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Gentle Jerba

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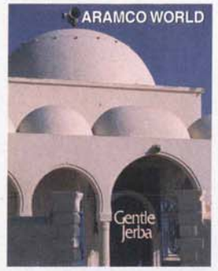

Front Cover: Early-morning light turns the thick adobe walls of the Mosque of the Mahboubine a delicate pink, and deepens the Tunisian blue of its wrought-iron gate. The mosque is one of almost 300 on the tiny island of Jerba, which produces dates, olive oil, sponges, pottery and textiles. Photo: Nik Wheeler. Back Cover: Hakeem Olajuwon of the Houston Rockets waits for his moment in the NBA championships. Photo: Marc Morrison/Allsport.

◀ Triangular sails dot a canal in the Nile Delta as the *Graf Zeppelin* cruises toward Cairo.

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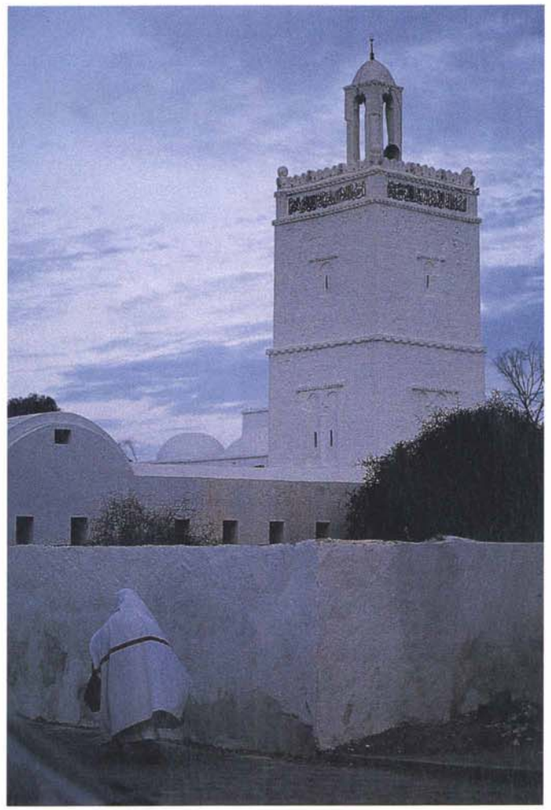
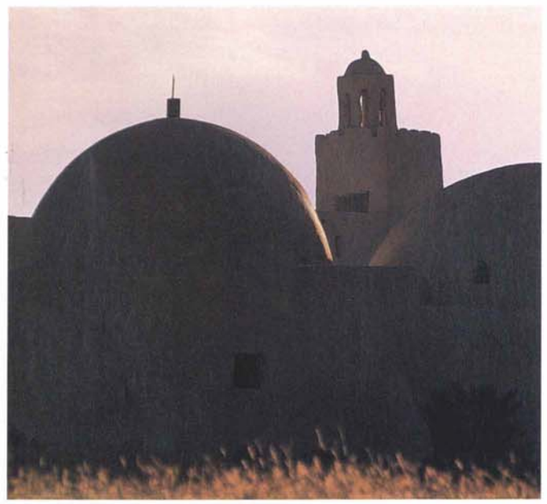
THE WHITE MOSQUES OF JERBA

WRITTEN BY MICHAEL BALTER
PHOTOGRAPHED BY NIK WHEELER

French visitors to Jerba, the largest island off the coast of Tunisia, call this oasis of date palms and olive trees "Jerba la Douce" – gentle Jerba. The secret is in the wind. From March to October the parched Sahara gasps in lungfuls of humid Mediterranean air, drawing sea breezes across the island from the east and northeast. These winds ripple through the flat white sands day and night, rendering the air over Jerba, in French writer Gustave Flaubert's hyperbole, "so soft that it hinders death."

These glimmering, whitewashed structures dominate the landscape, their colors shift with the changing light, and their flights of architectural fantasy seem to come in an infinite variety.





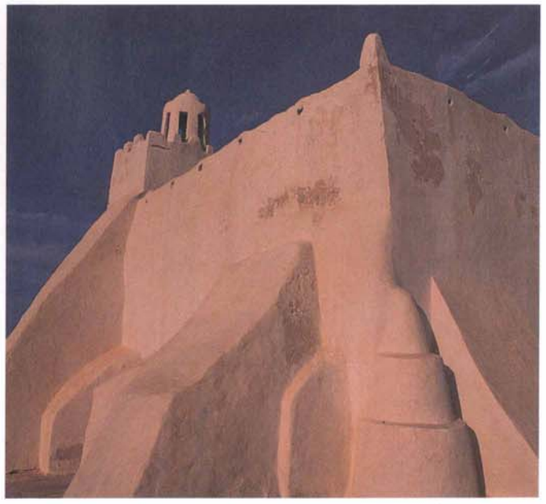
In 1881, Tunisia became a French protectorate, and artists and writers came to Jerba to bask in the glow of ancient civilizations, or at least in the brilliance of an island sun. But when the country gained its independence in 1956, the island was free to fall back on its own customs.

Thus, despite the flourishing of tourism and the building of almost 50 resort hotels along its northeastern coastline, Jerba remains a sanctuary for the old ways, a bastion of tradition that continues to resist the rapid changes taking place in many North African cities.

Perhaps the most striking example is the preservation of Jerba's almost 300 mosques, an extraordinary number for an island that measures only 514 square kilometers (185 square miles) and is home to some 120,000 people. These glimmering, whitewashed structures dominate the landscape, their colors shift with the changing light, and their flights of architectural fantasy seem to come in an

infinite variety. In Houmt-Souk ("market square"), Jerba's capital, the most famous are the Mosque of the Strangers, covered with cupolas, and the Mosque of the Turks, with its massive minaret. The village of El May boasts an imposing example of a fortress-mosque, with narrow gun slits and thick walls, and the tiny port of Adjim impresses us with sheer numbers – 16 mosques in all.

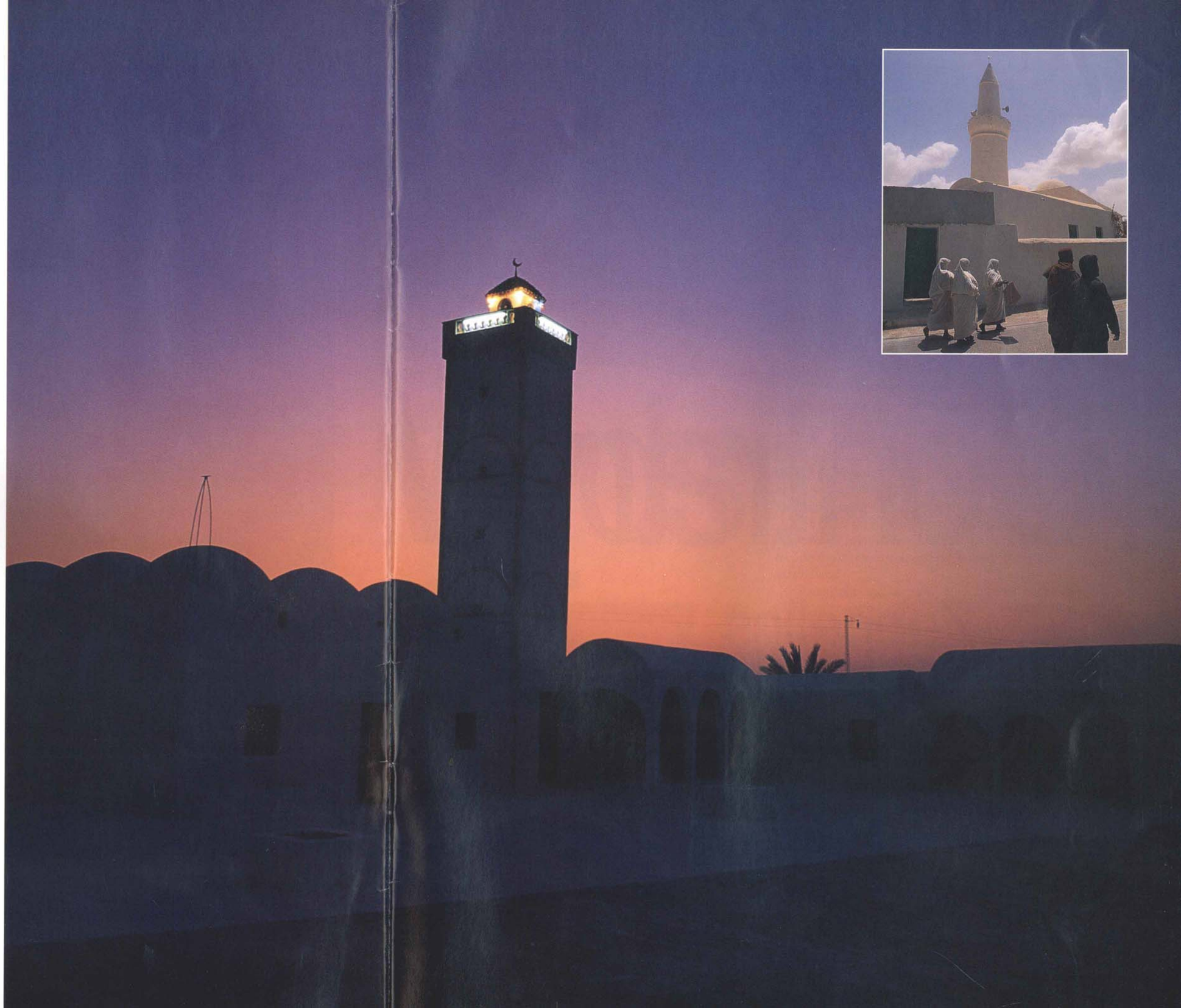
But despite this diversity, two basic forms can be discerned on the island, corresponding to the two principal schools of Islamic thought here – the Malakis and the Hanbalis. The minaret of the Malaki mosque is tall and slender, while its Hanbali counterpart is a lower, squared tower topped with a lantern-shaped skylight. Most of the mosques, however, have the same basic interior plan: a large prayer hall, one or more rooms for washing before prayers, and several rooms for housing pious visitors, all surrounding a central courtyard built over a cistern.



As for the names of the mosques, they are often derived from the teachers who are said to have founded them, or from the legends which surround their origins. A typical example is the Jamaa Ellile, as it is pronounced locally: the Mosque of the Night, just outside the village of Guellala. The story goes that when the workmen came to build it, they got everything ready – the bricks, sand and lime – and then went to sleep, intending to start early the next morning. But when they awoke, they found the mosque standing before them, already miraculously built.

Walking around Jerba in the soft dawn light, one can believe that such wonders occur. Or, as the mosques shade from grey to shell pink to brilliant white, one can believe that they themselves are wonder enough.

Michael Balter, an American free-lance journalist, writes for the International Herald Tribune *and* Bon Appétit *and serves as the principal Paris correspondent for the journal* Science.



Length: 236.6 meters (776 feet)

Diameter: 30.5 meters (100 feet)

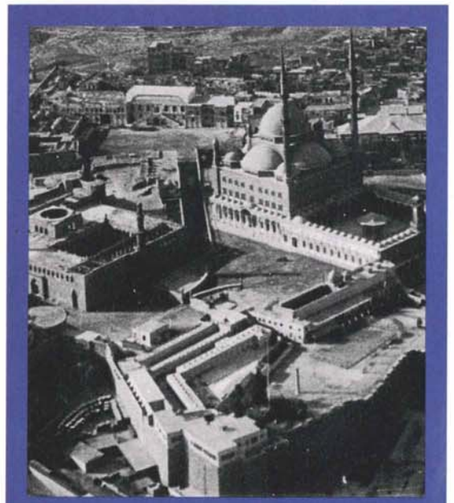
Gross Weight: 150 metric tons

Measuring 25 feet longer than the base of the Great Pyramid of Cheops – and three times the length of a Boeing 747 – the *Graf Zeppelin* looms over the Cairo Citadel on its way back to Friedrichshafen.

Contrary Winds

Zeppelins Over the Middle East

WRITTEN BY ALAN McGREGOR
PHOTOGRAPHS COURTESY OF
LUFTSCHIFFBAU ZEPPELIN GMBH



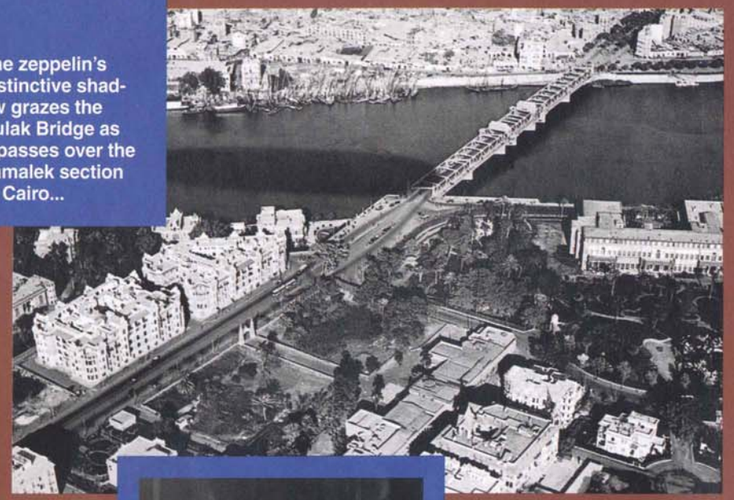
"The Egyptian people, through no fault of their own, are being prevented from witnessing a magnificent spectacle. This is due to [British] envy of the thoughtful, hard-working German nation, which is developing so quickly and outclassing most other countries, particularly in aviation. As a result, the people cannot see the [Graf Zeppelin], and it will not see the Suez Canal."

That dispatch in Egypt's *Al-Ahram* newspaper of March 24, 1929, from correspondent Mahmud Abul Fath – already known as a forthright critic of Britain's role in his country – reflected popular indignation at the Egyptian government's refusal, on British "advice," to allow the great German dirigible to enter Egyptian air space during its first trip to the Middle East.

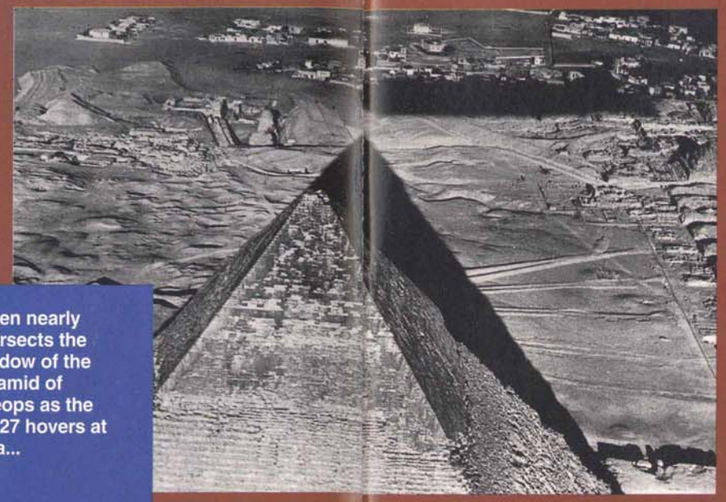
As a guest on that trip from March 25 to 28, Abul Fath was cabling from Friedrichshafen, on Lake Constance, the airship's base and site of Luftschiffbau Zeppelin's main plant.

"Everything had been prepared to give this voyage an Egyptian setting," Abul Fath wrote, "even a postage stamp depicting the airship over the Sphinx and the Pyramids. With the exception of Egypt, all countries contacted have authorized it to cross their territory" – including Palestine, then under British mandate. Abul Fath quoted Dr. Hugo Eckener, the *Graf Zeppelin's* captain, as saying, "The clouds in the skies of international politics are looming ever larger."

Because of such clouds, the *Graf Zeppelin*, with 41 crew and 25 passengers – among them Reichstag President Paul Loebe, *Al-Ahram's* Abul Fath and two Hearst Newspapers representatives – had to leave Friedrichshafen on March 25 at the inconvenient hour of 45 minutes past midnight. The French government had permitted the airship to cross its territory only during darkness, and at an altitude not lower than 1100 meters (3600 feet). Warm clothing – fur coats for the women – was obligatory: It was Europe's coldest winter in half a century, and the zeppelin's onboard heating had to be supplemented by

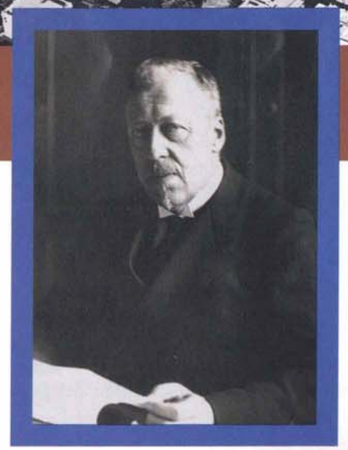


The zeppelin's distinctive shadow grazes the Bulak Bridge as it passes over the Zamalek section of Cairo...



...then nearly intersects the shadow of the Pyramid of Cheops as the LZ127 hovers at Giza...

...and finally passes by the Mosque of Ibn Tulun as it gains altitude for the flight home.



Dr. Hugo Eckener, captain of the *Graf Zeppelin* and head of the Zeppelin company.

the occasional aluminum hot-water bottle. The airship headed west toward Basel and the Franco-Swiss border, then down the Rhône Valley.

By breakfast next morning, the *Graf Zeppelin* was past Marseilles and cruising serenely in sunshine above a white-flecked Mediterranean on a course via Corsica to Rome. Circling over the Italian capital that afternoon, the captain radioed greetings to Mussolini, referring to the "genius of the Eternal City." (Eckener wondered afterward whether the Italian dictator might not have understood this phrase as a tribute to himself.) Then the airship headed for Naples and Capri – through a second night – on its way to Crete and Cyprus.

The passengers were excited, even rapturous, at experiencing the ultimate in air travel: Nothing could match the *Graf Zeppelin* in comfort or non-stop range. Of course, these luxuries came at a price: "The tariffs were extremely high," notes R.E.G. Davies, curator of air transport at the National Air and Space Museum in Washington, in his book *Lufthansa: An Airline and Its Aircraft*. He adds: "The *Graf Zeppelin*'s economics were as impractical as those of the Concorde today," and were subsidized by the German government.

The *Graf Zeppelin*'s four-day trip to the Middle East in 1929 was not her first international flight – she had flown to New York the previous November – but it was her introduction to warmer climes. "As if we were softly gliding through an infinity of misty blue, air and sea merged imperceptibly into each other," Eckener recalled in his memoirs, *Im Zeppelin Über Länder und Meere (By Zeppelin Over Lands and Seas)*. He described the passengers as being "in a mood of wordless ecstasy."

By early evening they were over Palestine, dropping a bundle of 5000 letters to the large German colony at Jaffa. They found Mount Carmel bedecked with German flags and the word "*Willkommen*" spelled out in 8-meter-high letters; then they flew along the coast to Tel Aviv, where a passenger showered confetti on the crowds below.

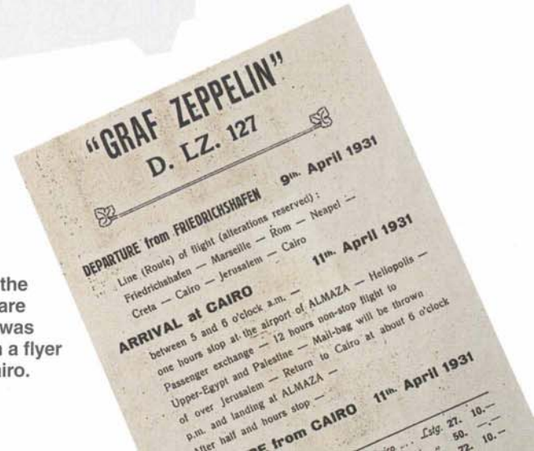
Over Jerusalem, the zeppelin's engines were briefly stopped and the airship floated silently above the walled Old City. It circled slowly on reduced power before heading over the rocky hills toward Jericho and the Dead Sea.

There, Eckener brought the *Graf Zeppelin* down close to the surface, about 300 meters (1000 feet) below the level of the Mediterranean. "The newly-risen moon gave little light, so that the great lake lay half-dark," he wrote, "mysterious as the nether world. Carefully we sank down, feeling our way lower and lower, until we hovered a few hundred feet above the water. We looked up as if from a cellar at the heights towering around us."

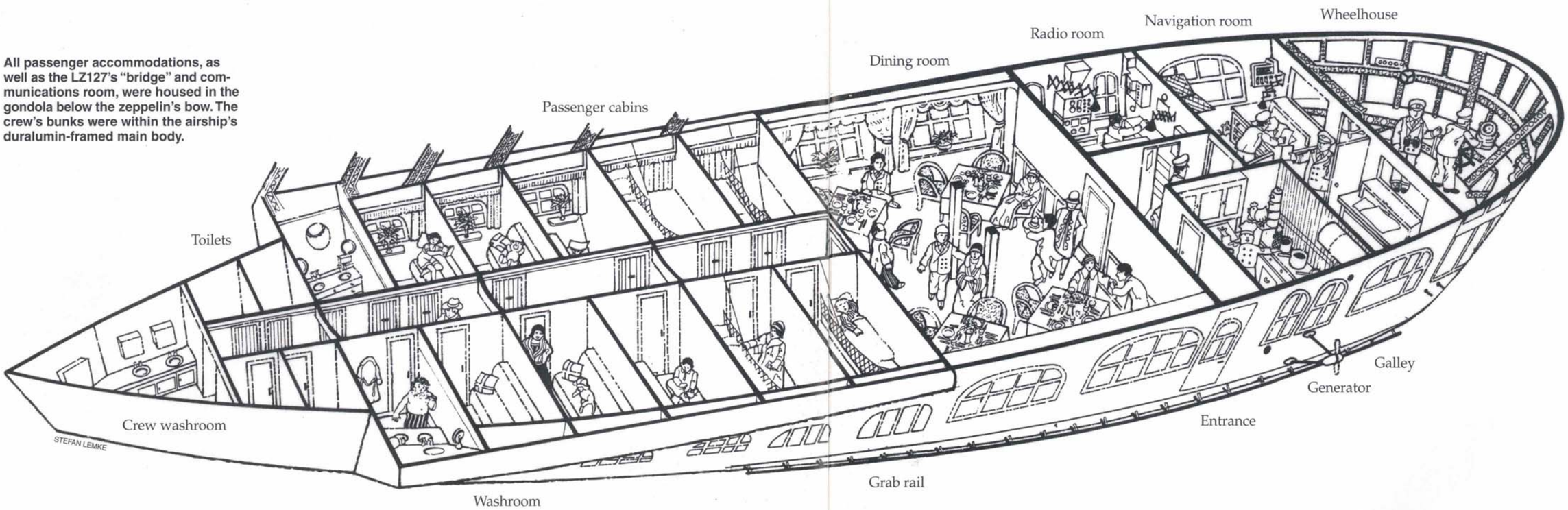
The passengers celebrated the sight. They were enjoying the finest foods and beverages during the three days and four nights of this non-stop flight. A typical luncheon menu featured turtle soup, two kinds of roast, potatoes, vegetables and salad, followed by French cheese, nut tart and coffee. Meals were served at separate tables in the mahogany-paneled main saloon, which had two large windows on each side.

At the rear of the saloon a corridor gave access to 10 cabins, each with its own window and each convertible, like a train compartment, from a sitting room by day to sleep two at night. Behind the cabins were separate washrooms for women and men, with double basins and hot and cold taps.

All these ship-style passenger accommodations were in the gondola that was integral with the forepart of the *Graf Zeppelin*, whose factory designation was LZ127. Further forward, also within the gondola, was the crew area, which consisted of radio and navigation rooms, kitchen, officers' cabin and "wheelhouse" – complete with steersman standing at the helm. The *Graf Zeppelin* was 236.6 meters (776 feet) long – three times the length of a Boeing 747 – with a maximum diameter of 30.5 meters (100 feet), two-thirds the height of the Statue of Liberty – with its pedestal. Maximum gross weight was 150 tons, including 12 tons of mail or freight, her maximum range was over 11,000 kilometers (some 7000 miles), and her cruising speed was 117 kilometers an hour (73 mph).


"GRAF ZEPPELIN"
D. LZ. 127
DEPARTURE from FRIEDRICHSHAFEN 9th. April 1931
Line (Route) of flight (alterations reserved):
Friedrichshafen — Marseille — Rom — Neapel —
Creta — Cairo — Jerusalem — Cairo
ARRIVAL at CAIRO 11th. April 1931
between 5 and 6 o'clock a.m. —
one hours stop at the airport of ALMAZA — Heliopolis —
Passenger exchange — 12 hours non-stop flight to
Upper-Egypt and Palestine — Mail-bag will be thrown
of over Jerusalem — Return to Cairo at about 6 o'clock
p.m. and landing at ALMAZA —
...ter half and hours stop —
...E from CAIRO 11th. April 1931
...July 27. 10.—
50. —.—
72. 10.—

***The Graf Zeppelin's* 12-hour pleasure cruise from Cairo to Jerusalem, Jaffa and Tel Aviv – at the substantial fare of £27 10s – was advertised in a flyer printed in Cairo.**



All passenger accommodations, as well as the LZ127's "bridge" and communications room, were housed in the gondola below the zeppelin's bow. The crew's bunks were within the airship's duralumin-framed main body.

A Secret Mission

The Graf Zeppelin's 1929 trip was not the first German venture through Middle Eastern skies. Some 12 years earlier, another, smaller zeppelin made a wartime journey in circumstances altogether unique.

This was the L59, adapted for a range of almost 16,000 kilometers (10,000 miles) at a cruising speed of 80 kph (50 mph). The L59 left its base at Yambol, Bulgaria, on November 21, 1917, carrying medical and military supplies for troops in the Makonde Highlands of German East Africa, 6985 kilometers (4340 miles) away. She was to remain there in support of General Paul von Lettow-Vorbeck's forces, a 17,000-man German "army" that sought to pin down a much larger Allied force in the area, using guerrilla tactics.

Flying along the Mediterranean, the L59 crossed the Egyptian coast undetected and was already in the vicinity of Khartoum when it received a radio message from the German High Command saying that its intended destination was falling to the enemy. So the zeppelin turned back and, despite gasbag leaks and various mechanical difficulties, made it safely back to Yambol, after covering 6705 kilometers (4166 miles) in some 95 hours.

For many years it was rumored that the recall message had been faked by the British – until the original source was conclusively identified in German World War I archives. In March 1919, Maybach, manufacturers of its engines, issued a poster showing the L59 over the Pyramids – which it had of course never visited. Although soon withdrawn from circulation, this poster led to details of the zeppelin's "GG" (*ganz geheim*, or top-secret) trip becoming public knowledge – although in Friedrichshafen, even schoolboys had known about it from the outset.

The German Navy's zeppelin L59 hovers over the Pyramids in this imaginative illustration distributed by the engine manufacturer.

The crew's quarters were tucked within the hull's main frame, which was constructed mostly of duralumin, a high-strength aluminum alloy developed in Germany. Eugene Bentele, who served on both the *Graf Zeppelin* and the *Hindenburg*, described the crew accommodations in *The Story of a Zeppelin Mechanic: My Flights 1931-38*, published in 1992 by the Zeppelin Museum in Friedrichshafen: "The bunks for the mechanics, 15 in all, were in the stern of the ship on either side of the gangway.... The two-man bunks were separated from each other and from the gas cells by canvas partitions. If you lay on your belly, it was possible to see down into the hull of the ship through an observation hole. Despite the noise of the engines in the stern, we slept well – we were certainly tired enough.... We ate four good meals a day in the crew's mess near the kitchen on one side of the gangway."

Smoking aboard the *Graf Zeppelin* was strictly prohibited: Apart from the 75,000 cubic meters (2.6 million cubic feet) of dangerous hydrogen lifting gas, another 30,000 cubic meters of *blaugas*, a fuel mixture that included hydrogen, was stored in separate gasbags. Tanks of gasoline were mounted within the frame as well, since the engines ran on either fuel.

After hovering over the Dead Sea, Eckener ordered three-quarters power to the five 550-horsepower Maybach motors, wooden propellers spun, and the *Graf Zeppelin* soared out of the Dead Sea depression. Some 20 minutes later, back over the Mount of Olives, passengers and crew gazed down on Jerusalem, conversation momentarily silenced by the beauty of the Dome of the Rock and the Haram al-Sharif bathed in clear moonlight.

Little more than three hours flying time away lay Cairo and the Pyramids of Giza, originally envisaged as the high point of the trip, where ancient and modern wonders of the world would meet. Prevented by politics from realizing his goal, Eckener set a homeward course on the third night, planning to take the airship along the Egyptian coast, just outside territorial limits.

From Jerusalem, he headed toward the Mediterranean. With a strong tail wind, the *Graf Zeppelin* averaged a record 158 kilometers an hour (98 mph) and found itself close to the Egyptian coast near the city of Rashid, or Rosetta, soon after breakfast. Eckener flashed off a radio message to King Fuad's chamberlain, asking that his greetings and best wishes be conveyed to the monarch, whose birthday it was, and also his regrets that "contrary winds prevented us from flying over the land of ancient wonders."

Turning toward home, the LZ127 headed across the Mediterranean and north over the Aegean to Athens. The zeppelin circled the Acropolis twice, dropped more mail, then crossed over the Austrian Alps and overflew Vienna on the fourth night, bound for snowy Friedrichshafen. The airship reached home early Thursday, having covered some 8000 kilometers (5000 miles) and visited eight countries in 81 hours.

Carrying Out the Dream

The first attempt to build a steerable airship – a logical step onward from lighter-than-air balloons – was made by the French in 1852. Further experimental craft followed in that country – the airship *La France* made the first fully-controlled, powered flight in 1884 – with other advances in England, Italy, the United States and especially Germany. There, Count Ferdinand von Zeppelin was pushing ahead at Friedrichshafen with development of the hydrogen-filled, rigid-framed airships to which he gave his name. The first, LZ1, flew in 1900.

A professional soldier at age 25, von Zeppelin visited America in 1863, when the Civil War was at its height. There he met President Lincoln, traveled as a foreign observer with the Union troops, and was impressed by both sides' use of tethered observation balloons. During this tour of duty, he made his own first balloon ascension in St. Paul, Minnesota. Several decades passed before von Zeppelin set forth his ideas on dirigible airships – featuring a rigid frame, an outer skin of toughened fabric and interior gas cells for static lift – in a memorandum to King Karl of Württemberg in 1887; he began working to make those ideas a reality when he left the army in 1890. An 1895 entry in his diary envisaged airship passenger and cargo services to New York.

World War I gave an enormous boost to airship development, particularly in Germany, where special hangars and landing fields, suitable for military as well as civilian use, already existed. From 1914 to 1918, German factories produced 109 airships, 89 of them zeppelins, which were used for bombing – their targets included London – and for North Sea observations. After the British had shot down and examined the wreckage of a few zeppelins, their own airship design improved: In 1919, Britain's R-34 became the first airship to cross the North Atlantic in both directions. The *Shenandoah*, built in the United States after the war for the Navy, resembled the Germans' LZ96, which had made an emergency landing behind Allied lines near Bourbonne in 1917; it was the first airship to use inert helium gas rather than highly flammable hydrogen.

Crew members of the Graf Zeppelin take time for tourism.

At the end of the war, German crews destroyed most of their remaining airships rather than hand them over to the Allies as called for in the armistice agreement. The Americans eventually did get a German airship, in the form of the helium-filled LZ126, constructed specially by the Zeppelin company (now headed by Eckener; the count had died in 1917) and flown across the Atlantic in 1924 to enter naval service as the *USS Los Angeles*. Retired in 1932, she was later recommissioned, then finally scrapped in 1939.

When completed in 1933, the *USS Macon*, also helium-filled, was the world's biggest airship until the title passed in 1936 to the zeppelin *Hindenburg*, the "flying hotel," largest and last of the zeppelins to go into regular passenger service. Its hydrogen cells burst into flames as it neared the mooring mast at Lakehurst, New Jersey, on May 6, 1937 and 35 of the 97 people on board died. The disaster followed the loss of 14 lives in the crash of the *Shenandoah* in 1925, 48 lives in the crash of the British R-101 in 1929, and 73 lives when the *Akron*, sister ship of the *Macon*, was lost in an Atlantic storm in 1933.

The *Graf Zeppelin* appeared for the last time off England's east coast in 1939, just before World War II, in an unsuccessful attempt to monitor British radar installations. When scrapped the following year, she had made 590 flights, covered 1,053,396 miles and carried a total of 13,100 passengers.

The *Hindenburg's* successor, the LZ130 or *Graf Zeppelin* II, made 30 factory and test flights, covering 23,717 miles, between September 1938 and the outbreak of World War II a year later. Eckener, wanting the airship to use safer helium instead of hydrogen, cultivated his American contacts in seeking supplies of this gas, virtually a US monopoly. While a first consignment of helium was on its way to Germany by the end of 1937, Hitler's annexation of Austria in March 1938 ended any prospect of regular supplies, and the LZ130 had to depend on hydrogen for lift. On Goering's orders, the airship was broken up in spring 1940, as was the *Graf Zeppelin* itself, the LZ127. At Friedrichshafen, war brought the airship era to a close, and work was abandoned on what would have been the LZ131.

The "contrary winds" Eckener referred to were blowing from the direction of Britain, and were generated by the airship R-101, Britain's rival to the *Graf Zeppelin*. The R-101 was close to completion and scheduled to leave the next year on a demonstration flight to India, calling at Cairo en route. In the face of rising Egyptian nationalism, London was in no way disposed to see the R-101 play second fiddle to the *Graf Zeppelin* in the eyes of the Egyptian people.

Tragically, this consideration ceased to apply when the R-101 crashed in France on October 5, 1930, killing 48 of the 54 people on board and virtually ending further British airship projects. Because of his friendship with airship experts traveling on the R-101, and in keeping with his status in the aviation world, Eckener went to London for the victims' state funeral. As he stood in the Whitehall enclosure reserved for diplomats and distinguished visitors, Prime Minister Ramsay MacDonald shook his hand and said, "Thank you, Dr. Eckener, for coming here specially to show you share our grief."

The following morning, Eckener had an appointment at the Air Ministry, where he saw Lord Londonderry and other British officials. After they had talked for a while, he was suddenly asked: "Dr. Eckener, you expressed the wish last year to go to Egypt; are you still interested in such a flight?"

In reply, Eckener observed that "unfavorable winds," of whose nature his interlocutors must certainly have been aware, had prevented the LZ127 from visiting Cairo. Whereupon he was asked, "May we now invite you to make this trip? Should you wish to call at Cairo, our troops will help you with the landing and in keeping back the crowds."

Perhaps it crossed Eckener's mind that British interests had changed: The invitation might be aimed partly at reassuring the public by showing what airships could do, and so countering the effects of the R-101 disaster, and partly at confounding Egyptian critics like Mahmud Abul Fath, for whom the previous year's refusal still rankled. Still, the offer was too good to turn down. Not only would the British permit the *Graf Zeppelin* to circle the Giza Pyramids and Cairo, but she could also pick up passengers for a day-long excursion flight, cross the Suez Canal and see Jerusalem and the Holy Land from the air. The visit, called the "Ägyptenfahrt," was scheduled for April 9 through 13, 1931.

Although described as "pleasure cruises" by the Zeppelin company, these international flights were primarily designed to keep the LZ127 in the public eye. Maximum publicity for what the airship had to offer was crucial at this juncture in facing the serious challenge represented by the Dornier Do-X flying

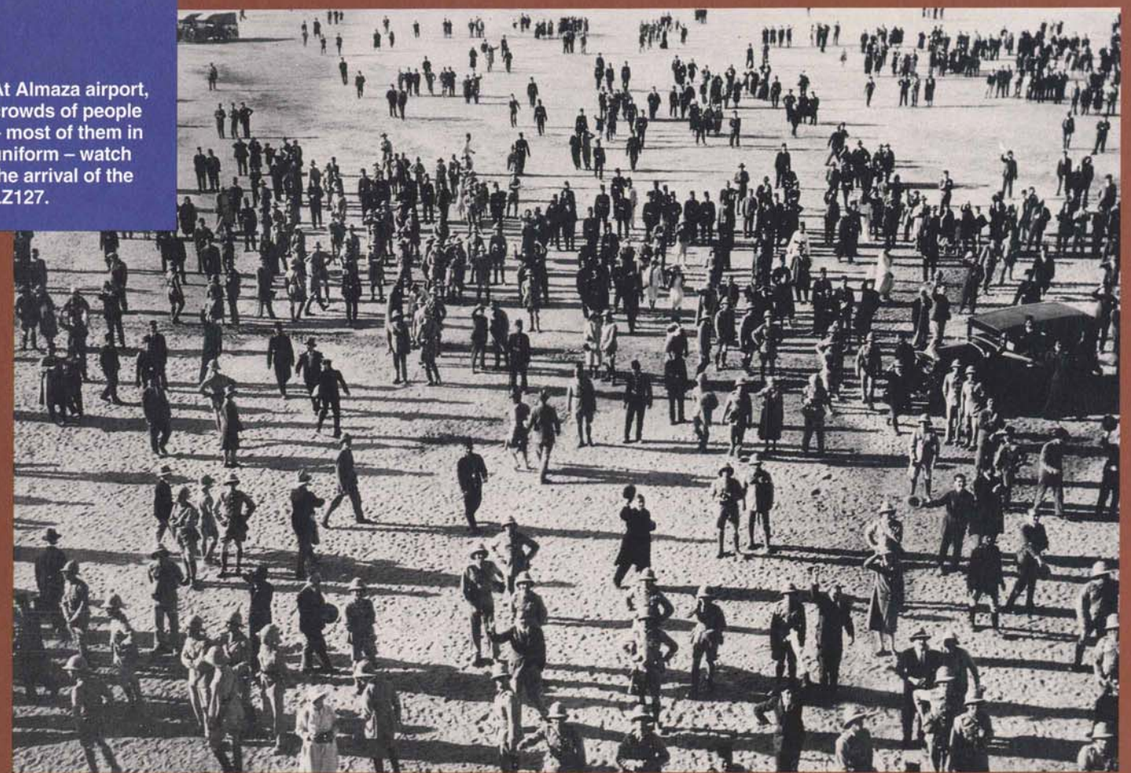

الأهرام

Al-Ahram
EGYPTIAN DAILY PAPER FOUNDED 1875

تحية قائد المنطاد زبلين للامة المصرية
تفاصيل رحلته في وادي النيل

الاستاذ محمود ابو الفتح مندوب الاهرام في المنطاد زبلين يصف الرحلة
ووصول المنطاد الى الاراضي المصرية تفاصيل وافية أخبار آخر ساعة

The front page of *Al-Ahram* reports the arrival of the zeppelin.



At Almaza airport, crowds of people – most of them in uniform – watch the arrival of the LZ127.

boat, the largest airplane yet built, which had made its maiden flight from Lake Constance on July 12, 1929.

By 1931, the *Graf Zeppelin* was providing summertime scheduled service to Brazil. But despite the zeppelin's superior range and comfort, the Do-X, because of its impressive size – with 12 engines on its single high wing – represented the handwriting on the wall for the airship era. Zeppelin and Dornier found themselves competing for state and private capital, the odds increasingly in the latter's favor as manufacturers persuaded the resurgent German military of the future role of bigger and faster planes, which were far more maneuverable – and far less vulnerable – than any dirigible could ever be.

Setting out on its second visit to the far side of the Mediterranean, the "zepp" left Friedrichshafen on April 9, 1931 at 6:14 a.m. *Al-Ahram's* Mahmud Abul Fath was once again among the 25 passengers; also aboard was Squadron-Leader R.S. Booth, commander of the successful British R-100 airship, which had visited Canada the previous year. This time the LZ127 was allowed to overfly France during daylight hours. Crossing the Mediterranean the first night, the zeppelin reached the Libyan coast near Benghazi, passed Derna and entered Egyptian airspace off Salum.

Eckener promptly radio-telegraphed *Al-Ahram*: "The crew and passengers of the *Graf Zeppelin* send heartiest greetings to Egypt through *Al-Ahram*. All aboard are very happy at the thought of being in a land of such great and ancient culture."

Flying along the Western Desert coast, with its miles of idyllic, deserted beaches and coves, they reached Alexandria at 12:55 p.m. The airship then circled the area for 40 minutes as the passengers admired the sweep of the fine seafront corniche, then headed up the Nile toward Cairo.

"I am convinced there is not a single person in Alexandria who did not see the zeppelin," an *Al-Ahram* correspondent on the ground reported. "Groups of people were at every vantage point, thousands of them on roofs, laughing and applauding. Some even thought they were personally visible to the airship's passengers and waved their handkerchiefs and shouted. We shall ask Abul Fath if he really noticed anything of all this commotion from the zeppelin itself."

Speeded by tail winds much of the way, the zeppelin arrived over Cairo at 3:20 p.m., just 33 hours after leaving Friedrichshafen. Conscious of his role as the unofficial envoy of German aviation, Eckener learned through diplomatic radio of King Fuad's whereabouts and, with Abul Fath pointing out landmarks, he brought the LZ127 over Qubbah Palace near Heliopolis and dipped its bow three times, in respect, as the king and queen waved from a balcony. Cars and buses, even trains, halted at the spectacle.

The airship turned away toward Giza, and hovered 21 meters (70 feet) above the summit of the Great Pyramid of Cheops before heading in leisurely fashion, on two or three engines, up the Nile Valley that night to Beni Suef and then back north over the Delta – Tanta, El Mahalla el Kubra, El Mansura. Returning to Cairo at 5:30 a.m., the passengers and crew noticed traffic streaming from all directions toward Almaza; a huge crowd watched as the *Graf Zeppelin* slowly circled the airport before coming in to land, with mooring ropes dangling from bow and stern.

The ropes were swiftly seized by 350 men from the nearby RAF airfield and from the King's Own regiment stationed at Abbassiya, midway between Heliopolis and downtown Cairo. They had been given a quick course the previous day on essential procedures for securing an airship, including what to do in the event of a sudden sandstorm. Mahmud Abul Fath did not take kindly to the presence of British troops: "What shocked us when we got off the airship," he wrote in *Al-Ahram*, "was that all the people around it were British soldiers – not an Egyptian in sight. It is true that Egyptians came later, but only after a time, long enough to leave the passengers with a certain impression."

A cordon of foot and mounted police strained to keep the crowd away from the LZ127, where Eckener was being greeted by government ministers and personalities. Hundreds of spectators surged toward the zeppelin, but the sweating policemen managed to hold them back a few yards from the airship's steps and clear a passage for travelers boarding to make the trip to Palestine. When the growing throng ignored calls to keep a safe distance away while the airship's engines were started, police had to force them back with fire hoses.

The zeppelin departed for Palestine without Eckener, who went off to view the Pyramids from ground level and to lunch at Shepheard's Hotel with Tawfiq Doss Pasha, Egypt's minister of communications. From there, he proceeded to Qubbah Palace for an audience with King Fuad, who had fully approved of the *Graf Zeppelin*'s proposed visit in 1929 and deplored the British veto.

Arriving over Jerusalem at 11:00 a.m., just as the sky cleared after a rainstorm and the sun broke through, the LZ127 made four circuits of the city, unfurling the German flag in salute to the Augusta Victoria Hospital on the Mount of Olives, where members of the German colony gathered to applaud its passage. After similar ovations at Jaffa and Tel Aviv, the airship returned to Egypt, and was back at Almaza by 5:00 p.m. The day-trippers disembarked and Eckener bade goodbye to his Egyptian hosts. The zeppelin then took off for home, affording passengers a farewell glimpse of the Muqattam Hills and the Citadel, rose-tinged in the setting sun.

In cruising majestically over Cairo, the *Graf Zeppelin* captured the Egyptians' imagination, their enthusiasm fired also by the belief that the spectacle was somehow symbolic, auguring well for their rising national aspirations after centuries of alien tutelage. Recollections of the airship were passed on to successive generations, and in the local language, the phrase "*zayy al-zeppelin*" (like the zeppelin) came to signify anything that was large, impressive and almost mythical in character and proportions.

Alan McGregor's introduction to both journalism and Egypt came during his World War II military service there. He was later a Cairo correspondent for BBC Radio and The Times *of London, and is now based in Geneva. The* Al-Ahram *extracts were translated by Lamia Radi.*

Star in Spirit

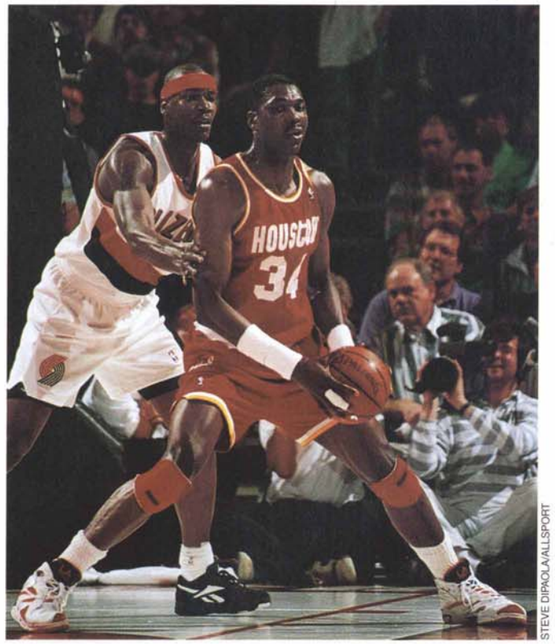
Almost 14 years ago, a towering Nigerian teenager first set foot in the United States. He wanted an education; in return, he offered a great, but unrefined, basketball talent. His path since then has taken him to the NCAA Final Four three times, the NBA Finals twice and the NBA All-Star Game nine times. He has been named defensive player of the year twice and, last month, both the league's most valuable player and MVP of the NBA finals.

"But," says Hakeem Olajuwon of the Houston Rockets, "I strive for higher goals now. If I don't achieve anything more in basketball than what I have today, that's more than enough. I will be thankful for what I've been given."

What Olajuwon, now 31, listens to more than anything else in life is the words of the Qur'an. "I have recommitted myself to my faith," he says. Last May he bought a handsome old bank building in downtown Houston, and he plans to convert it into a mosque.

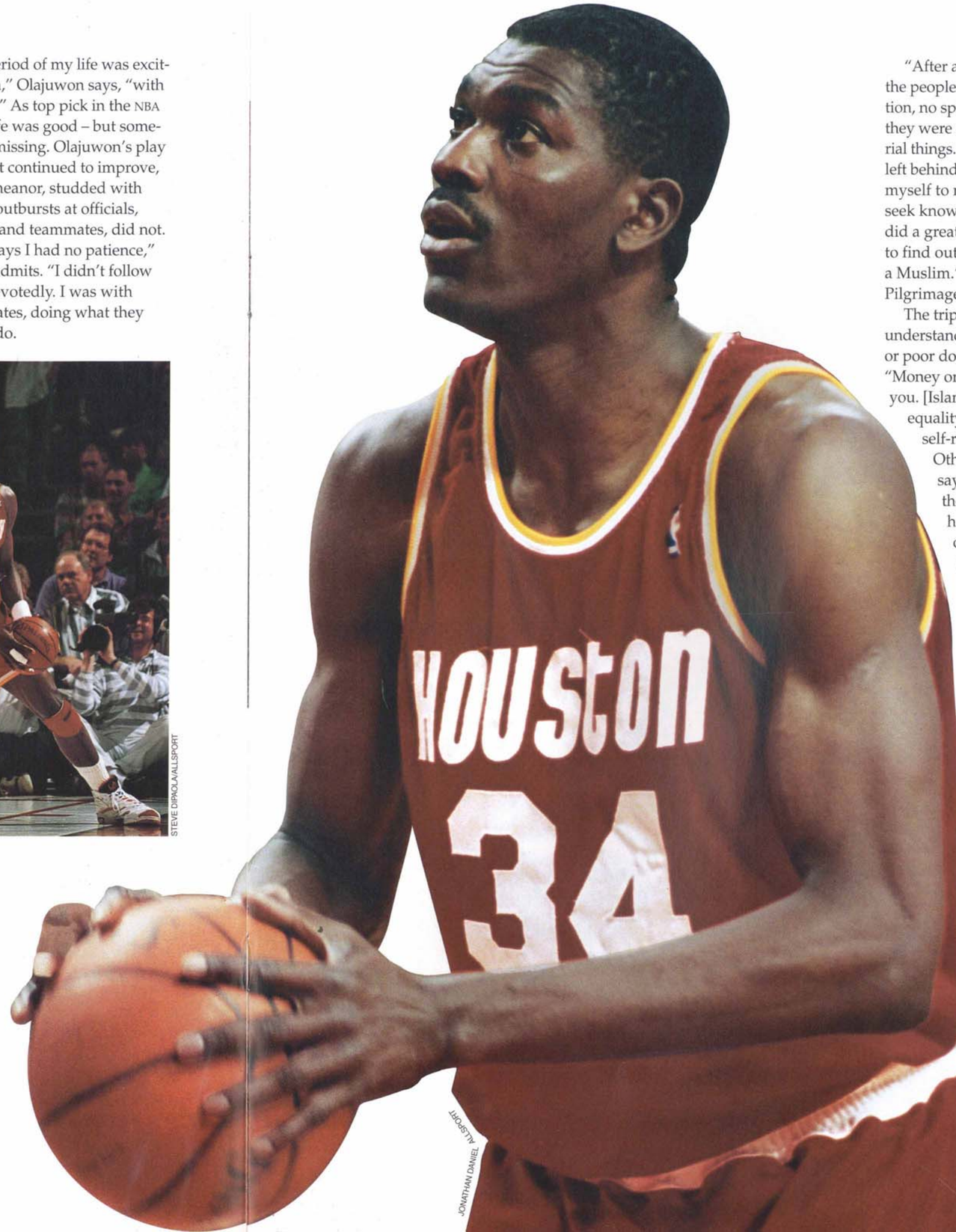
His religious beliefs had been an important part of Olajuwon's youth in cosmopolitan Lagos. But he drifted away from practicing his faith when he became a University of Houston basketball star in a glorious era of fast breaks and flying dunks that fans still recall as "Phi Slamma Jamma."

"That period of my life was exciting and fun," Olajuwon says, "with no worries." As top pick in the NBA draft, his life was good – but something was missing. Olajuwon's play on the court continued to improve, but his demeanor, studded with emotional outbursts at officials, opponents and teammates, did not. "In those days I had no patience," Olajuwon admits. "I didn't follow the faith devotedly. I was with my teammates, doing what they wanted to do.



STEVE DIPAOLA/ALLSPORT

WRITTEN BY TERRY BLOUNT
ADAPTED FROM ARTICLES IN *THE HOUSTON CHRONICLE*



JONATHAN DANIEL/ALLSPORT

"After a while, I realized most of the people I was around had no direction, no spiritual knowledge, because they were only concerned with material things. Finally, I realized what I had left behind, and I decided to recommit myself to my faith. I was hungry to seek knowledge," Olajuwon says. "I did a great deal of reading and study to find out about my obligations as a Muslim." At 28, he made the Pilgrimage to Makkah.

The trip gave Olajuwon a deeper understanding of his religion. "Rich or poor doesn't matter there," he says. "Money or social status cannot help you. [Islam] teaches you humility and equality, patience and tolerance, self-restraint and self-control."

Other players around the NBA say that Olajuwon has learned those lessons well. These days, he rarely gets upset over an official's call or an opponent's play. "I'm still the same person, but I will not be the aggressor," he says. "People ask me how you can be religious in such a violent sport, but good and evil always have to fight in one forum or another. I never really changed, but I grew as a person. There's a difference."

Olajuwon says he doesn't want people to look up to him just because of his latest award. "If you feel joy about what you've accomplished, then you've had a successful career," he says. "All of us are seeking the truth in our own way. God is the only judge."

Terry Blount is a sportswriter for The Houston Chronicle.

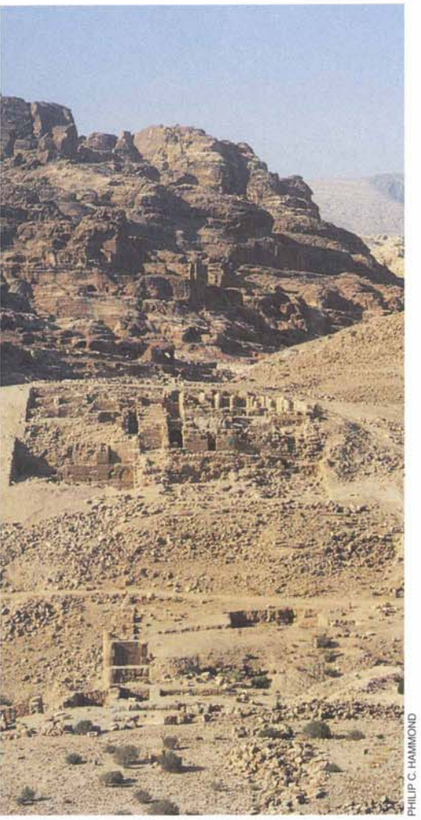
Bulls From the Sea

WRITTEN BY ZAYN BILKADI
ILLUSTRATION BY BOB LAPSLEY

Ancient Oil Industries
Part 1

Humans have used petroleum since the earliest times.

Prehistoric hunters used bitumen to attach flint spearpoints to shafts, and prehistoric farmers harvested with sickles whose stone edges were held in place with the same substance, which also served as a liniment and a laxative. Seven thousand years ago, the 'Ubaid people caulked their boats with bitumen, and used it as well in making works of art inlaid with mother-of-pearl and lapis lazuli.



PHILIP C. HAMMOND

Excavations in progress at Petra, the stronghold of the Nabataeans.

All this was in Mesopotamia, where petroleum was naturally available from bitumen seeps, oil springs and oil-bearing rock. Recent evidence suggests that bitumen was traded down the western shores of the Arabian Gulf before the end of the fifth century BC. And elsewhere in the Middle East, escaping natural gas, lit by lightning, produced "eternal flames" that were objects of superstitious awe.

In historic times, the Sumerians, Assyrians and Babylonians each used bitumen from important seeps at Hit and other nearby sites on the Euphrates: Ain Ma'moora, Ain Elmaraj, Ramadi, Jebba and Abu Gir. It served in the construction of irrigation systems, as a caulk for ships, and as both an additive to strengthen fired clay bricks and a mortar to hold them together. These large-scale civilizations used bricks by the millions and bitumen by the ton – used them, in fact, on a scale we would have to describe as industrial.

We think of the petroleum industry as a 20th-century phenomenon, and certainly more oil is used now than ever was in the past, even on a per-capita basis. But there were genuine oil industries in the ancient Middle East and surrounding areas that employed large numbers of people, that made standardized products, and whose workings had international economic and political ramifications. In the three articles of this series, we will look at some of them.

For the ancient Arabian people known as the Nabataeans, history arrived in 312 BC, when an army of Greek mercenaries crossed the Syrian desert into present-day Jordan and headed toward the southern tip of the Dead Sea. When they reached their destination, their commander – a general named Hieronymus of Cardia – couldn't believe his eyes: Scores of Arabic-speaking tribesmen were camped on the shore, with pack-camels couched and reed rafts beached, waiting for what they called the *thawr* – the word was Arabic for "bull" – to appear in the middle of the sulfur-smelling waters.

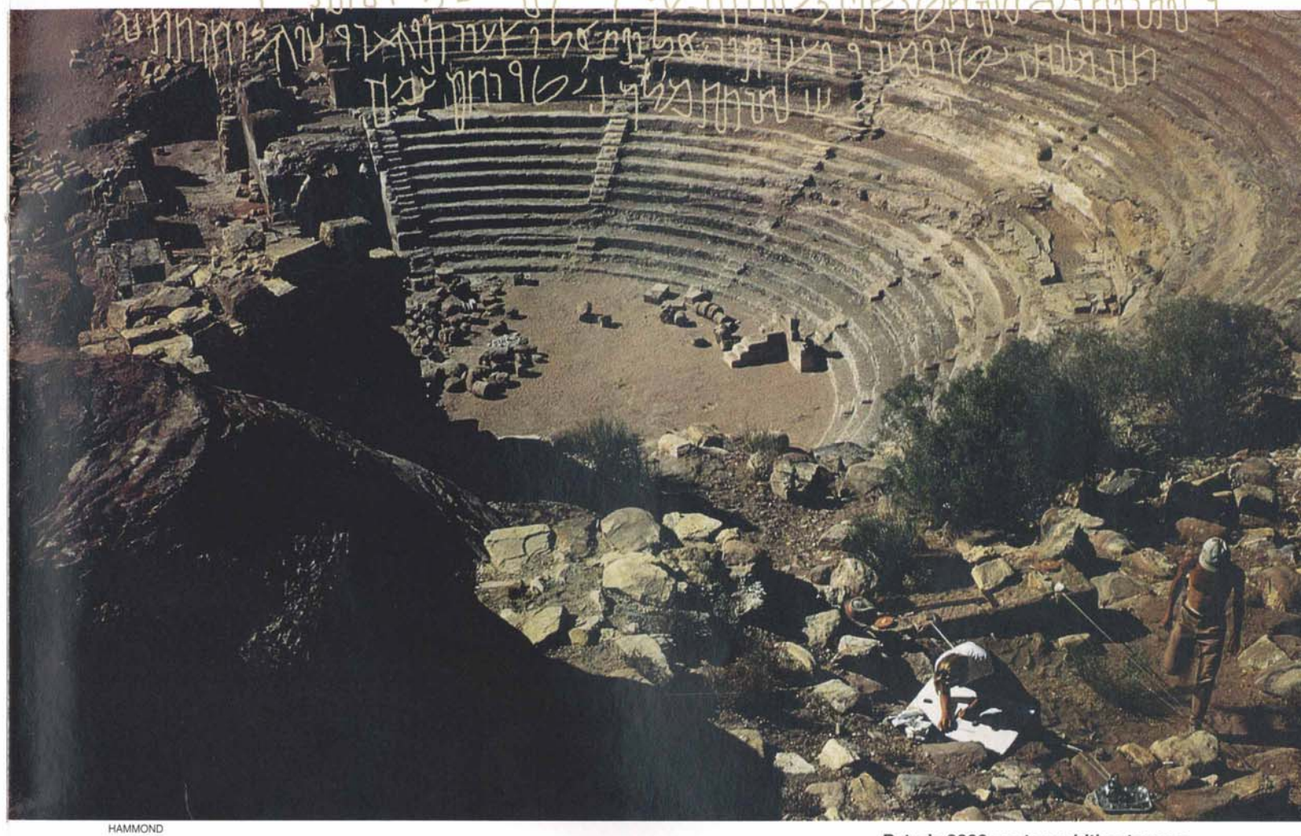
The "bulls," Hieronymus discovered, were great iceberg-like mounds of jellied crude oil – bitumen – that floated up from the depths of the murky water and drifted aimlessly with the wind (See *Aramco World*, November-December 1984). Every time a new "bull" rose into sight, a swarm of axe-wielding seamen leapt onto their reed-bundle rafts and began a frantic race toward the catch.

The Arabs prized the oily exudate immensely; as the Greeks put it, they carried the stuff off "like plunder of war." Nowhere is this scene more vividly depicted than in Hieronymus's own journal:

"They make ready large bundles of reeds and cast them into the sea. On these not more than three men take their places, two of whom row with oars, which are lashed on, but one carries a bow and repels any who sail against them from the other shore, or who venture to interfere with them. When they come near the floating bitumen they jump upon it with axes and, just as if it were soft stone, they cut pieces and load them onto the raft, after which they sail back."

On the shore, crews of women and children sprinkled the hunks of tarry oil with sand, stuffed them into leather bags and loaded them onto camels for the long journey across the Sinai. Their final destination: Alexandria, Egypt.

Ironically, when Hieronymus witnessed this extraordinary harvest of



HAMMOND

Petra's 3000-seat amphitheater was built in the second century, after the Nabataeans were absorbed into the Roman province of Arabia. At top, an inscription in Aramaic written in Nabataean script, from Petra, dating from the first century of our era.

the sea, he was under orders to expel the Arabs and secure the oil for his master, the Macedonian Greek king Antigonus I Monophthalmos – the "One-Eyed." As it happened, Hieronymus's talent for keeping good notes of his observations far exceeded his skills as a military leader. His army was handily defeated, and he had to flee back to Syria for his life. Some 270 years later, his diary, long forgotten, fell into the hands of the Roman historian Diodorus Siculus, who made good use of it in his description of early Nabataean life.

Until that eventful day when the Greeks made their unwelcome appearance in their midst, almost nothing was known about these oilmen of the Dead Sea, the Nabataeans. Some scholars equate them with the Nebaioth people mentioned in the Bible, and Qur'an translator Abdullah Yusuf Ali calls them the successors of the Thamud people of Arabia. It has been established beyond doubt that their home base was the present-day Hijaz region of northwestern Saudi Arabia, from which they eventually fanned out to build a kingdom that included large tracts of the Negev Desert, almost all of what is now Jordan and, at one time, even Damascus (See *Aramco World*, March-April 1981). Harvard professor G.W. Bowersock, an expert on the Nabataeans and author of the book *Roman Arabia*, called their realm "one of the greatest kingdoms of the ancient Middle East."

Although much of their history remains shrouded in obscurity, everyone agrees that the Nabataeans were a wealthy nation – so wealthy, in fact, that they are the only people in history known to have imposed a punitive tax on whomever among them grew poorer instead of richer. To be sure, much of their fabulous wealth came from their tight grip on the caravan trade in spices and incense that flowed from southern

bitumen

". . . When they come near the floating bitumen they jump upon it with axes and, just as if it were soft stone, they cut pieces and load them onto the raft, after which they sail back."

Arabia to Egypt – a lucrative trade for which they were the exclusive middlemen. But a strong case can be made that these shrewd and studious Arabs built their prosperity on two monopolies, not one, for they were also the sole exporters of Dead Sea bitumen to Egypt.

In the fourth century BC, Egypt's imports of bitumen from the Dead Sea were running at an all-time high, and for good reason: The substance was fast becoming the main ingredient in the Egyptians' most important religious ritual – mummification.

Embalming of the dead had been an Egyptian tradition for millennia, driven by the ancient pharaonic belief that, without preservation of the body, there could be no assurance of an afterlife for the soul. However, sometime in the fourth or fifth century BC, the Egyptians began to experience a shortage of the aromatic resins, gathered from shrubs and trees, that they had relied upon exclusively for the operation. Eventually, Egyptian priests found they could do just as well by reducing the quantities of these aromatics and mixing them with molten bitumen – or *mrh.Hr*, as the word is transliterated from an old Egyptian papyrus text on embalming, written on behalf of Anubis, the jackal-headed funerary deity and reputed inventor of mummification:

"Anubis ... fills the interior of the skull with *mrh.Hr*, incense, myrrh, cedar oil, and calves' fat."

The word *mrh.Hr* is written in hieroglyphics with the signs *owl*, *mouth*, *twisted flax*, *face* and *pot*, as shown above. The word is suspiciously close to an Arabic word for bitumen, *humar*, which the Nabataeans may have used.

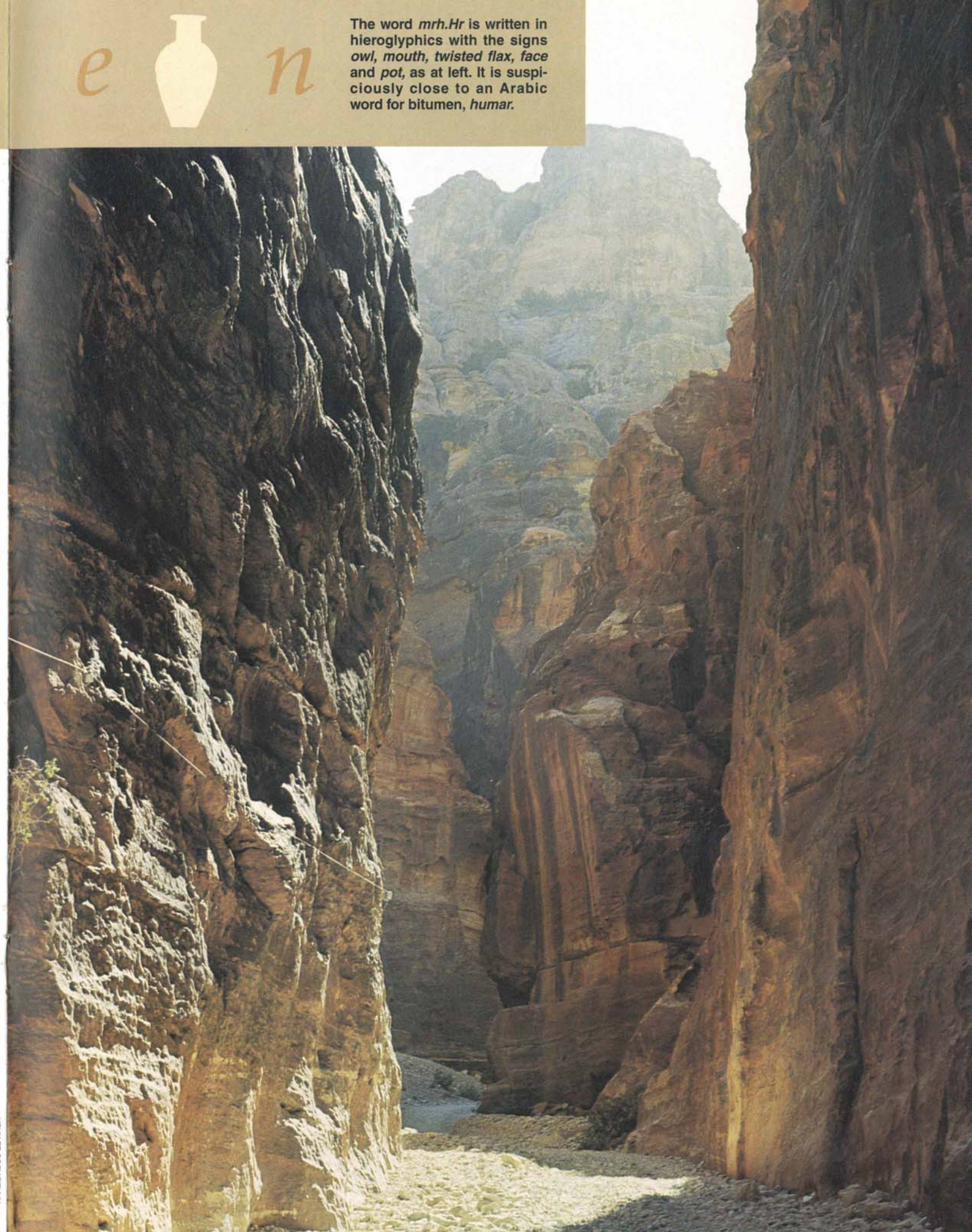
ART RESOURCE/LESSING

Ptolemy I Soter, shown on a tetradrachm, above, founded a dynasty in Egypt after the death of Alexander the Great. Opposite, a view into the narrow, winding Shiq, the two-kilometer tunnel-like ravine that leads to Petra.

Because Egypt had no bitumen or oil deposits of its own, it had to import the substance from the Nabataeans. Egypt's population around 300 BC was close to seven million, demand for bitumen was very large, and the Nabataeans knew that in the oil of the Dead Sea they had their hands on a fortune of immense proportions. Then as now, oil and international trade proved to be inseparable.

Between 323 and 285 BC, the Nabataeans suddenly found themselves at the center of a bitter struggle between two superpowers, each headed by a former general in the army of Alexander the Great: Ptolemy I Soter and Antigonus I Monophthalmos. After the death of Alexander, each of the generals aspired to eliminate the other and carve out for himself an empire that would include all of the Middle East. Ptolemy I founded a dynasty in Egypt, while Antigonus I retained part of present-day Turkey

The word *mrh.Hr* is written in hieroglyphics with the signs *owl*, *mouth*, *twisted flax*, *face* and *pot*, as at left. It is suspiciously close to an Arabic word for bitumen, *humar*.



KHALIL ABOU EL-NASR

and all of Syria and Lebanon.

In the year 312 BC, Antigonus made his move against Ptolemy: He dispatched a trusted officer, Athenaeus, at the head of an army of 4600 men with the dual mission of subduing the "barbarians," as the Greeks referred to the Nabataeans, and of imposing an economic blockade against Egypt's eastern flank. Perhaps, too, Antigonus had heard of the bitumen exports across the desert – there are indications that he had – and calculated that a shortage of bitumen in Egypt would stir up the powerful priesthood against his rival.

But Antigonus's scheme failed.

Informers had told Athenaeus that it was the custom of the men of the nomadic Arab groups of the Dead Sea area to gather once a year for a national festival, during which they left all their possessions and their old people, women and children for safekeeping at a certain place referred to as "The Rock." This rock – described as exceptionally strong, high, and unprotected by a wall – sounds very like the hill Umm al-Biyarah, within the rose-red city of Petra, whose name means "rock" in Greek, and which was later to become the capital of the Nabataean kingdom (See *Aramco World*, September-October 1991).

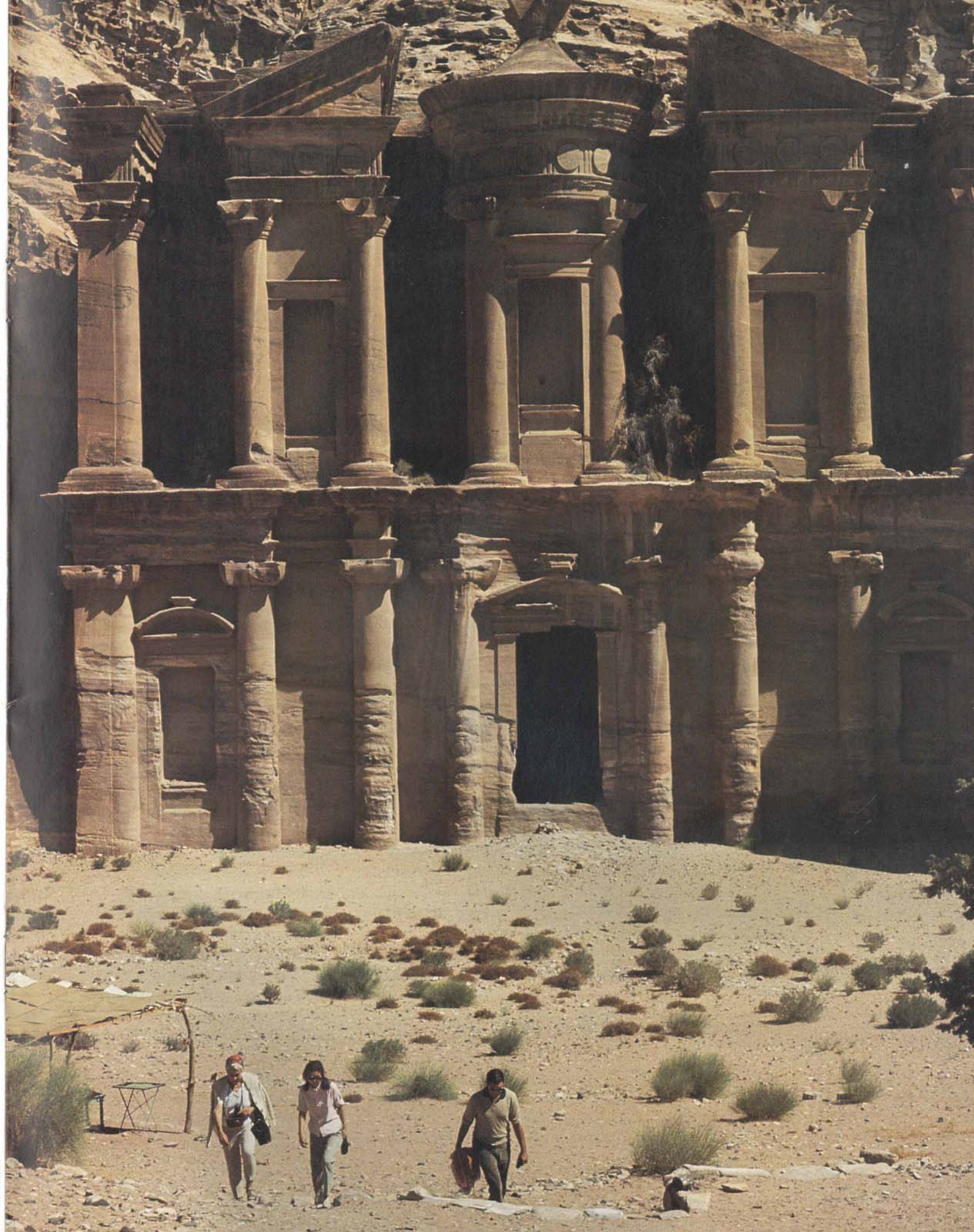
Athenaeus timed his raid to coincide with the festival. Reaching the rock at nightfall, he surprised

Nabataean trade routes stretched south as far as Yathrib – today's Madinah, In Saudi Arabia – and north as far as Aleppo. On the map above, sites where signs of Nabataean settlement have been found are named in bold type. Opposite, the so-called Monastery at Petra.

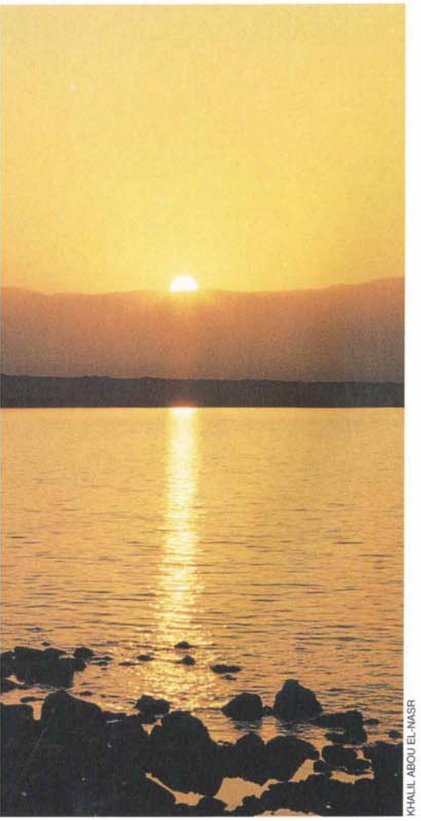
the Arabs there and killed or imprisoned many of them. After looting the encampment, he made off in the darkness with 700 camels and a large quantity of booty that included much frankincense and myrrh and about 500 talents of silver. To us, such riches are evidence that the Nabataeans were busy traders with southern Arabia and had accumulated great wealth, but for the forces of Athenaeus they spelled doom. Weary in the torrid heat, heavy-laden and short of water, they made the fatal mistake of setting up camp too soon.

The Nabataeans learned of the Greek assault and lost no time gathering their forces and sending them in pursuit of the intruders. Locating the Greek camp, they fell upon it with vengeance, and at the end of the day all of Athenaeus's infantry and most of his cavalry were destroyed.

When they returned to their rock, with their recovered goods in hand, the Nabataeans sent an angry letter to Antigonus, written in "Syrian characters" – probably Aramaic, the *lingua franca* of the region. They accused Athenaeus of aggression, and demanded assurances that the Greeks would not harm them again. Antigonus, hoping to buy time, denied responsibility for the incident and assured them that Athenaeus had acted against orders and on his own. This was no consolation to the



HAMMOND

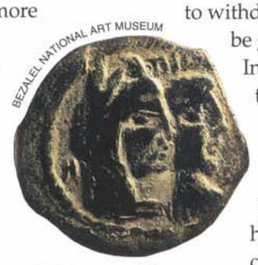


KHALIL ABOU EL-NASR

Bitumen "bulls" no longer rise from the waters of the Dead Sea, which is part of an active rift system that reaches into Africa.

Nabataeans; as a precautionary measure, they decided to place watchmen on hilltops throughout their territory, to provide early warning of any future intrusion.

Shortly thereafter, Antigonus ordered his own son Demetrius – known to the Greeks as Poliorcetes, "the Besieger" or "City-Sacker" – to march on the rock at the head of a formidable force of more than 8000 troops, half of them cavalry. His movements, however, were detected very early on, and news of the imminent invasion reached Petra by fire signals. At once, the Nabataeans deployed a garrison to protect their city, and divided their cattle into small separate flocks which they drove deep into the desert.



BEZALEL NATIONAL ART MUSEUM

Nabataean king Aretas IV minted coins that showed his own portrait with that of his consort.

When Demetrius reached Petra, he found it heavily guarded and on the alert. His first assault was easily repelled and, at the end of the day, he was forced to retreat. The next day, as he was preparing to storm the city a second time, the Nabataean elders sent him a message that beautifully expresses both the peaceful desires and steely resolve of the Bedouin Arabs:

"King Demetrius, with what desire or under what compulsion do you war against us who live in the desert, in a land that has neither water nor grain nor wine nor any other thing whatever that pertains to the necessities of life among you? For we, since we are in no way willing to be slaves, have taken refuge in a land that lacks all the things that are valued among other peoples, and have chosen to live a life in the desert..., harming you not at all. We therefore beg both you and your father to do us no injury but, after receiving gifts from us, to withdraw your army and henceforth regard the Nabataeans as your friends. For neither can you... remain here many days, since you lack water and all the other necessary supplies, nor can you force us to live a different life."

After negotiating with their emissaries, Demetrius finally agreed to withdraw, on condition that he be given hostages and gifts. Instead of retreating toward Syria, however, Demetrius – to the Arabs' dismay – marched on to the Dead Sea and declared himself "lord of all the oil fisheries." Leaving behind his army, he then hastened back to his father to report the news.

Antigonus, apparently impressed by what his son had found, immediately sent another battalion to the Dead Sea, headed this time by Hieronymus, with specific orders to "prepare boats, collect all the bitumen, and bring it together in a certain place." However, when Hieronymus attempted to harvest the oil with his boats, his forces were attacked by no less than 6000 Arabs – some of them on rafts – and were annihilated in a shower of arrows.

The episodes of Athenaeus and Demetrius in 312 BC marked the entry of the Nabataeans into recorded history and, as archeologist Peter Parr writes, clearly imply that by that date they were already rich and powerful. In the first half of the third century, during the reign of Ptolemy II Philadelphus (285-247 BC), the Nabataean territory expanded further to include the area of the Hawran in present-day Syria, and a larger tract of the Negev Desert across the Wadi Araba.

Very little is known about the history of the Nabataeans from the middle of the third century to about 100 BC, except for the name of al-Harith (or Aretas) I, the first individually recorded Nabataean ruler, in about 168 BC, and the fact that, by the end of the second century, Petra was full of foreign dignitaries, including a Roman ambassador.

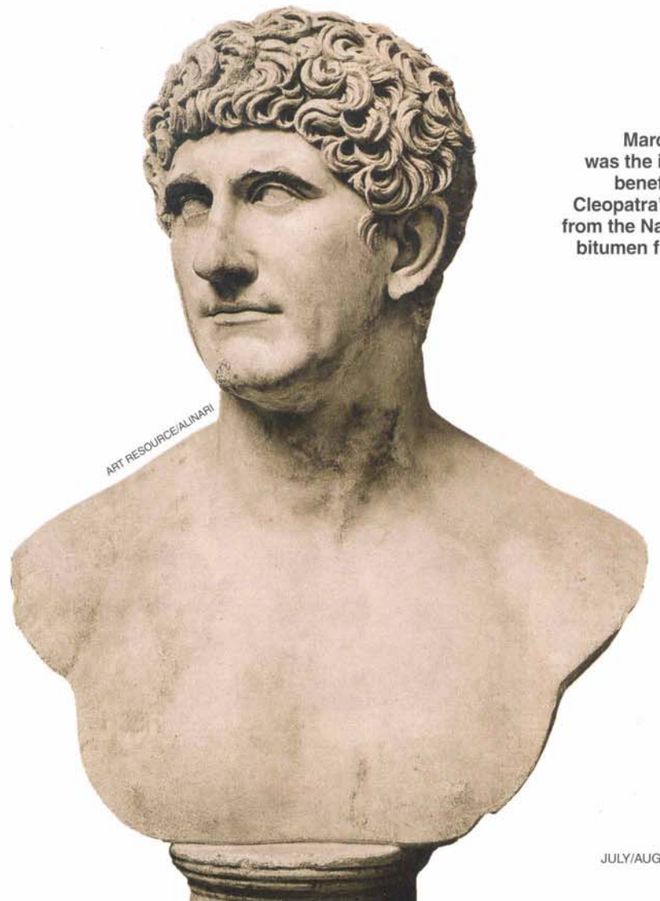
We know from the Roman historian Josephus that in 88 and 87 BC, the Greek Seleucid king Antiochus XII launched two separate campaigns against the Nabataean king 'Ubaydah I, in a determined effort to capture the Nabataeans' oil industry. Both invasions were crushed. In fact, in the second invasion, Antiochus himself lost his life in a battle close to the Dead Sea, as Josephus reported:

"'Ubaydah retired to better defensive positions, then suddenly faced about with his cavalry force of 10,000 men and fell upon the army of Antiochus while [it was] in disarray. A bitter struggle followed. While Antiochus survived, his men fought on, though they suffered appallingly at Arab hands; when at last he fell as a result of risking his life continuously in the forefront to help his struggling soldiers, the entire line broke. Most of his army was destroyed in the engagement or in the subsequent flight; the survivors took refuge in the village of Cana, where lack of food killed all but a handful."

The Nabataeans continued their petroleum exports to Egypt well into the first century BC, and their wealth, already considerable, continued to grow. The bitumen was carried along the Wadi Araba to Petra or Avdat by camel caravans, and then north to the coastal city of Gaza. From Gaza, it was either loaded aboard ships bound for Alexandria, or taken along the

ART RESOURCE/SCALA

It was the death of Alexander the Great and the division of his empire that brought the Nabataeans – and their bitumen industry – into conflict with the superpowers of the day. Above, a battle scene on a marble sarcophagus thought to be Alexander's, now in Istanbul's Archeological Museum.



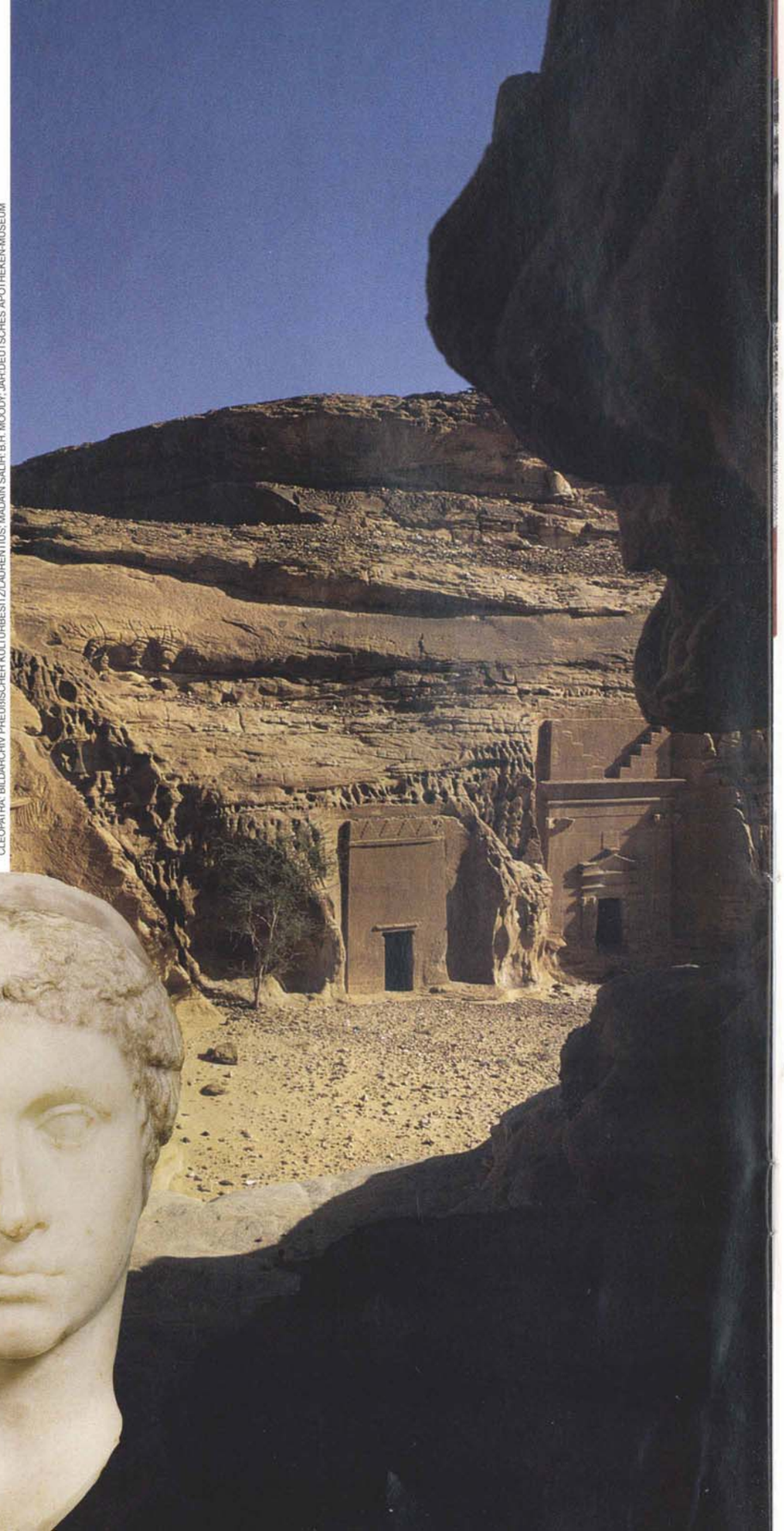
ART RESOURCE/ALINARI

Marc Antony was the intended beneficiary of Cleopatra's profits from the Nabataean bitumen fisheries.

Mediterranean coastline in fresh caravans into Egypt.

But, as the first century BC progressed, both the Nabataeans and their captive market, the Egyptians, faced a serious threat from the Romans in Syria. In 62 BC, a Roman officer from Syria named Scaurus led an expedition against the Nabataeans and withdrew only after being bought off with a large amount of silver. Seven years later, a Roman commander called Gabinius invaded the kingdom in his turn and demanded another ransom in silver. The more silver the Nabataeans were willing to part with, however, the bolder the Roman demands grew, until Roman leader Marc Antony finally annexed the kingdom outright.

Before long, however, Antony fell in love with that extraordinary Greek-Egyptian queen, Cleopatra VII, who persuaded him to give her the Nabataean oil fisheries as a gift. To maximize her income from the operation while still ensuring that the oil would continue to flow into her kingdom, the canny queen contrived the first recorded lease-back scheme: For a hefty 200 talents, or roughly $400,000 a year, she leased the Dead Sea oil works back to the Nabataean king Malik I in 36 BC. Without any expenditure of money, labor or military force, Cleopatra thus assured herself a substantial revenue – which she intended to use to help build a naval fleet strong enough to defeat Antony's chief Roman rival, Octavian.



CLEOPATRA: BILDARCHIV PREUßISCHER KULTURBESITZ/LAURENTIUS; MADAIN SALIH: B.H. MOODY; JAR-DEUTSCHES APOTHEKEN-MUSEUM

Cleopatra VII, at right, leased the bitumen fisheries back to the Nabataeans in 36 BC. Tombs like those at far right are all that has been found of the Nabataean settlement at Madain Salih, in today's Saudi Arabia.

The financial toll on the Arabs, however, proved unbearable: In 32 BC, Malik I, under intense pressure from his elders, balked at the payment and defied the Egyptian queen. Cleopatra, in response, called on Antony to launch a punitive campaign against the Arabs, led by one of his protégés, Judean king Herod. But the hostilities between Herod and the Arabs turned out badly for the queen: The Arabs triumphed over Herod at the battle of Qanawat, in present-day Syria, and shortly thereafter, in 31 BC, Antony himself was defeated by Octavian's forces in the naval battle of Actium, off the coast of Greece.

In a desperate scramble to escape to India with Antony, Cleopatra had some of her ships dragged overland from the Nile to the Red Sea. But there, on the coast, her heavy-handed policy against the Arabs came back to haunt her: By an amazing coincidence of history, a garrison of Nabataeans was stationed near the site where the ships were to be launched.

No sooner were Cleopatra's galleys afloat than the Nabataeans – forever wary of any Egyptian naval presence on the Red Sea, which might threaten their overland trade routes – attacked and set them ablaze. Antony and Cleopatra were forced to flee back to Alexandria; and the couple, realizing that they were hopelessly trapped in Egypt, committed suicide. In a true sense then, the politics of oil in the ancient Middle East sealed the fate of Antony and Cleopatra.

After the death of Cleopatra, Egypt became a colony of the new Roman empire created by Octavian, who took the title "Augustus," and the pharaonic custom of mummification ended. As a result, the bitumen fisheries of the Dead Sea lost their economic importance. The Nabataeans retained some degree of independence from Rome until the year 106, when they were incorporated by the emperor Trajan into the newly formed province of Roman Arabia, with its capital at Bostra in southern Syria.

Although the Romans did not practice embalming, they continued the Middle Eastern custom – originally from ancient Mesopotamia – of ingesting crude oil and bitumen for medicinal purposes, a custom that led, more than a thousand years later, to one of the most bizarre commodities routinely traded in the history of humankind, "mummy."

Sometime in the 12th century, medieval Europe learned that the ancient Egyptians had used a bitumen mixture called *mumiya'* to embalm their dead, and that by melting this substance down one could obtain an oil that Ibn al-Baytar and other Muslim physicians claimed was of great medicinal value. Beginning in that century, and throughout the Middle Ages, thousands of Egyptian mummies were exported from Alexandria to Europe by way of Marseilles – initially for recovery of the bitumen, later, as the effective ingredient was forgotten, to be simply ground to powder altogether. This powder, called "mummy," was a standard apothecary ingredient, and much in demand.

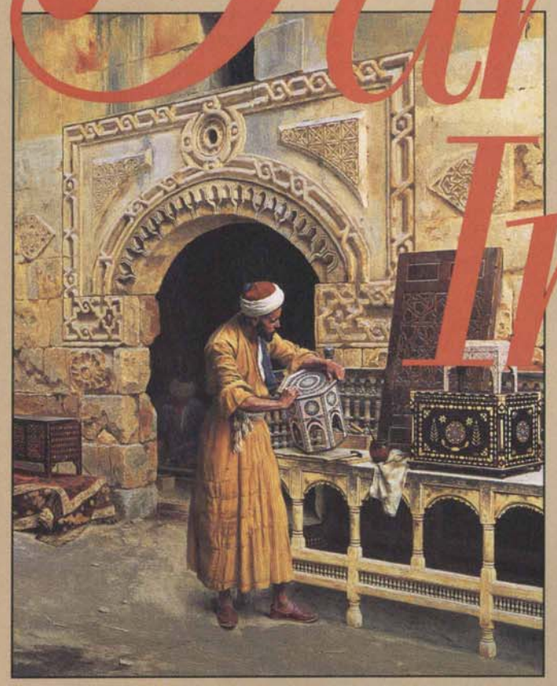
When the supply of genuine mummies and mummy parts ran low, unscrupulous gangs in Alexandria resorted to deceit, shipping instead the corpses of slaves and criminals which had been disemboweled, aged in the sun and then stuffed or swabbed with a little bitumen, without proper cleansing. Not surprisingly, the practice had disastrous consequences in Western Europe, especially in France and Germany, where it contributed to the spread of the Black Plague. In 1564, a French physician, Guy de la Fontaine, traveled to Egypt and exposed the "mummy" fraud to the French king. Unfortunately, his warnings were not immediately heeded, and the export trade in mummies did not come to a complete halt until some 50 years later. Indeed, domestically produced false "mummy" was still traded in Europe into the 18th century – a macabre offshoot of one of the Middle Eastern petroleum industries of more than 2000 years earlier.

"Mummy" powder came to be credited with the medical virtues of bitumen, and was a standard apothecary item in Europe as late as the 18th century.

Dr. Zayn Bilkadi was born in Tunisia and studied at the American University of Beirut, the University of Rochester and the University of California at Berkeley. He is a senior research specialist at 3M Corporation, and holder of nine patents.

Fanciful Inlay:

Mother-of-Pearl Inlaid Furnishings



An octagonal table inlaid with mother-of-pearl receives a final polish in Ludwig Deutsch's 1900 painting ***The Furniture Maker***, above. Painting, from a private collection, courtesy of Mathaf Gallery, London. Opposite, a Qur'an box from the mausoleum of Sultan Selim II, made in Istanbul in the second half of the 16th century and now in the Türk ve İslam Eserleri Müzesi.

WRITTEN BY BETH HOUSTON

Brilliant, iridescent mother-of-pearl has been used as a decorative material since at least 2500 BC, when an unknown craftsman inlaid flat pieces of the gleaming mollusk shell, along with lapis lazuli and other colored stone, in a wooden panel to create the Standard of Ur. In more recent times, artisans in the Middle East have been creating the most opulent, shimmering effects by inlaying furniture surfaces with intricate mother-of-pearl designs, ranging from complex starbursts to delicate floral arabesques.

Mother-of-pearl inlaid furnishings – now expensive antiques, eagerly sought by connoisseurs and collectors – evolved from a long tradition in the Middle East to become an important decorative art under Ottoman imperial patronage in the 16th and 17th centuries. During the 19th century, when Damascus and Cairo emerged as important production centers alongside Istanbul, these dazzling and often elegant furnishings were widely produced and enormously popular throughout the region. And thanks to the mutual fascination that developed between the Middle East and Europe during this period, they also captivated Europe and America with their beauty.

Few early examples of mother-of-pearl inlaid furnishings survive, but Marco Polo and Byzantine envoys reported inlaid thrones and other furnishings in the courts of Central Asia in the 13th century. In Egypt, at the same time, mother-of-pearl was an important decorative element in Mamluk woodwork, embellishing important mosque furnishings.

During the brilliant flowering of Ottoman art in the 16th and 17th centuries (See *Aramco World*, July-August 1987), mother-of-pearl inlaid furnishings achieved their finest moment. Artisans in Istanbul's imperial workshops produced works of astonishing splendor, contrasting the mother-of-pearl with tortoise shell, ivory, ebony and other luxurious materials. Since the Ottomans, like other Islamic societies of the Middle East, had no tradition of free-standing furniture before the 19th century, these pieces were intended primarily for ceremonial use or for royal mosque and mausoleum complexes.

The most spectacular early-Ottoman inlaid work is a portable throne with a domed canopy supported by four slender columns, entirely encrusted in mother-of-pearl, tortoise shell and precious gemstones. It was built in 1610 for Sultan Ahmet I. With great dramatic effect, boldly-scaled vase and floral motifs in mother-of-pearl, studded with rubies, emeralds and other gemstones, are silhouetted against a tortoise-shell background on the surfaces of the throne and its canopy. One can imagine the spectacle provided by an imperial audience with the sultan, magnificently robed, seated upon this glittering throne – a moment only equaled, perhaps, by the thrill of seeing the splendid imperial caïque built for Sultan Mehmet III gliding along the Bosporus, its superbly inlaid canopy catching the water's reflection.

Almost austere in comparison to the jeweled Ahmet I throne is another portable throne attributed to the mid-16th century reign of Sultan Süleyman the Magnificent, also in the Topkapı Palace Museum. It features a dramatic mother-of-pearl lobed medallion on the center of its high triangular back.

Now in the collection of Istanbul's Türk ve İslam Eserleri Müzesi, the decorative arts museum housed in the İbrahim Paşa palace, a remarkable Qur'an box from the mausoleum of Sultan Selim II, Süleyman the Magnificent's son and heir, stands out as a masterpiece of inlay craftsmanship. As complex in its design as a work of architecture, each level, from the legs supporting the base up to the domed lid, presents a dazzling orchestration of inlaid patterns with mother-of-pearl richly contrasted against ebony, walnut and ivory.

According to Dr. Nazan Ölçer, director of the Türk ve İslam Eserleri Müzesi, there is evidence to support the theory that inlaid works of such complexity must indeed have been created by architects. Another imposing

ERIC GRUNBERG FINE ARTS, PARIS

From the early 18th century, an Ottoman inlaid scribe's desk, 64 centimeters (24 in.) long.

MUSEUM OF THE CITY OF NEW YORK

Middle Eastern textiles, inlaid furniture and accessories in the hall of the Edward Lauterbach house in New York, 1899.

Qur'an box in the museum's collection, from the mausoleum of Sultan Mehmet III, bears the signature of its artist, Dalgıç Ahmet Çavuş, who was the chief architect at the Ottoman court in the years 1598-1605. And Sedefkâr Mehmet Ağa, who created the dazzling jeweled throne for Ahmet I, was the best-known Ottoman architect after the great Sinan, his most distinguished achievement being Istanbul's magnificent Sultanahmet, or Blue, Mosque.

Within the context of early-Ottoman decorative style, as revealed by the harem interiors and smaller pavilions of the Topkapı Palace, there was little in the way of free-standing furniture. Whether in the palace, where mother-of-pearl inlay was used extensively as a decorative element, or in the more modest home of an Ottoman merchant, low pillow-covered divans lined the walls, and open cabinets, carpets and a hooded chimney piece usually completed the furnishings. The only difference was in the sumptuousness of the materials. The free-standing pieces that could be found within a residential context included low polygonal tables, Qur'an stands of hinged wood panels, and scribe's tables, often superbly inlaid.

Drawing from the sophisticated repertoire of decorative motifs developed in the Ottoman *nakkaşhanes* – court painting and design workshops – inlay artisans were able to create the most intricate compositions, contrasting the mother-of-pearl against other materials, most frequently tortoise shell backed with gold leaf, mahogany, ivory and ebony. In addition to using marquetry and the classic inlay technique of imbedding the material in a recessed surface, the Ottomans perfected a technique called *kundekârı*, primarily used for geometric designs, in which the individual plaques of mother-of-pearl and decorative woods were cut in two planes so as to interlock continuously, without the use of glue, like jigsaw-puzzle pieces with tongue-and-groove edges. A fascinating aspect of both the smaller inlaid furnishings and the impressive ceremonial pieces produced from the 16th to the 18th centuries is the large size of the mother-of-pearl plaques, larger than we find either in the later 19th-century Ottoman inlaid furniture, or in pieces produced elsewhere in the Middle East.

Inlaid works intended for imperial use were produced in a special department at Topkapı, the Mimarlar Ocağı, that dealt with architecture and construction. In addition to the palace workshops, orders were also given to artisans working in Istanbul. Societies of artisans who supplied the Ottoman imperial court made up the *Ehl-i Hiref*, the Community of the Talented.

In the late 18th century, Ottoman diplomatic ties with France strengthened (See *Aramco World*, November-December 1993). As princes and envoys traveling abroad brought back news and examples of French decorative style, then paramount throughout Europe, the Ottoman court developed a taste for baroque and rococo designs, and wealthy Turks imported French furniture. Interest in mother-of-pearl inlaid furnishings and other traditional decorative arts faded.

But ironically, the increased European design influence over the next century would lead to a vibrant transformation of inlaid furnishings, not only in Istanbul but throughout the region. As grand European palaces were built and divan-lined rooms gave way to formal European seating arrangements, artisans began to apply traditional mother-of-pearl inlay patterns to adaptations of European furniture styles. Abdül Hamid II, the reclusive Ottoman sultan who rarely left the confines of Yıldız Palace during his 33-year reign, actively supported the revival of mother-of-pearl inlaid furnishings and other Ottoman arts, establishing a carpentry workshop within the palace grounds where inlaid furniture was produced. It is in fact widely claimed that Abdül Hamid himself – highly skilled as a furniture maker, according to his daughter's memoirs – crafted a number of inlaid tables now at Yıldız, as well as a decorative screen now in the Baghdad Kiosk at Topkapı. No written sources exist, however, to authenticate specific pieces.

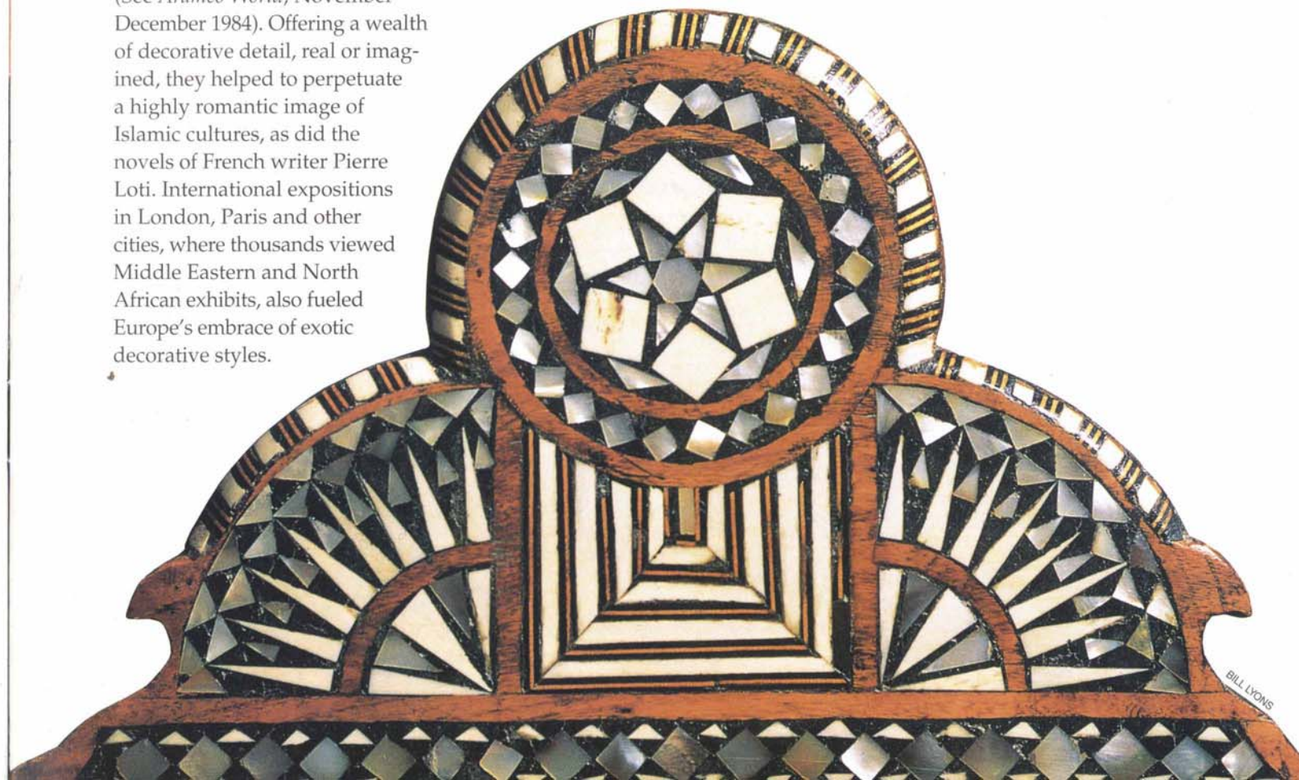
In the meantime, a vogue for Orientalism and exotic Middle Eastern furnishing styles, stimulated by travelers' accounts and the captivating images created by artists and writers who had traveled to the region, swept across Europe. Luxuriant harem scenes and portraits of desert emirs painted by Eugène Delacroix, Jean-Léon Gérôme and other Orientalists caught the public's imagination (See *Aramco World*, November-December 1984). Offering a wealth of decorative detail, real or imagined, they helped to perpetuate a highly romantic image of Islamic cultures, as did the novels of French writer Pierre Loti. International expositions in London, Paris and other cities, where thousands viewed Middle Eastern and North African exhibits, also fueled Europe's embrace of exotic decorative styles.

Both in England and France, a number of Islamic-inspired residences were erected, including Alexandre Dumas's Château de Monte Cristo, built in the Moorish style. Beginning in the 1870's, fashionable European interiors boasted Turkish, Moorish or Arab rooms; the most splendid of these was the Arab Hall created by Lord Leighton at Leighton House in London (See *Aramco World*, November-December 1978).

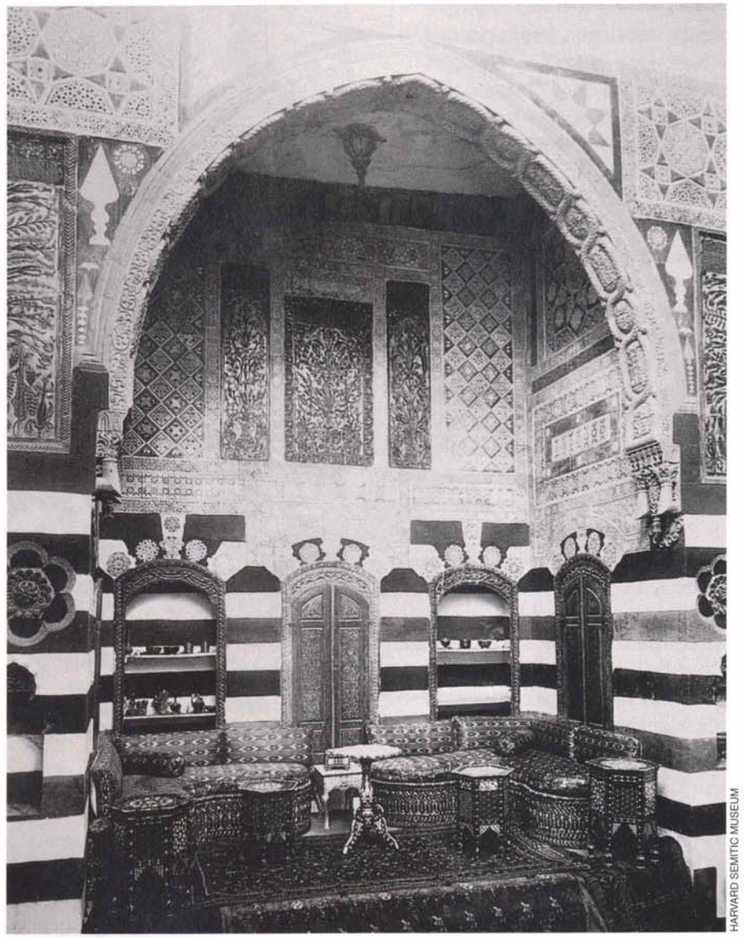
Romance and fantasy pervade another celebrated interior of the period: Seeking to recapture the atmosphere of Morocco and of his beloved Istanbul, Pierre Loti created a Turkish room and an Arab room in his Rochefort residence (See *Aramco World*, July-August 1992), an evocative backdrop for the soirées he gave for *le tout Paris*. Capitalizing on the trend, Liberty of London established a Middle Eastern bazaar, with an adjoining tearoom, and imported inlaid sideboards, Qur'an stands,

MARIE CLAIRE MAISON/BAILHACHE/ARDOUIN

Above, the *salon turc* of novelist Pierre Loti in Rochefort, France. Below, detail of an inlaid chair in the Nadwa Palace of Amman.



BILL LYONS



HARVARD SEMITIC MUSEUM

Above, a reception room of the German Consulate in Damascus at the end of the 19th century. Below, a 19th-century Syrian settee combines inlay, covering nearly all of its surface, with *mashrabiyyah* panels.

TOUMA COLLECTION, HUNTINGTON MUSEUM OF ART

tables and other decorative items, largely from Egypt.

Benefitting enormously from the growing trade with Europe, both Damascus and Cairo emerged as major centers for inlaid furnishings.

Over the centuries, the Syrians had perfected an intricate inlay technique in which the underlying wood surface is almost entirely encrusted in mother-of-pearl ornamentation, creating an elegant shimmering effect. Worked into designs of delicate floral arabesques and intricate geometrics, each mother-of-pearl plaque was set in place, then surrounded and secured with a fine silver or pewter wire. Applying this technique, originally used on boxes, small chests and Qur'an stands, to adaptations and copies of French furniture as well as the traditional Islamic shapes, Damascene craftsmen met with enormous success both locally and abroad in the 19th century. A particularly beautiful application of the technique produced mirror frames with open foliate crowns, often accented with bone banding or small insets of *mashrabiyyah*, the turned latticework popular in the Middle East.

Displayed among the Ottoman exhibits of major international expositions, such furnishings attracted considerable attention with their elegant design and craftsmanship. In a lavishly illustrated review of the 1893 Columbian Exposition in Chicago, writer Hubert Howe Bancroft comments, "Turkish rugs and pearl inlaid furniture from Damascus take the lead among the collective exhibits from all the countries over which the [Ottoman] star and crescent fly."

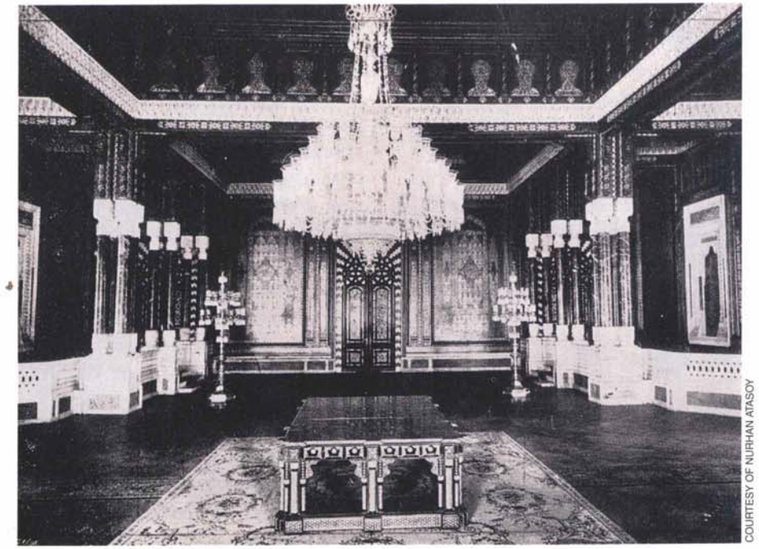
The Syrians also applied complex geometric inlays, which contrast the mother-of-pearl with fruitwood veneers, to both traditional Islamic and European furnishings. In contrast to the small elegant Islamic-style polygonal tables, the

European-influenced furnishings in this style – elaborate sideboards, honeycombed with arched compartments, consoles and tables – often reflect the ornate heaviness of late Victorian taste. Popular in Egypt and North Africa as well, these pieces are often difficult to assign to a specific country of origin. Wonderful examples of Syrian inlaid furnishings can be seen in the Azem Palace Museum, originally the residence of an 18th-century Ottoman governor, and the Khaled Azem House, both in Damascus, as well as the Touma Collection at the Huntington Museum of Art in Huntington, West Virginia.

The use of mother-of-pearl inlaid decoration in Cairo can be traced to the 13th-century Mamluk period. Here too, few early examples survive, mostly mosque furnishings.

In his book *Glimpses of the Land of Egypt*, published in 1852, the artist W. H. Bartlett provides a wonderful description of a traditional Cairo interior:

"The entrance...is by a door covered with minute and elaborate carving. The middle of the room is lower than the rest, and...with the fountain in the center is paved and inlaid with marble of different colours. To the right on the wall is also a sloping marble slab with starlike edges over which the water pours and trickles, thence passing through pipes into the basin of the fountain.... The raised part of the room is paved with common stone and covered with mats in summer and carpets in winter; this is surrounded by a divan or low seat around the walls, covered like a sofa, and with long cushions resting against the wall for the entire length, sometimes with others in the angles; these are all covered with materials in richly ornamented patterns, more or less expensive. The roofing is supported by carved beams which with the intervening flat space are decorated and gilt in the richest manner. Of the windows, some are glazed, and are richly ornamented with stained glass, others looking into the verdure of the garden, have simply open lattice ironwork. In the recesses of this room are different...



COURTESY OF NURHAN ATASOY

An inlaid table in a reception hall in Istanbul's Çirağan Palace.

GALERIE BENLI, PARIS

The *tuğra*, or imperial monogram, of Sultan Abdülaziz II inlaid in a tabletop.

Worked into designs of delicate floral arabesques and intricate geometrics, each mother-of-pearl plaque was set in place, then surrounded and secured with a fine silver or pewter wire.

GALLERIES OF LOYD-PAXTON, DALLAS

An extraordinary two-drawer commode, inlaid with mother-of-pearl, bone and ebony, shows how Syrian techniques – and exquisite craftsmanship – were adapted to European furniture designs.

cabinets, fancifully inlaid with pearl and having small panels of delicate and intricate carving."

During the 19th century, Cairo craftsmen, in addition to carrying out commissions from local residents and supplying the burgeoning trade with England, produced many pieces of inlaid furniture for Egypt's growing foreign community, estimated at 100,000 in 1879. They adapted and embellished European furniture designs, but also continued to produce polygonal tables, Qur'an stands and bridal chairs with caned canopies. Interestingly, not all those producing inlaid furnishings were Egyptians: Records indicate that one highly successful workshop was owned by Giuseppi Parvis, an Italian whose cabinetry was displayed in the Egyptian exhibit at the Philadelphia Centennial Exposition in 1876.

While Egypt's 19th-century rulers clearly preferred European furniture, there is some evidence of royal patronage for locally produced mother-of-pearl inlaid furnishings. Al-Hilmiyya, a well-known workshop and school for inlay and carved woodwork, was founded by the mother of the khedive Abbas Hilmi II, who ruled from 1892 to 1914.

In addition to the geometric inlay using mother-of-pearl with fruitwood veneer, the Egyptians favored darker, more iridescent mother-of-pearl set into ebonized wood. Marvelous examples of this ebonized look, together with an inlaid *mashrabiyyah* screen, can be seen in Cairo's Manyal Palace, a complex of Islamic pavilions built at the beginning of this century.

Though relatively few Americans had ventured to the Middle East, they too eagerly adopted the exotic new styles. Design publications and French-trained decorators, important arbiters of taste in the 19th century, first introduced this latest European trend into fashionable circles. Beginning in the 1870's, Moorish and Turkish smoking rooms began to appear in well-appointed homes in the United States. Period photographs reveal that the design of these interiors, filtered through European taste, had only the vaguest association with their original Middle Eastern sources of inspiration; rather, fantasy, romance and exoticism ruled.

Even for those Americans who had traveled to the region, the objective was never to duplicate an Arab or Turkish interior. In describing his New York apartment, designer Louis Comfort Tiffany, who had visited Algeria, Egypt and Morocco, made perfectly clear that his intention was only to give a suggestion of Moorish style. As demonstrated by the interiors of Olana – an ornate Islamic-Victorian mansion built for 19th-century American landscape painter Frederick Church in Hudson, New York – inlaid tables were an important element in the vast clutter that characterized this style.

Thousands more Americans were introduced to inlaid furnishings at the major international expositions that took place in this country, particularly the 1876 Philadelphia Centennial, where the Turkish bazaar was one of the most exotic attractions, and the 1893 Columbian Exposition in Chicago. In the years that followed the Philadelphia exposition, when these exotic styles were widely adopted, the presence of an inlaid table signified its owner's cosmopolitan taste. By the end of the 1880's, even middle-class households boasted a Turkish "cozy corner," or Moorish details in one of their rooms. Macy's, in response to demand, opened up an Oriental department.

While the vogue for exotic furnishings came and went in Europe and America, the Middle East continued to produce mother-of-pearl furnishings, though in smaller quantities. Commissions were undertaken for a number of early 20th-century rulers in the region, including Egypt's King Farouk and the Hashemite King Faysal, who reigned briefly in Syria and later Iraq. When Sharif Hussein of Makkah, great-grandfather of Jordan's King Hussein, went into exile on Cyprus in the 1920's, he took with him his suite of Syrian inlaid furniture, eventually leaving it with the Greek family with whom he stayed. In a wonderful turn of fate, the descendants of that Greek Cypriot family contacted King Hussein several years ago, offering to return the suite. This handsome settee, with matching side chairs and occasional tables, now stands in Amman's Nadwa Palace, the royal residence.

BILL LYONS

Part of a suite of inlaid furniture made for the Hashemite King Faysal, now back in the Nadwa Palace in Amman.

In the last few years, renewed interest has sparked a revival of the art of inlaid mother-of-pearl, particularly in Syria, whose craftsmen have been supplying commissions to Saudi Arabia and the Gulf states. There is hope that this ancient craft will survive in the hearts and homes of those who love it.

Beth Houston is a New York design consultant and writer who has written about decorative arts and style in Egypt, Spain and Turkey. She would like to thank the Royal Court of Jordan for kindly granting permission to photograph furnishings in Nadwa Palace, and also Dr. Nurhan Atasoy, Dr. Nemat M. Abou Bakr, Mr. Hassan Kamal, Dr. Nazan Ölçer, Joseph B. Touma, MD and Dr. Estelle Whelan.

SABALA GALERIE, PARIS

A five-drawer commode of great beauty but more conventional design.

Inside back cover: A portable throne of Sultan Ahmet I is inlaid with bold-patterned mother-of-pearl and precious stones.

Events & Exhibitions

Susan Crile: *The Fires of War.* In July 1991, this New York-based abstract painter spent 10 days in the burning oilfields of Kuwait. The centerpiece of the exhibition is a 40-foot painting of the "all-encompassing environment" she experienced. University of **Houston's** Blaffer Gallery, through July 31, 1994.

Treasures in Heaven: *Armenian Illuminated Manuscripts.* The exhibition explores one of the Armenian people's principal artistic legacies in the context of Armenia's troubled history. Pierpont Morgan Library, **New York,** through August 7, 1994; Walters Art Gallery, **Baltimore, Maryland,** August 28 through October 23, 1994.

Ancient Egyptian Glass. These 15 pharaonic glass vessels – used to hold perfumed ointments, scented oils or cosmetics – were part of a much larger collection acquired by Charles Lang Freer in Cairo in 1909. Freer Gallery of Art, **Washington, D.C.,** August 13, 1994, indefinitely.

Africa Explores: *20th-Century African Art.* Ceramics, paintings, photography, sculpture, masks and costumes highlight this show, which focuses on the vibrancy of African art. Tate Gallery, **Liverpool, England,** through August 14, 1994.

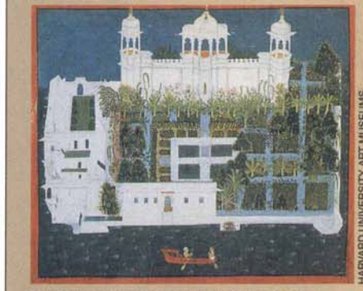
Landscape as Culture: *Photographs by Lois Conner.* Some 80 large-format photographs by a "visual explorer of Asia" depict architecture as well as nature. Smithsonian Institution's Sackler Gallery, **Washington, D.C.,** August 14, 1994 through May 30, 1995.

Textiles of Egypt: *Witnesses of the Arab World, Eighth to 15th Centuries.* The Maurice and Jean-François Bouvier Collection of Egyptian textiles is a particularly impressive example of Arab art over an 800-year span. Institut du Monde Arabe, **Paris,** through August 15, 1994.

Genghis Khan: *Treasures From Inner Mongolia.* This unprecedented exhibition, a collaboration between the United States and China, explores 3500 years of culture and history in the land that produced one of the world's greatest conquerors. Morris Museum, **Morristown, New Jersey,** through August 21, 1994; American Museum of Natural History, **New York,** September 10 through November 27, 1994; Tennessee State Museum, **Nashville,** December 17, 1994 through March 5, 1995.

The Arts of Islam. Persian manuscripts, miniatures and ceramics stand out in this survey of Islamic art. Works from Mamluk Egypt, Moghul India and Ottoman Turkey are also featured. **Minneapolis [Minnesota]** Institute of Arts, August 27, 1994 through March 5, 1995.

Teaching About the Arab World and Islam is the theme of teacher workshops cosponsored by the Middle East Policy Council in Washington, D.C., and conducted by AWAIR, Arab World And Islamic Resources and School Services in Berkeley, California. Confirmed sites and dates include: Alameda County Schools, **Alameda County, California,** August 29 through September 1; Clark County Schools, **Las Vegas, Nevada,** September 24; The Maine Collaborative, **Portland,** September 30, and **Orono,** October 1; Montgomery County Schools, **Rockville, Maryland,** October 27; Roland Park Country School, **Baltimore,** October 29; Fall Conference of AAUG, **Atlanta,** November 3; Natrona County Schools, **Casper, Wyoming,** November 5; Paterson Public Schools, **Paterson, New Jersey,** November 9; Indiana University, **Bloomington,** November 11; New Hampshire Social Studies, **Epping,** November 15. For details, call (202) 296-6767 or (510) 704-0517.



HARVARD UNIVERSITY ART MUSEUMS

From the Mewar school of Indian painting, a white pavilion on Lake Pichola, ca. 1750.

The Grace of White. This imaginative exhibition takes a close look at how the color white – the sum of all other colors – was explored by Indian and Persian artists of many periods and schools. Safavid, Moghul and Rajput artworks are among those considered. Although the paintings on display are wide-ranging in style and period, they share an underlying unity. Under the Moghul emperor Shah Jahan, white symbolized political strength and spiritual purity. When Shah Jahan ended the tradition of red sandstone palaces and built structures of white marble, court artists often followed his lead, painting works in which large expanses of white are highlighted by rich colors. Rajput princes – Hindu vassals of the Muslim emperors – responded to imperial taste in encouraging their own artists to emphasize whites. Many of the works on display were painted for the Moghul emperors' Rajput courtiers from the Punjab Hills and Rajasthani Plains. Harvard University's Sackler Museum, **Cambridge, Massachusetts,** July 23 through September 25, 1994.

Silks for the Sultans. Ottoman Turkish court weavers made sumptuous velvets and silk brocades in Bursa and Constantinople. Museum of Fine Arts, **Boston,** through September 4, 1994.

Thundering Hooves: *Five Centuries of Horse Power in the American West.* The vital role of horse and rider in the settlement of the Hispanic Southwest is highlighted. Much was derived from the horsemanship traditions of al-Andalus, or Muslim Spain. **Albuquerque [New Mexico]** Museum, through September 4, 1994; Buffalo Bill Historical Center, **Cody, Wyoming,** October 1, 1994 through January 1, 1995; other venues.

Islamic Culture and the Medical Arts. This is a celebration of the 900th anniversary of a manuscript copy, completed in Baghdad, of an Arabic medical treatise by the famous physician al-Razi. Items on display include calligraphy, maps and photographs. National Library of Medicine, National Institutes of Health, **Bethesda, Maryland,** September 12 through December 31, 1994.

Egyptian Antiquities. The exhibition features over 400 artifacts from ancient Egypt, many of them from the Chigi Collection. Albertinum, **Dresden, Germany,** through September 18, 1994.

Egyptomania: *Egypt in Western Art From 1730 to 1930.* Some 300 works from the Louvre and other French museums illustrate the fascination of Western artists with ancient Egyptian themes. National Gallery, **Ottawa, Canada,** through September 18, 1994.

Realms of Heroism: *Indian Paintings From the Brooklyn Museum.* Various categories of hero, including warrior, romantic figure and royal ruler, are explored in this show of 75 Indian miniature paintings. **Brooklyn** Museum, October 14, 1994 through January 8, 1995.

Forces of Change: *Artists of the Arab World.* This exhibition of contemporary works by Arab women artists seeks to de-mystify the region and its women. **Chicago** Cultural Center, October 23 through December 9, 1994; Wolfson Galleries, Miami-Dade Community College, **Miami,** January 13 through February 25, 1995; other venues.

Contemporary Artists Inspired by Ancient Egypt. This unusual display in the Egyptian Sculpture Gallery includes paintings, sculptures and even interactive installation pieces using CD-ROM computer technology. British Museum, **London,** November 1994 through February 1995.

Byzantium: *Byzantine Treasures From British Collections.* Brought together from public and private sources, the exhibition highlights the empire's accomplishments in arts, letters and science, through painted icons, illuminated manuscripts, textiles, mosaics and other artifacts. British Museum, **London,** December 9, 1994 through April 23, 1995.

Modern Art From North Africa. Paintings, sculptures and graphics illustrate the variations in the artistic climates of Egypt, Morocco, Algeria and Tunisia. Museum voor Volkenkunde **Rotterdam, The Netherlands,** December 10, 1994 through May 31, 1995.

Paintings From Shiraz. Twenty paintings and eight bound manuscripts are on display, highlighting the arts of the Persian book created in the southern Iranian city of Shiraz from the 14th through the 16th centuries. Smithsonian Institution's Sackler Gallery, **Washington, D.C.,** December 24, 1994 through September 24, 1995.

Textile Trip to the Maghreb. Textile pieces and contextual objects demonstrate the cultural, historical and economic links between Arab northwest Africa and Spain. Museu Tèxtil, **Barcelona, Spain,** through January 12, 1995.

The Saudi Aramco Exhibit. Centered on the Arab-Islamic technical heritage, this permanent interactive, "learn-by-doing" scientific exhibit relates the historical background to today's petroleum exploration, production and transportation. **Dhahran, Saudi Arabia.**

Information is correct at press time, but please reconfirm dates and times before traveling. Readers are welcome to submit information for possible inclusion in this listing.

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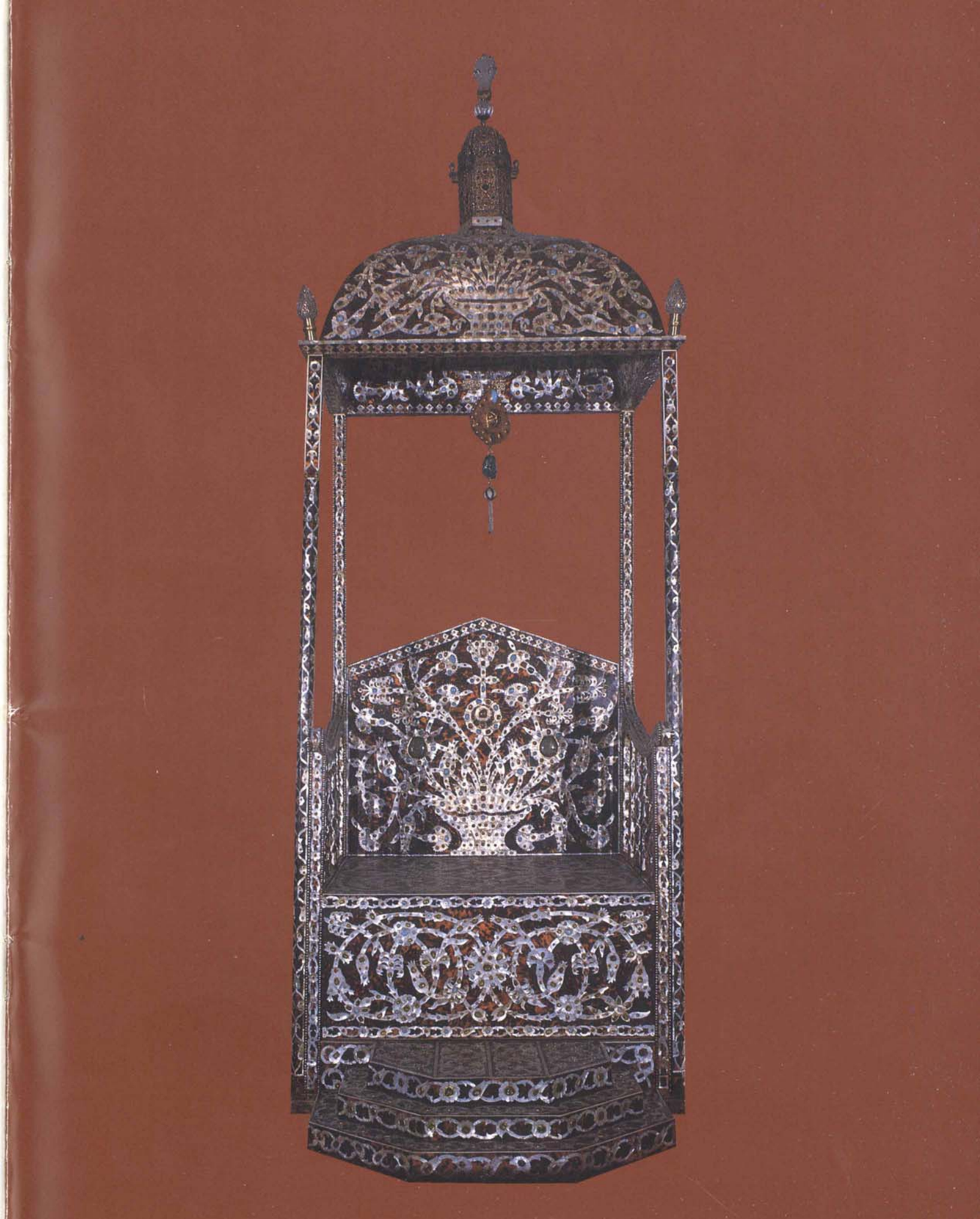

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