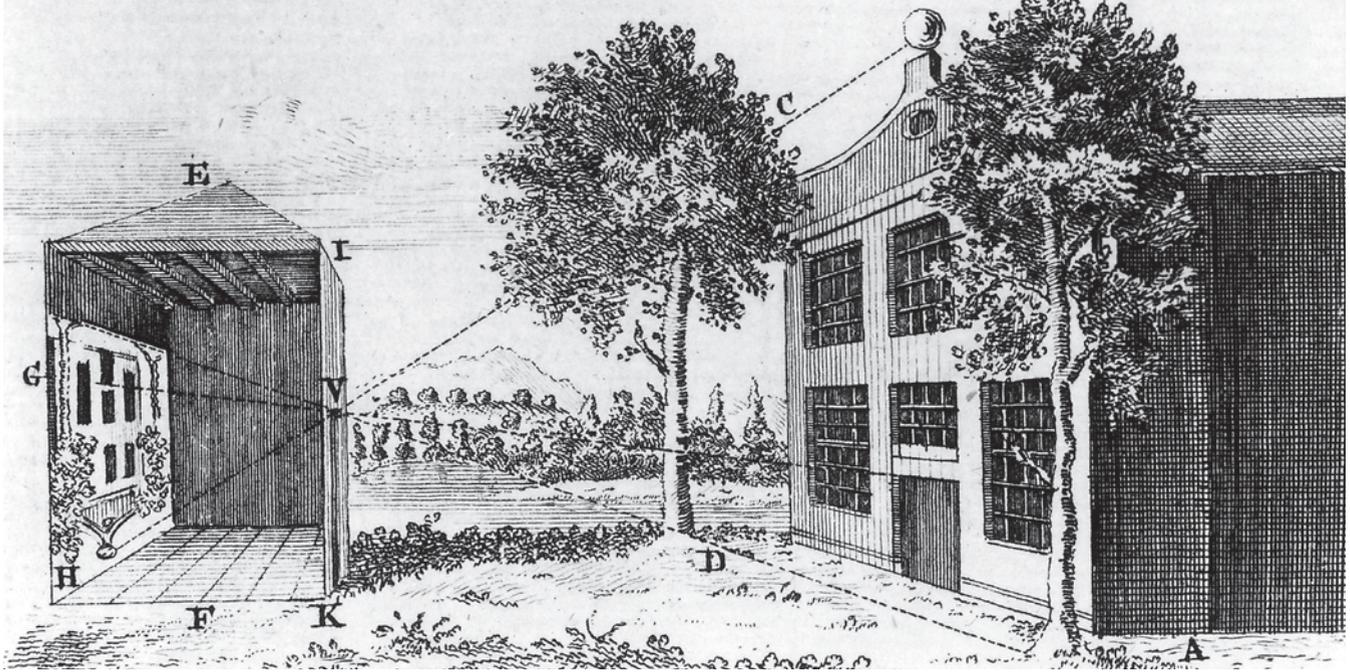
objects in space," she says. Years later Mutlu-Pakdil was analyzing images of a galaxy some 359 million light years away from Earth. She and her team initially interpreted them as showing a rare, ringed formation known as a Hoag's object, due to what seemed like a central ball of stars encircled by a fainter ring of stars. But when Mutlu-Pakdil filtered out some of the brightness at the center, she discovered a second, diffuse ring of stars that were redder, and hence older. Nothing else like this had ever been seen. Now officially catalogued as PGC1000714 and nicknamed the Burçin galaxy, this discovery hooked Mutlu-Pakdil on "extreme galaxies," she says, "any extreme galaxy."

She currently has focused her gaze on galaxies with just a few billion stars—far fewer than our Milky Way's estimated 100 to 400 billion. "They are the smallest. They are the faintest. They



This diagram of a partial solar eclipse, drawn in 1544 by Dutch mathematician Gemma Frisius, is the first illustration of a camera obscura printed in Europe, more than 500 years after Ibn al-Haytham used such a test to understand that light indeed travels in the straight lines he had hypothesized. Note that the eclipse appears upside down on the wall.

Fig. 7. CAMERA OBSCURA. B



This illustration of a camera obscura appeared under "Artist's Aids" in the 1754 *Dictionary of Arts and Sciences*. The image on the wall appears just as images do both to the eye—where the brain turns it around for us—and to cameras.

lines and to observe how light behaved under varying conditions, thus testing theories about everything from rainbows to how light moves through different transparent mediums—refraction. Many of these experiments he detailed in his *Kitab al-manazir* (*Book of Optics*), completed sometime before his death in about 1040 CE. Within 200 years, a Latin translation began circulating in Europe under the title *De aspectibus*.

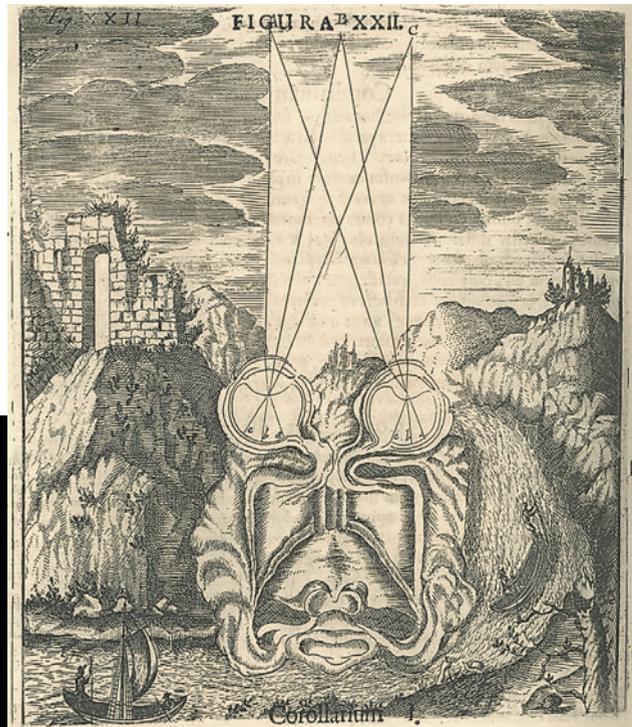
Ibn al-Haytham's experiments ranged from the simple to the complex. In addition to observations about sunlight, firelight and other forms of light, he described testing the theory that light

travels in straight lines by placing candles

at various distinct locations in the same area, and when they all face a window that opens into a dark recess, and when there is a white wall or [other white] opaque body in the dark recess facing that window, the [individual] lights of those candles appear individually upon that body or wall according to the number of those candles; and each of those [spots of light] appears directly opposite one [particular] candle along a straight line passing through the window. Moreover, if one candle is shielded, only the

light opposite that candle will be extinguished, but if the shielding body is lifted, the light will return. And this can be tried anytime.

In another experiment, Ibn al-Haytham built an enclosed space in which the only



FAR LEFT In the 14th century in Tabriz, Persian polymath Kamal al-Din al-Farisi produced an elaboration of al-Haytham's pioneering work. **LEFT** In 1685 in Bavaria, Johann Zahn's treatise on optics drew on al-Haytham's principles, too.

source of light was a small hole in one wall. Now heralded as the world's first systematically recorded *camera obscura* (literally “dark room”), this innovative experiment led ultimately to the photographic camera. Ibn al-Haytham constructed his camera obscura to both confirm how light travels and deepen his understanding of how we see. He observed that the faint image of the scene outside on the wall opposite the hole was correct in all its details except that it was flipped upside down and backward—because light travels in straight lines. (See illustrations.)

This and other experiments bolstered Ibn al-Haytham's theories about sight. In his time, the dominant theory was that we see because our eyes shoot out a beam that widens into a cone of light, somewhat like a superhero deploying X-ray vision. Ibn al-Haytham argued it was the other way around. Light, he postulated, travels *into* our eye through the pupil, just as it does through the pinhole in the wall. This is the physiological and physical aspect of sight, El-Bizri explains, adding that Ibn al-Haytham was the first to understand that vision is also cognitive.

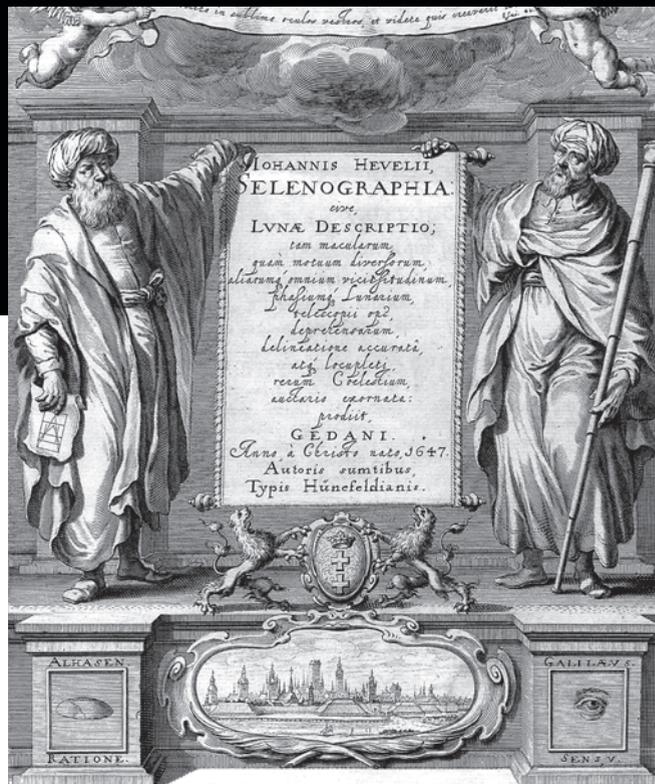
“I do not simply see because of the light coming into my eyes and leaving an impression on the optic nerves and even touching my brain,” El-Bizri summarizes. Ibn al-Haytham, he says, argued that there is also “an investing of the faculties of imagination, memory, discernment, syllogism. I don't see if my mental faculties are not engaged in determining the intended meaning behind what I see.”

Similarly, his work in such things as refraction proved crucial to our understanding of optics. If you stand in a swimming pool and look down, for example, the part of your legs that are under water appear stubby and distorted. If you place a drinking straw in a glass of water, from the side it looks severed at the waterline, as the top and bottom no longer align. Remove the straw from the water and the illusion disappears. The only thing that has changed is the medium through which you're viewing the straw—air versus water. Although others had observed this phenomenon, Ibn al-Haytham crystallized it in mathematical formulas that by the 1200s CE helped scientists in Italy develop the first eyeglasses. His notes on experiments with refraction and reflection through convex and concave lenses helped Dutch scientists in the 1600s develop the telescope.

More broadly, Ibn al-Haytham's work set the course for the field of science itself: The 13th-century-CE English empiricist Roger Bacon cited Ibn al-Haytham extensively and, as El-Bizri points out, the 17th-century Polish astronomer Johannes Hevelius chose to depict Ibn al-Haytham on the frontispiece of his 1647 book *Selenographia*, which provided the first attempts at mapping the moon.

In the centuries that followed, however, many scholars outside the Islamic world let Ibn al-Haytham's contributions

In 1647, in the book that presented the first detailed maps of the moon, astronomer and mayor of Gdansk, Poland, Johannes Hevelius placed al-Haytham on the left side of his book's frontispiece, opposite Galileo.



Al-Haytham observed light under different conditions, and he devised tests for everything from rainbows to how light moves through transparent mediums—refraction.

slip below the horizon as they focused on the likes of Bacon and his teacher, Robert Grosseteste, who pursued both science and theology to explain natural phenomena. Up to the 20th century, El-Bizri says, most Western historians of science attributed the experimental method to Grosseteste. But today, scholarly circles

across the globe look increasingly to Ibn al-Haytham, including even the UK-based Ordered Universe Project, which focuses on Grosseteste's legacy. Now, says El-Bizri, who is himself affiliated with the group, “they are fully convinced that whatever they have thought about Grosseteste is indicative of their not being aware of earlier approaches to experimentation. ... They have now moved that milestone by two centuries to the work of Ibn al-Haytham.”

Though Ibn al-Haytham worked with candles and a hole in a wall, it might not take him long to appreciate the new instrument on Cerro Pachón—our generation's newest pinhole through which we will observe, analyze and learn about our universe. 🌐

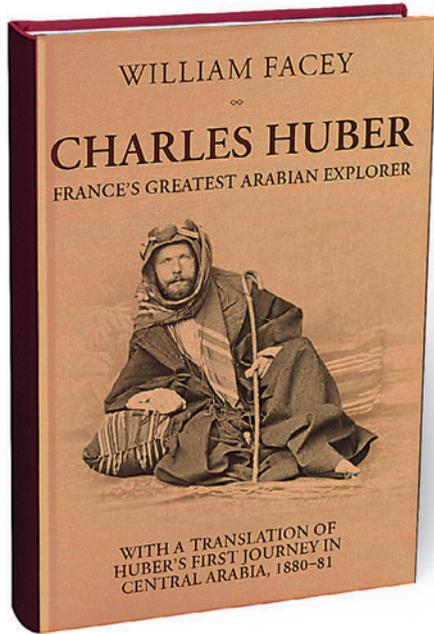


Based in Brooklyn, New York, **Lee Lawrence** (leedairlawrence.com) writes frequently on Islamic and Asian art for *The Wall Street Journal* and cultural affairs for *The Christian Science Monitor*.

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Arab astronomy: Jan / Feb 1986



REVIEWS



“If I were rich, so deep is my love for Arabia and science that I would undertake these excavations at my own expense, but I am not.”

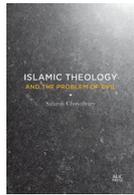
—From a letter by Charles Huber, dated July 6, 1884

Charles Huber: France's Greatest Arabian Explorer

William Facey. Arabian Publishing, 2022.

In this first-ever biography of Charles Huber, and the first English translation of Huber's narrative of his earliest journey in Arabia, Facey, a historian, rescues Huber from obscurity and places him in the pantheon of early European explorers Niebuhr, Palgrave and Doughty. Huber, a French-Alsatian geographer, traveled in central Arabia in 1880 and 1883, mapping and copying rock inscriptions. His obscurity likely stems from his dry style of cataloging topographical features, weather and place names. Facey reveals much about the hardships Huber endured and the warm relations with Arabs he cultivated, and he is careful to also explain how the explorer's reckless nature—often making rash decisions to travel into areas without guarantees of protection from tribal leaders—contributed to his murder by guides near Rabigh, along the Red Sea. Rather than the purple prose of Victorian-era adventure yarns, this work does well in restoring an overlooked story of Arabian exploration. —KYLE PAKKA

Without endorsing the views of authors, the editors encourage reading as a path to greater understanding.

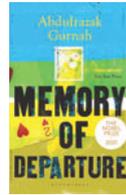


Islamic Theology and the Problem of Evil

Safaruk Chowdhury. AUC Press, 2021.

Chowdhury, an Islamic philosopher, grapples with a fundamental quandary found within Abrahamic faiths: How it is possible that God, “perfectly good, compassionate, merciful, powerful, and wise,” can allow evil and suffering in the world? It’s a question, one that most people of faith have had to contend with as they confront evidence of the reality of evil and conceptions of a deity that is perfect but still allows bad things to happen. Wading deep into various philosophical explanations and theological traditions, Chowdhury uses each framework to coolly examine the nature of evil via four specific categories—human disability, animal suffering, evolutionary natural selection and hell. It is to his credit that he dissects both the narrow and far-reaching implications of each interpretation while staying focused on “providing intellectual resources and not finished answers.”

—DIANNA WRAY

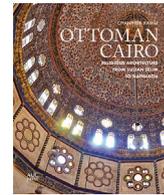


Memory of Departure

Abdulrazak Gurnah. Bloomsbury Publishing, 1987.

This novel by the Nobel Prize in Literature recipient follows a young Hassan, who, raised in a poor and abusive household, dreams of a future full of prosperity and, most importantly, freedom. Everything changes when Hassan moves from East Africa to his estranged, wealthy uncle’s home in Nairobi. He hopes to receive his mother’s half of the family’s inheritance, which his uncle unfairly took years ago. However, Hassan learns that riches lead to other, complicated issues. Developing relationships with his relatives, Hassan contemplates his future and what he truly desires. Gurnah’s quintessential keen attention to detail, helps paint the picture of a young man on the cusp of life, figuring out his future while reconciling the past. This story combines both the past and future of Hassan’s family to culminate in a complicated and adept story of hope and loss.

—HANNAH STERENBERG



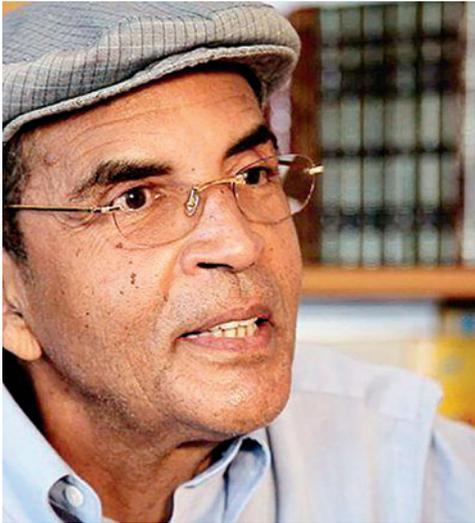
Ottoman Cairo: Religious Architecture from Sultan Selim to Napoleon

Chahinda Karim, AUC Press, 2021.

This work challenges a common misconception among scholars that Ottoman religious architecture in Egypt, from the 16th to 18th century, represents a decline in skill and attractiveness from the architecture of the preceding Mamluk period. The book shows how Mamluk religious structures influenced the Ottoman newcomers and their search for a new local architectural identity. The chapters follow a century-based chronology showing the gradual evolution of a freshly emerging Ottoman identity echoing that of the empire’s capital Istanbul. The book features a special chapter or annex on Ottoman-style *sabil-kuttabs*, structures with a cistern/drinking fountain on the lower floor for the general public and a neighborhood Islamic elementary school on the second floor for orphans and poor children.

—ROBERT W. LEBLING

AUTHOR'S CORNER



The Night Will Have Its Say

Ibrahim al-Koni. Trans. Nancy Roberts. AUC Press, 2022.

Thirst for the Desert: A Conversation with Ibrahim al-Koni

by DIANNA WRAY, translated by NANCY ROBERTS

Although now one of the most acclaimed writers in the Arabic world, Ibrahim al-Koni spent his earliest years completely immersed in the language and stories of Tuareg oral culture—a historically nomadic Berber tribe in northwest Libya. In fact, he was 12 before he learned to read and write in Arabic. After studying comparative literature at the Maxim Gorky Literature Institute in Moscow, although al-Koni worked as a journalist based in Moscow then Warsaw, his own writing remained locked on the undulating sands of his native land, a passion that has produced more than 80 books, including his most recent novel, *The Night Will Have Its Say*. With this third novel placed during the Muslim conquest of North Africa in the seventh century CE, written from the perspective of the conquered, he once again returns to the desert that has remained his spiritual home despite having moved to Europe in the 1990s.

How did growing up in the desert and in the Tuareg tradition shape the way you look at the world?

As the birthplace of creation, the desert is the source of the existential questions I pose in all my writings. The reason the desert, the place I come from, is alien to us can be traced to modern people's tendency to see it as an empty

void. However, the spiritual wealth of the desert is immeasurably greater than its material wealth. Indeed, it is the sanctuary from which waters of the timeless deluge receded at the dawn of creation, causing the depths to witness the birth of dry land, inaugurating the era of our existence on this planet.

Did learning to read in Tifinagh, the script used to write Tuareg Berber, first have an impact on how you approached stories?

Although I did not learn to read and write Arabic until later, I learned to read and write in Tifinagh quite young. The Tifinagh alphabet, the world's most ancient and majestic language, captivated me from a young age. When my mother began teaching me its legendary symbols, I would go practice with the desert, mastering the art of tracing the symbols out on the pages of sand, exploring their mysterious shapes and musical logic, and interrogating the intuition that whispered their ancient secrets.

So far you've published more than 80 books. What keeps you writing at such a fast pace?

As someone possessed by a cosmic concern, I have to revolt against traditional habits, addict myself to isolation, and treat time with the understanding that disregard for the moment is disregard for the minute; disregard for the minute means disregard for the hour; disregard for the hour means disregard for the day; disregard for the day means disregard for the months; disregard for the months is disregard for the years, and disregard for the years is disregard for my entire lifetime! When we operate according to this rule, work becomes a way of repaying a debt for something that came as a gift, and it's our duty to treat it with the veneration it deserves, because this is all we have. Work is a holy of holies, and we mustn't allow anyone to take it away from us.

Your books have been translated into more than 35 languages. What do you look for in a translator? How do you ensure nothing gets lost in translation?

Translations receive no recognition from me unless the translator has outdone himself or herself, which can only happen if he or she has a touch of madness. Most translators are only *mutarjims*, those who translate as a profession, and not *tarjuman*, those who regard translation as a mission. They engage in the translation process without fully grasping the culture of the language from which they are translating, and the result is catastrophic, something I've personally experienced. Good translations require a *tarjuman*.

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EVENTS

Highlights from
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schedule before visiting.

CURRENT / MARCH

The Majlis: A Meeting Place is a traveling exhibition inspired by nomadic architecture and designed by internationally acclaimed bamboo architects Simón Vélez and Stefana Simic. It explores the origins of the majlis structure and the artisans, craftsmen and specialists who have become part of its history. To reflect the communal experience of a majlis, there are workshops, public lectures, a garden showcasing Qatar's flora, and Qatari artists who practice the local tradition of al-Sadu weaving. Qatar Museums, **Doha**, through March 31.

CURRENT / APRIL

Afghanistan My Love demonstrates how art can be used for connection during times of adversity. Featuring the work of art collective ArtLords and Afghan Canadian artist Shaheer Zazai, it offers visitors a glimpse into an Afghanistan that is more than a physical place—it is a home, a memory and an identity. Aga Khan Museum, **Toronto**, through April 10.

Perceptible Rhythms/Alternative Temporalities features 12 artists from the Middle East and South Asia who explore the impact of conflict, urbanization and the climate crisis on their environments, as well as the ways in which humankind can better care for the planet. Artists use multimedia, installation, photography, drawing and painting, to explore ways to live in harmony with the planet by reconnecting with past cultural histories,

remembering extinct plant species and imagining alternative ways for humankind to attune to nature. Middle East Institute, **Washington, D.C.**, through April 28.

CURRENT / MAY

Alexandria: Future Anteriors revisits the past and present of the Egyptian city, far from the myths and stereotypes traditionally associated with it. Showcasing some 200 artifacts covering a period of eight centuries, the exhibit highlights the heritage and legacy of Alexandria by addressing not only its urban, political and religious organization but also the daily lives of its inhabitants, as well as the scientific and philosophical influences of this high civilizational place of the ancient world. Mucem, **Marseille**, through May 8.

Jordan Nassar: Lē'ahi uses a variety of materials to explore concepts of heritage and homeland. Across multimedia installations that have included hand embroidery, wood inlay and glass, Nassar celebrates Palestinian identity, diaspora and belonging. The shift in visual orientation creates a unique language through which to craft imaginative landscapes that convey joy and contemporaneity. **Honolulu** Museum of Art, through May 27.

CURRENT / JUNE

Landscape of Memory presents artistic installations from seven artists created from 1998 to 2011. Drawn from the collection of the Barjeel Art Foundation in Sharjah, UAE, the exhibition's

works probe questions of causes and effects of war, personal and national identity, exile and belonging, and memory and commemoration in films, paintings, sculptures, photographs and multimedia displays. McMullen Museum of Art, **Boston**, through June 4.

CURRENT / SEPTEMBER

Sharjah Air Station: The First Landing 90 Years Ago commemorates the UAE's 90 years of prosperity and development in the aviation field and the first aircraft landing in Sharjah. It also displays a collection of photographs, the approval agreement for the establishment of the first air station in Sharjah, the construction stages, the first landing moment, and the route of the flights from which it was departing. Al Mahatta Museum, **Sharjah**, through September 3.

Artists making books: poetry to politics highlights the relationship between artists and poets, and the influences that inform their work, from family to politics and everything in between. This small yet powerful display features works made by artists from New York to Damascus and beyond, including classical poetry and literature. The British Museum, **London**, through September 17.

Readers are welcome to submit event information for possible inclusion to proposals@aramcoamericas.com, subject line "Events."



The Future of Traditions, Writing Pictures: Contemporary Art From the Middle East

features three generations of artists from the Middle East, from the early pioneers of a vernacular Lettrism movement in the 1960s until now. These artists take inspirations from their own cultures using the morphology of letters and phonemes, the rhymes and rhythms of calligraphy, as well as abstractions of words into pictures and thoughts into images. The result over the past six decades has been the creation of alternate approaches to modernism and contemporary art. Brunei Gallery, SOAS, **London**, through March 25.

Rachid Koraïchi, "Untitled," 1981, mixed media on paper, 110 x 220 centimeters.



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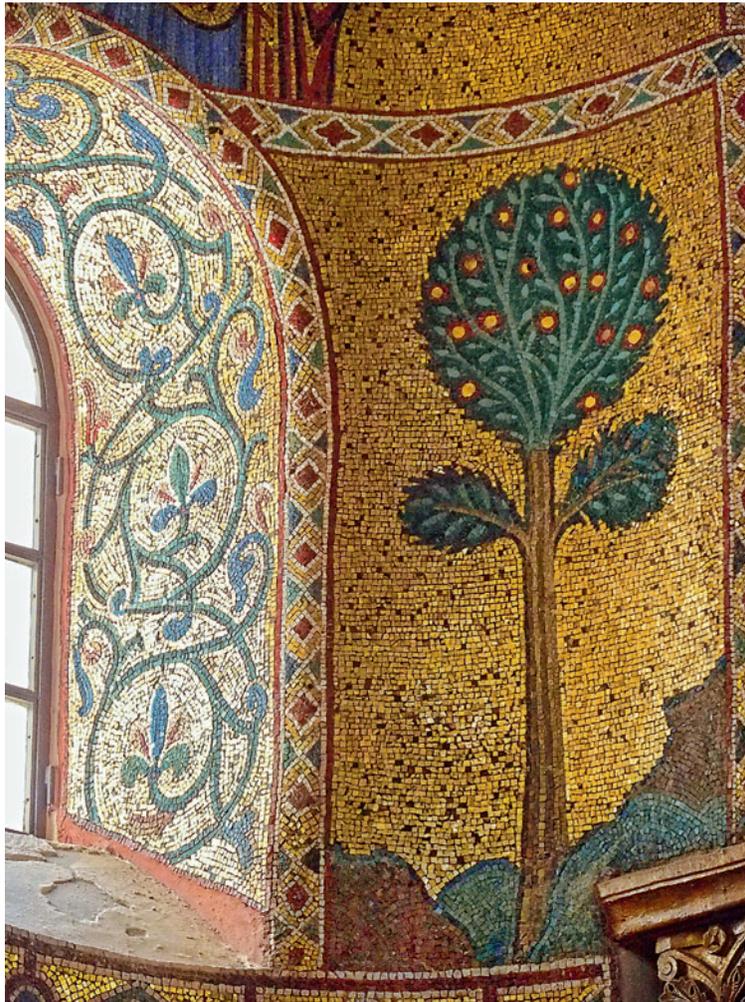
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