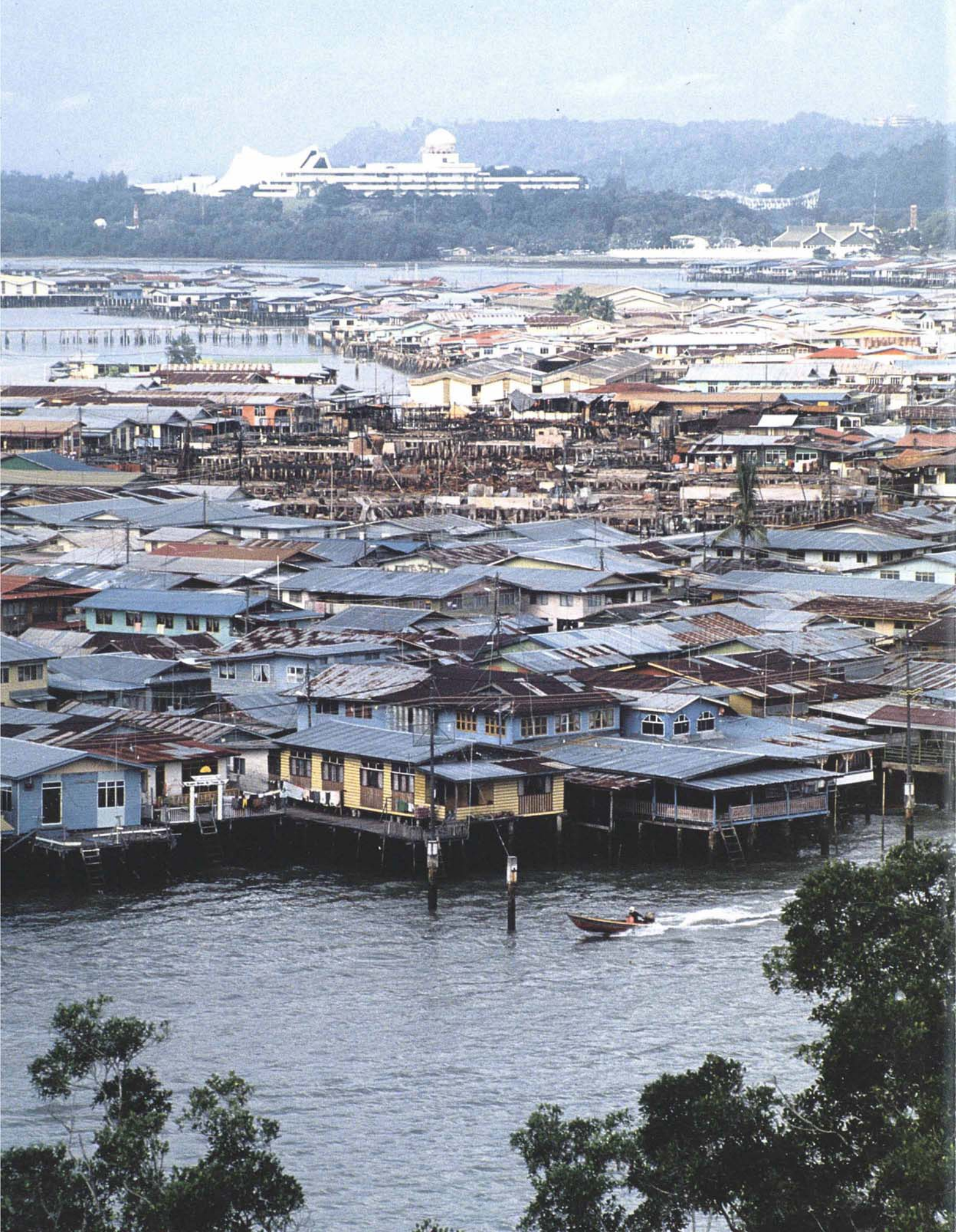


WHO WERE
THE SEA PEOPLE?



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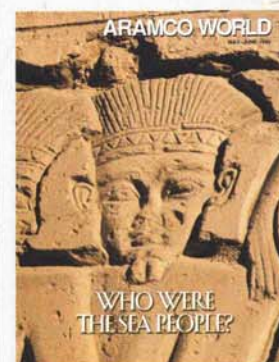
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Saudi Aramco, the oil company born as a bold international enterprise more than half a century ago, distributes *Aramco World* to increase cross-cultural understanding.

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Cover: The face of a "Sea People" warrior looks out from a wall of the mortuary temple of Ramses III. The Sea People's attacks on nearly all of the eastern Mediterranean states of the late Bronze Age changed history, but who they were and where they came from have yet to be finally determined. Photo: Andreas Wolfensberger. Back cover: In the chilly highlands of Yemen, south-facing houses conserve energy with party walls on their east and west sides. Illustration: Aaron Johnson.

◀ Houses built above the river in Brunei catch cooling breezes.

ARAMCO WORLD

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Flourishing New and New 2

By Arthur Clark

In the 75 years since its foundation, the American University in Cairo has reinvented itself more than once to adjust to changing times, but it has steadily broadened its role as an invaluable cultural link between Egypt and the US.



CLARK



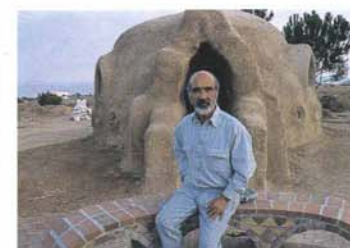
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Narrow streets, massive walls, courtyards, domes, wind towers and other traditional elements of architecture in the Middle East are based on sound scientific principles, and serve the cause of comfort in demanding climates.



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Since 1975, Nader Khalili has carried principles of Middle Eastern desert architecture to the forefront of the search for affordable, environmentally sensitive housing by molding earth into distinctive arches, vaults and domes.



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Around 1200 BC, attackers known as the "Sea People" raided lands throughout the eastern Mediterranean. A geoarcheologist argues that the Sea People may have been a confederation, unacknowledged till now, whose capital was Troy.



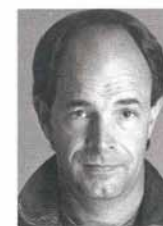
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Rising on stilts above the Brunei River and surrounded by Brunei's modern capital, Kampong Ayer developed an architecture unique to its setting. Today, residents are proud of their successful blending of tradition and modernity.



HANSEN



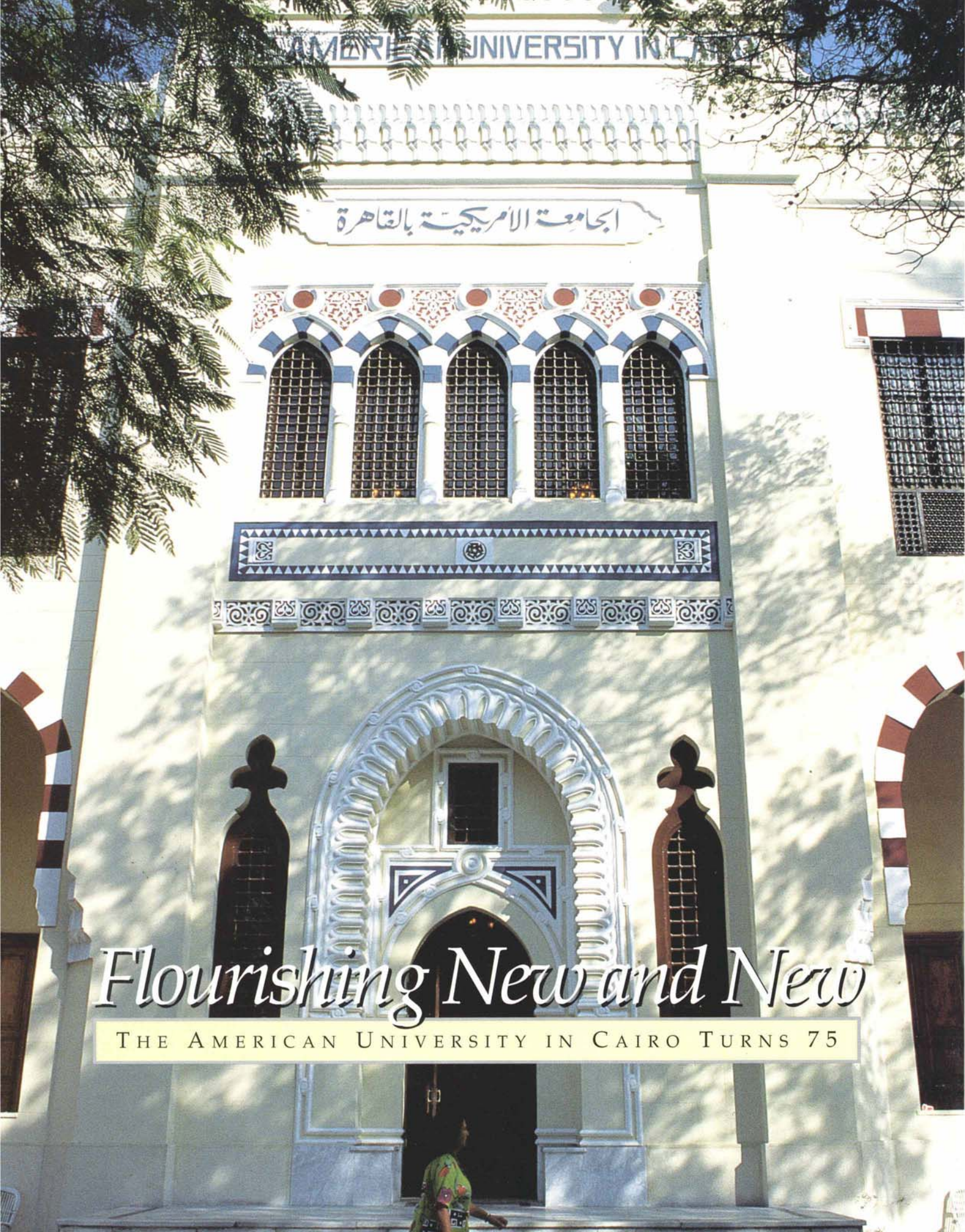
London's Islamic Art Market 40

By Louis Werner

From Notting Hill Gate to Mayfair, a host of London dealers and galleries comprise the world's top market for Islamic art. Each April and October, the best of that market appears on the auction block to cap off another season.



WERNER



Flourishing New and New

THE AMERICAN UNIVERSITY IN CAIRO TURNS 75

ESTABLISHED IN 1919 AND OPENED THE NEXT YEAR, THE AMERICAN UNIVERSITY IN CAIRO WAS CREATED AS A BRIDGE BETWEEN EAST AND WEST, SOME SAY, OR A RICH BLEND OF CULTURES, OR A VIGOROUS HYBRID PLANTED IN EGYPTIAN SOIL. EACH METAPHOR LIGHTS

A DIFFERENT ASPECT OF THE INSTITUTION THAT, THROUGHOUT THIS ACADEMIC YEAR, CELEBRATED 75 YEARS OF SERVICE TO EGYPT AND THE MIDDLE EAST, AND 75 YEARS OF CONTINUOUS SELF-RENEWAL.



WRITTEN BY ARTHUR CLARK
PHOTOGRAPHED BY THOMAS HARTWELL

The school's founder, Charles A. Watson, grew up in Asyut, Egypt, the son of American missionaries, and formally put forward the idea for an American university in Cairo in 1912. He aimed not only to offer a high-quality education, in English, for those Egyptians who were then going abroad to pursue their studies, but, as the university history has it, "he also believed that such a university could improve his own country's understanding of the area."

Since then, some 13,000 students have earned degrees at AUC and thousands more have been trained in a variety of fields. Egyptians are by far the majority of the alumni, many prominent in their fields today, but university graduates also include hundreds of non-Egyptians from throughout the Middle East and around the world. Among alumni are one head of state, at least a dozen ambassadors, numerous professors, journalists in many capitals, and thousands of successful businessmen and -women.

Internationally known scholars are on AUC's faculty. They include professors of the caliber of Dr. Hamdi El Sakkut, who in February shared the King Faysal International Prize for Arabic Literature—the Arab world's equivalent of the Nobel Prize. And AUC's facilities, modest to start with, have come to be some of the best in the Middle East as the school has carved out a special niche for itself in the academic world.

The original building of the American University in Cairo, left, today serves as the school's administrative center. Below, the AUC campus nestles in the heart of downtown Cairo.

AUC kicked off its anniversary celebrations at class-opening ceremonies last September and will cap them at commencement exercises this June. In between, a host of activities are taking place, running from alumni reunions around the globe to a symposium at the United Nations population conference in Cairo that featured us Vice President Al Gore, to first-class AUC Theater Company performances of Neil Simon's "The Good Doctor."

The highlight of a gala alumni reunion in October was the rededication of Ewart Hall, a 1150-seat auditorium that opened in 1928 and was recently refurbished with donations from alumni and friends. Once the largest auditorium in Cairo, it has served both AUC and the surrounding community, hosting regular concerts by Umm Kalthum, lectures by the controversial Egyptian writer Taha Hussein and even a performance by the Palestine Orchestra directed by Arturo Toscanini.

By Egyptian standards, of course, AUC's diamond jubilee is small potatoes. Al-Azhar, the renowned religious university a few kilometers away, is more than a millennium old (See *Aramco World*, September-October 1973).

In size, too, AUC is diminutive. The approximately 4300 full-time students are like a drop in the nearby Nile compared with Cairo University's enrollment of around 80,000. Even counting the nearly 11,000 people enrolled in AUC's continuing education and extension classes, the school is vastly outnumbered.



RIGHT: ARTHUR CLARK

Being small can have its benefits, however. In the early days, at least, it was unusual for a student not to know all his or her classmates on a first-name basis. And many of those friendships were rekindled as alumni returned to AUC to greet old friends and recall old times in strolls on the school's grassy campus, an oasis of quiet in the dusty whirl of downtown Cairo. Some, in fact, simply stepped out of their offices for the homecoming.



Auc students gather on the library steps to study and to chat between classes.

One such graduate, Dr. Laila El Hamamsy, was elected Miss AUC as a senior in 1946 and went on to earn a doctorate from Cornell University. "AUC for me was the most wonderful place," El Hamamsy said. "I got respect there and I responded tremendously."

Today, she is professor emerita at AUC's Social Research Center, which she directed for 25 years and where she pioneered studies in such subjects as population and women's development. As an Egyptian with a Western education, she calls herself one of a breed of "hybrid" scientists who can bridge two cultures, blending elements of both to understand and tackle her country's problems.

"We're educated in the West...but we're not an image of the West," El Hamamsy said. "Here we can demonstrate what can be done by people committed to a society."

"It is even more challenging and even more important that we carry on and keep getting the facts" in the turbulent times facing Egypt today, added the energetic professor, the strength of whose ideas belies her 70-plus years.

The Social Research Center is one of two applied research institutes at AUC. The other is the Desert Development Center, which is working to find and disseminate ways of establishing sustainable desert communities in a country whose agriculture now depends almost entirely on a narrow green ribbon of irrigated land along the Nile. Backed by a \$4-million grant from the U.S. Department of Agriculture, the DDC recently launched a training program for 400 university graduates a year on 200 hectares (500 acres) of land in the Western Desert.

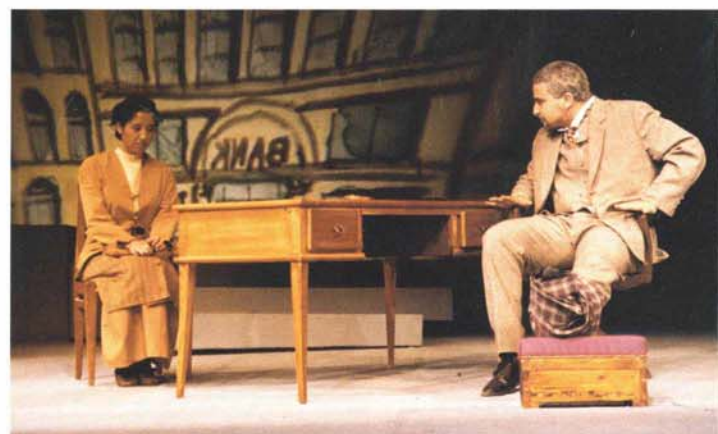
Egyptian author Naguib Mahfouz is another part of the AUC bridge between Occident and Orient. In the early 1970's, Mahfouz agreed to a proposal from the AUC Press to translate and publish his works in English, a deal that current director Arnold Tovell

called "a stunning commitment" for a press that publishes only about 15 titles a year.

By 1988, when Mahfouz became the first Arab writer to win the Nobel Prize (See *Aramco World*, March-April 1989), the AUC Press had published nine of his books. "I believe that these translations were among the foremost reasons for my being awarded the Nobel Prize," Mahfouz said at an AUC ceremony.

In bringing Mahfouz to the world, the AUC Press also brought an illuminating view of Egypt. "Naguib Mahfouz is the most widely popular of Nobel Prize winners in recent decades not only because he is a novelist and a storyteller but also because he is the best key to understanding this part of the world," said Tovell.

In a similar vein, Egypt's first lady Suzanne Mubarak, who received her bachelor's and master's degrees from AUC in 1977 and 1982, emphasized AUC's intercultural bridge-building at the class-opening ceremonies in September. "In a time when bridging the cultural divide between East and West has assumed a new sense of urgency, the American University in Cairo, with its American educational principles and its solid adherence to the culture and traditions of Egypt, exemplifies the best of both worlds," she said.

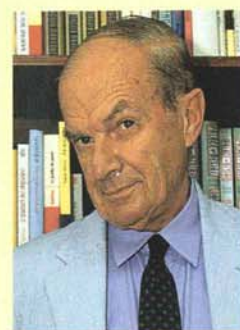


The AUC Theatre Company brings humor to the stage with Neil Simon's "The Good Doctor." Opposite, AUC engineering alumnus Hisham Abbas, whose songs stand at the top of Egyptian pop charts, livens up the anniversary weekend with a campus performance.

Her own experience as a student assessing problems in the low-income Bulaq section of Cairo led Mubarak, as a senior, to found a primary school there. The class work "was a period of discovery and of motivation," she said. "Little did I know then that in a very short time I would be in a position [as first lady] to apply my knowledge in concrete action." The program she established as a student now serves more than 50,000 children and has been expanded to include community development.

U.S. Ambassador Edward Walker, speaking the same day, said his own studies at AUC 17 years before had been equally eye-opening. "I and my fellow students from America, Japan and many other countries were challenged to think of the world from a different perspective—the perspective of Egypt. And this meant that we learned far more than the Arabic language we were studying," he said.

"Naguib Mahfouz is the most widely popular of Nobel Prize winners in recent decades not only



because he is a novelist and a storyteller but also because he is the best key to understanding this part of the world."

AUC Press Director
Arnold Tovell



OPPOSITE: ARTHUR CLARK; ABOVE: AUC THEATRE COMPANY

He told *Aramco World* that, as ambassador, he felt indebted to AUC "for my broad familiarity with Egypt's culture, people, heritage and language."

AUC President Donald McDonald, an educator and administrator from Texas A&M, highlighted AUC's role as a regional catalyst in the fields of English- and Arabic-language instruction, management development, continuing education, research and environmental studies.

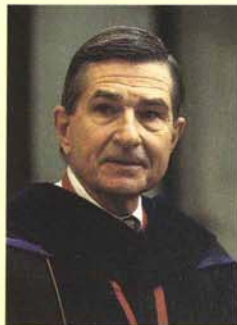
But equally important, McDonald said, is AUC's undergraduate liberal-arts emphasis, part of its American heritage. Required core classes in such subjects as Arab history, society and literature "train students for a lifetime of learning," he said, and distinguish AUC from Egypt's huge national universities, which focus on specialized studies from the outset.

Furthermore, AUC's size means there can be "more interaction between students and faculty to foster a questioning attitude" than at the larger schools, he said. "We're not trying to make rebels out of the students; we hope that they leave us as good citizens. What we're trying to engender in our students is the willingness and the ability to question. That's a very important attitude now."

Many AUC students readily question their professors and peers, but most appear to be far from campus rebels, at least in any Western sense.

Omnia Nabil, a 23-year-old Egyptian woman who earned a bachelor's degree in political science and business in 1992 and is now pursuing a master's in international relations, said AUC had provided her the opportunity for "interaction and freedom of thought."

Required core classes in such subjects as Arab history, society and literature "train students for a lifetime of learning,"



... and distinguish AUC from Egypt's huge national universities, which focus on specialized studies from the outset.

AUC President Donald McDonald

She served as a delegate to the international Model United Nations and the Model Arab League, as well as an AUC representative at a student conference in Russia, and she holds a full-tuition scholarship from the Sasakawa Foundation of Japan in recognition of her leadership. A benefit of traveling alone and speaking out abroad, she said, was "being able to break a lot of stereotypes and misconceptions about Egypt and Egyptian women."

Hisham Abbas, who wowed alumni and guests at the AUC reunion in October with his performances of Egyptian love songs, is doing less conventional "post-graduate" work. A 1988 alumnus with a degree in engineering, he went on to a career in music, becoming one of the most sought-after singers in Egypt.

Though his vocation has no direct tie to his degree, Abbas credits his AUC education with giving him the courage to follow his dream. "I always wanted to be creative. AUC opened my mind and made me more confident," he said. "When I graduated I was able to do something on my own."

Seifallah al-Sharbatly, a 22-year-old senior from Jiddah, Saudi Arabia, has another form of creativity in mind. A business administration major and a second-generation AUC student, he plans to use his education to expand his family's global agricultural business by acquiring a shipping fleet.

The fact that AUC courses are in English, the world business language, helped him decide to enroll there, said al-Sharbatly, noting that he is comfortable at AUC because "you get the education you

can get in the United States and still not lose touch with your Arab roots."

Emma Zitter-Smith, 20, a junior from the University of Colorado who is in the first-year program at the university's Arabic Language Institute, said she enrolled at AUC to take a first-hand look at the Middle East. She said she came to Cairo "to live here, study the language and actually talk to people" instead of simply accepting the media depictions of the region.

"They portray the Middle East as a conglomeration of radicalism, and I haven't found that to be true," she said. "I feel very safe in this city...safer than in Boulder."

AUC's Kamal Adham Center for Television Journalism deals directly with issues like the one raised by Zitter-Smith.

Its director is Abdallah Schleifer, an American-born Muslim who was Cairo bureau chief for NBC News from 1974 to 1983. "When you work in the Third World [in the international media] your beat is only plague, disaster and catastrophe," said Schleifer, explaining that the goal of the Adham Center is to give students the ability to provide substantive, high-quality, balanced news coverage by training them in contemporary television reporting methods.

That effort may already be succeeding. A number of the Center's graduates are working for international and national news organizations, including the BBC, CNN and Egypt's English-language satellite channel, Nile TV.

Satellite television "should not be a monologue by developed countries broadcast to the developing nations," wrote Nile TV director Hasan Hamed, an AUC graduate and associate faculty member, in Cairo's Middle East Times. "We people of the South also have the right to beam messages about our own culture to the North."

AUC is also a leader in the environmental protection movement in Egypt, and recently established an environmental research and studies program to help answer pressing needs.

"Environmental pollution is a major issue for this country," said Dr. Amr Abdel Hamid, dean of the School of Science and Engineering. "When we looked around and found nobody doing environmental education, we set the goal of becoming a center of environmental studies in Egypt and the region. Part of the larger agenda is to make environmental awareness part of the courses we teach across the board."

For research, students can mine rich resources in AUC's striking 235,000-volume English- and Arabic-language library. The library's English-language holdings make it the strongest in the



The university's English-language television journalism program, top, prepares Egyptian broadcast newsmen for world visibility, while AUC's musical performances, above, are well-known in Cairo. Opposite, Egyptian first lady Suzanne Mubarak, flanked by US ambassador Edward Walker and AUC faculty and administration members, spoke at class-opening ceremonies about her own years at AUC.

country in that language. AUC's Rare Books and Special Collections Library is another important research facility. "It's got one of the world's greatest collections on Islamic art and architecture," said M. Lesley Wilkins, acting associate university librarian, including the renowned K.A.C. Creswell collection, and also focuses on Egyptology and regional travel literature through the 19th century.

AUC has reinvented itself several times since it was founded 75 years ago—initially as a high school for 142 students—and has flourished each time. It now confers bachelor's degrees in 20 fields from Egyptology to computer science and offers a variety of MA and MS degrees, as well as master's degrees in business administration and public administration.

The academic student body, only about 400 in 1960, had grown to 2300 by 1983 and has held steady at around 4300 since the early 1990's as AUC opened its doors to the maximum. Just over 80 percent of the current academic class is Egyptian, with the remainder representing more than 70 countries. More than half are women. The student-teacher ratio is 13 to 1 and the teaching staff is just over 50 percent Egyptian.

Even when us-Egyptian relations chilled in the 1950's and 1960's, AUC stayed open, reflecting the school's good relations with Egypt and its continuing importance to the country. Western staff have been evacuated twice—once when Rommel threatened Cairo in 1942 and again at the outbreak of hostilities with Israel in 1967—but each time the university continued to operate and evacuated faculty and staff returned when the crisis had passed.

In 1921 and 1922, courses equivalent to the freshman and sophomore years in US colleges began, and in 1923 the school granted its first junior-college degrees. The class valedictorian was accepted as a junior at Oberlin College in Ohio, but two other graduates were turned down by a British university, which refused to accept their degrees. In 1924 the New York State Board of Regents recognized AUC degrees, helping to eliminate that obstacle.

Today, AUC is accredited in the United States, and Egypt honors its degrees under the 1962 Egyptian-American Cultural Cooperation Agreement.

By 1928, AUC was offering four years of secondary school and four years of university courses. The same year, it issued its first three bachelor's degrees and the first female student started classes. AUC awarded its first graduate degree in 1950.

Important additions to the school in the early

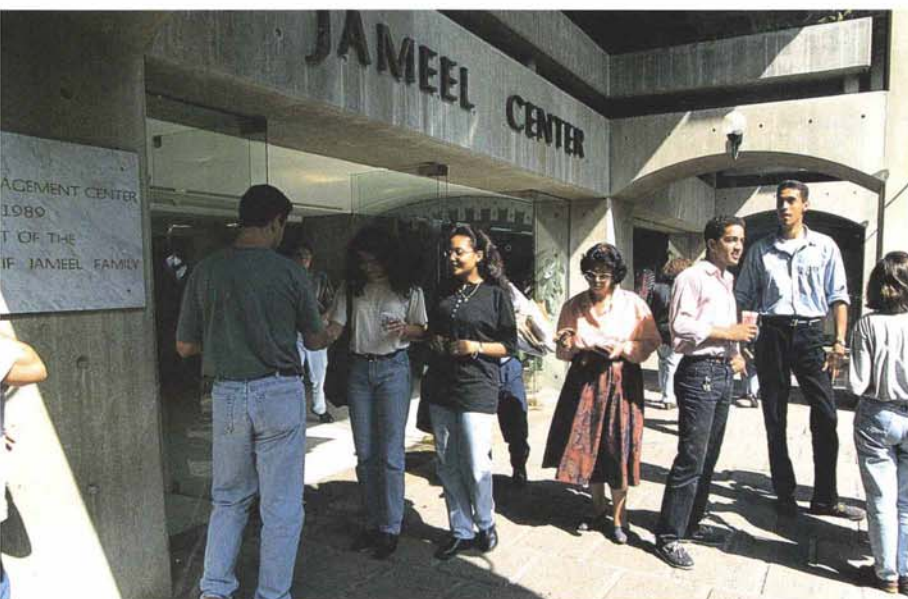


years included, in 1921, the School of Oriental Studies, which later became the Center for Arabic Studies, and, in 1924, the Division of Extension, which ultimately became the Center for Adult and Continuing Education (CACE).

CACE now enrolls nearly 11,000 individuals in cities in Egypt and the Arabian Peninsula, and even opened an operation in Warsaw in 1993 to provide the tools to boost Polish-Egyptian trade. English-language training is CACE's most popular offering, followed by business, computer and Arabic-language and translation courses. The Saudi Arabian Oil Company (Saudi Aramco) has called on CACE for certain kinds of employee training for 15 years, most recently in translation.

The separate Institute of Management Development offers training in modern business techniques. Since 1976, more than 30,000 managers and administrators have attended courses.

The Abdul Latif Jameel Center for Middle East Management Studies is a landmark facility on the AUC campus.



Among the non-degree academic programs at AUC is the highly selective Center for Arabic Studies (CASA), a consortium of 21 American universities including AUC. CASA's aim is to lift the level and broaden the base of Arabic competence in the American academic community, but it reaches farther than that: 1974 CASA graduate Thomas L. Friedman was a New York Times correspondent in the Middle East in the stormy 1980's and his book, *From Beirut to Jerusalem*, won the 1989 National Book Award in the United States.

At \$8,500 a year, an AUC degree isn't cheap, particularly compared with Egypt's tuition-free national universities. So why do students enroll?

For many, it boils down to two words: Good jobs.

Businesses like AUC graduates because of their fluency in Arabic and English and their broad educational backgrounds, explained Farouk El Hitami, dean of the School of Business, Economics and Mass Communication. "Most of the multinational businesses do their hiring at

AUC. People here are trainable. If they do not have a degree in business administration, then degrees in economics, mass communication or political science are acceptable. Many banks even hire people from the science department."

Still, in a country where per-capita income is only around \$650 a year, an AUC education is beyond the reach of most, and, president McDonald admitted, the idea that AUC is an island for the affluent "worries me." He noted that, to help spread its academic offerings wider, the school recently shifted its scholarship program to focus more on financial need than on merit. As part of the effort, the Ministry of Education recommends students from Arabic-language government schools, and 10 students a year who meet AUC standards and show financial need are accepted with full scholarships. The first five students from this program graduated at mid-year commencement in February.

In the American tradition, donations and endowed scholarships from alumni, friends and corporations provide important support for AUC and its students. A five-year fund-raising drive in Egypt, the United States and the Arabian Peninsula in the mid-80's netted \$24 million, \$2 million more than the goal. A gift from a Saudi Arabian alumnus and his family at that time built the ultramodern, 10-story Abdul Latif Jameel Center for Middle East Management Studies.

The US government obviously sees merit in AUC, too. Congress provided grants in local currency—owed for food assistance from the United States to Egypt—for a number of years before approving an AUC trust fund in 1985 worth 50 million Egyptian pounds (then \$71 million). Later, following the devaluation of the pound, Congress passed legislation to restore the fund to its original value.

Has it been a good investment? "Absolutely," said US Ambassador Edward Walker. "For 75 years, AUC has been a bridge of understanding between the United States and Egypt, and the rest of the Arab world as well. It's hard to imagine what could be a better investment for building ties and promoting understanding."

What lies ahead for AUC? McDonald was temperate, but upbeat: "It's not all good or bad. It's promising."

AUC has an important role to play in exploring Egypt's past, as well as in charting its future, said McDonald. "Over the long haul, AUC can have a profound effect, as our students permeate journalism, government, business and industry," he noted.

Seventy-five years along, that's nothing less than what founding president Charles A. Watson would have wished. ☉

Arthur Clark, a staff writer for Saudi Aramco in Dhahran, studied and taught at AUC in the mid-1970's.

"...the American University in Cairo, with its American educational principles and its solid adherence



to the culture and traditions of Egypt, exemplifies the best of both worlds."

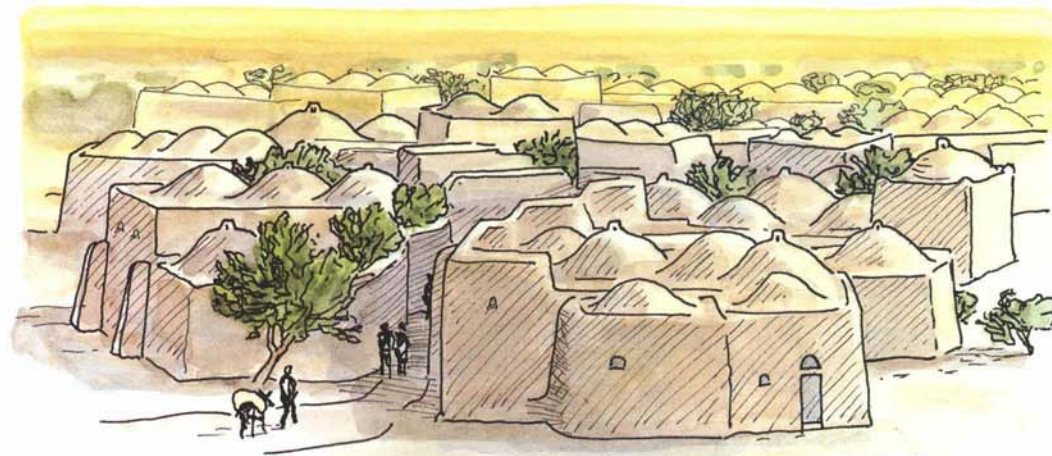
**Egypt's first lady
Suzanne Mubarak**



KEEPING COOL

WRITTEN BY WARREN JOHNSON

ILLUSTRATED BY AARON JOHNSON



MUD-DOMED HOUSES, AFGHANISTAN

For centuries, the older parts of many Middle Eastern cities have been known for their narrow, busy streets, for their covered bazaars, and for the quiet, stony sanctuary of their mosques. Because visitors often find these aspects of the urban environment so fascinating, it is easy to overlook the ways in which they constitute skillful and scientific adaptations to the harsh demands of a hot, dry climate.

Of course, not all Middle Eastern cities are located in such climates. Seacoast cities such as Jiddah and Kuwait are humid as well as hot, while winters in the mountains of Turkey, Iran and Yemen can be very cold. The architectural adaptations to those climates are different, but from Morocco in North Africa to Pakistan on the edge of the Indian subcontinent there are vast stretches of hot, dry desert and semi-desert. In those regions, in cities like Tehran,

Shiraz, Isfahan, Aleppo, Jerusalem, Amman, Riyadh, Madinah, Makkah and San'a—and in many more towns and villages—people have learned how to build so as to keep cool during the day and warm at night.

Thick walls and roofs, for example, temper both the heat of the day and the chill of the night. The narrow streets and alleyways fend off both the sun's glare and the often dusty winds. The traditional building materials of the Middle Eastern city—earth and stone—are available locally in abundance, and they have been used in architecturally pleasing and durable ways.

These desert and semidesert cities are doubly impressive because they have integrated the environmental demands of the desert, and cultural and religious values such as the privacy of the family, into an architecture that meets both physical and social human needs.

The builders of these cities took advantage

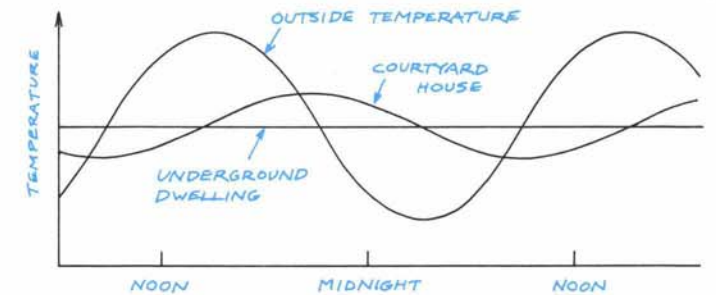
of the one key asset offered by the desert climate: temperatures which, though very high during the day, cool significantly at night. This cooling occurs because of the low humidity of desert air: It is the moisture in air that holds heat.

Both the cooling of the night and the heating of the day are driven by the physical process of radiation. It is of course solar radiation—sunlight—that produces the heat during the day. At night, heat radiates from the warmed earth back into space. By dawn, the air can be quite chilly, and the buildings will have cooled off a great deal as well.

To take advantage of night cooling in the desert, builders employ what is known as *thermal mass*, that is, they build with heavy, dense materials that can absorb substantial amounts of heat from the sun during the day. Stone and earth have very great thermal mass, and the thick walls and roofs built with them accumulate heat during the day and carry it into the evening, keeping interior spaces warm as outside temperatures drop. By morning, the thermal mass of the buildings has cooled off, and the cool mass keeps the interior spaces cool again during the day as the outside temperature rises.

Thermal mass thus not only moderates the extremes of desert temperatures, but also creates a comfortable time lag in the interior temperature changes: The highest temperatures are only reached late in the day and are carried into the evening, well after the highest outdoor reading is past and the day has begun to cool. In the chart, top, above, the temperature extremes are reduced, typically, by two-thirds and the time lag is six hours, but of course both parameters can vary significantly depending on the actual amount of thermal mass in a building.

Nomadic peoples, however, cannot live in dwellings with great thermal mass because they need lightweight, easily transportable materials to protect themselves against the elements. Their solution is simpler: Their densely-woven tents guard against the direct



TEMPERATURE-MODERATING EFFECTS OF THERMAL MASS



MINIMUM THERMAL MASS: BEDOUIN TENT, ARABIAN PENINSULA



MAXIMUM THERMAL MASS: UNDERGROUND HOUSE, TUNISIA

effects of the sun, and provide for cooling through natural ventilation. A tent wall or backstrip, pinned in place, can be easily moved to catch or block winds as needed or, at night, to enclose the tent completely.

At the other extreme are underground dwellings, such as those at Matmata in Tunisia, where the surrounding earth provides virtually infinite thermal mass. This keeps the temperature almost uniform day and night, as in a cave.

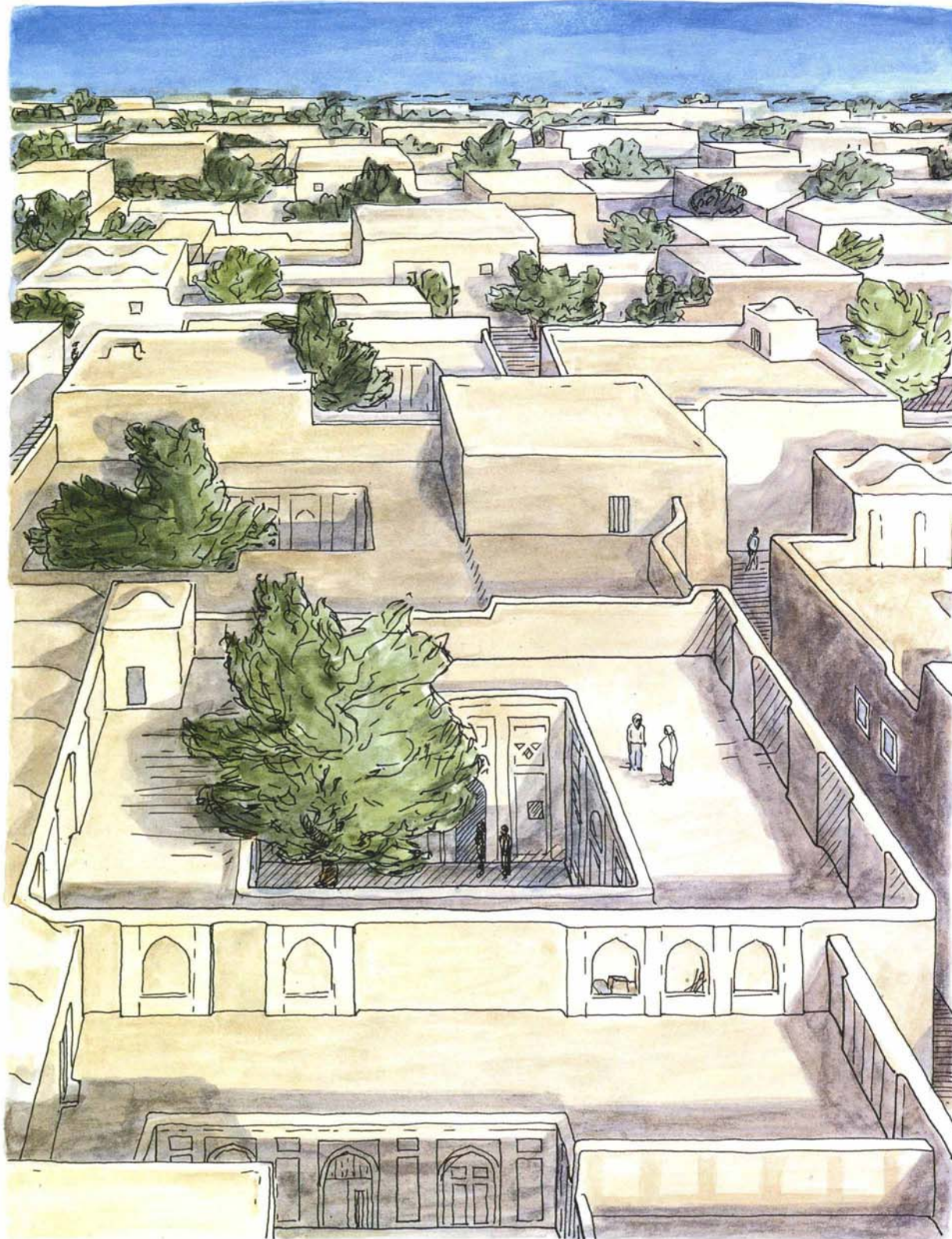
In terms of thermal mass, however, the most common type of dwelling in the desert is a compromise between the tent and the cave: It is the courtyard house, and it provides so many advantages that it is also used in warm countries well away from the rigorous climate, including in southern Europe and the Americas.

From an energy-use perspective, the key

advantage of the courtyard house, with its single row of rooms arranged on three or four sides of the open space, is that it presents a maximum amount of surface area from which to radiate heat at night. The courtyard brings the night air into the heart of the dwelling, so the house, like

any well-designed radiator, exposes as much cooling surface to the air as possible.

The courtyard house offers social advantages, too. It provides an open space for household activities while still allowing the privacy which is so important in Muslim

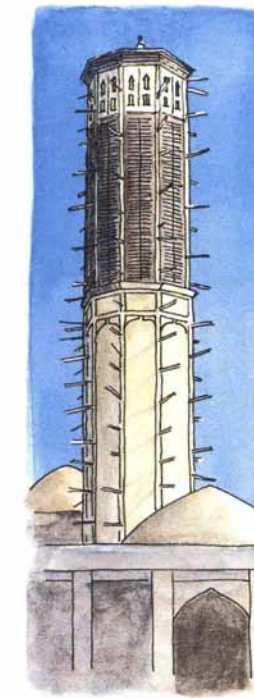


COURTYARD HOUSE, AFGHANISTAN

societies. In more moderate climates, the light and fresh air that the design admits into the interior of the dwelling are important as well. With ample light in the middle of the courtyard house, its exterior walls can be windowless, with the only essential penetration being the entry door. That, in turn, creates what amounts to a private outdoor sitting area for enjoyment in the evenings, and also allows dwellings to be built butting together, with common walls that can significantly reduce building costs. It fosters the higher population densities that contribute to the social vitality of public spaces in Middle Eastern cities.

Streets and alleys are kept narrow, which leaves them mostly shaded—an important criterion in Middle Eastern urban design—and contributes further to high population density. Traditionally, main commercial streets were required to be wide enough to permit two loaded camels to pass each other; residential streets only had to be wide enough for one camel. Short, dead-end alleyways are common, too; they are usually owned by the people whose properties they give access to, often members of the same extended family. These twisting, narrow streets and alleyways effectively break up the flow of wind through the city.

The necessity of preserving social harmony in such close quarters is reflected in the Hadith, the sayings of the Prophet Muhammad. "To God," he is recorded as saying, "the best friends are those who are good to each other, and the best neighbors are those who are good to each other." The privacy of the family is always an important value: A hadith says, "If a man pushes aside a curtain and looks inside without permission, he has then reached a point which he is not allowed to reach." Cooperation when building is essential: "You must not build to exclude the breeze from [your neighbor], unless you have his permission." And the obligation of homeowners to share a common wall is also mentioned:



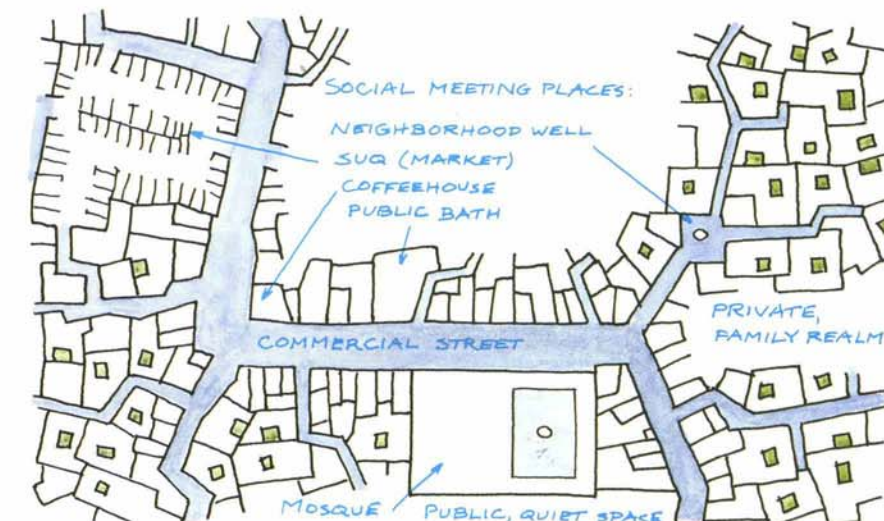
OMNIDIRECTIONAL WIND TOWER, IRAN

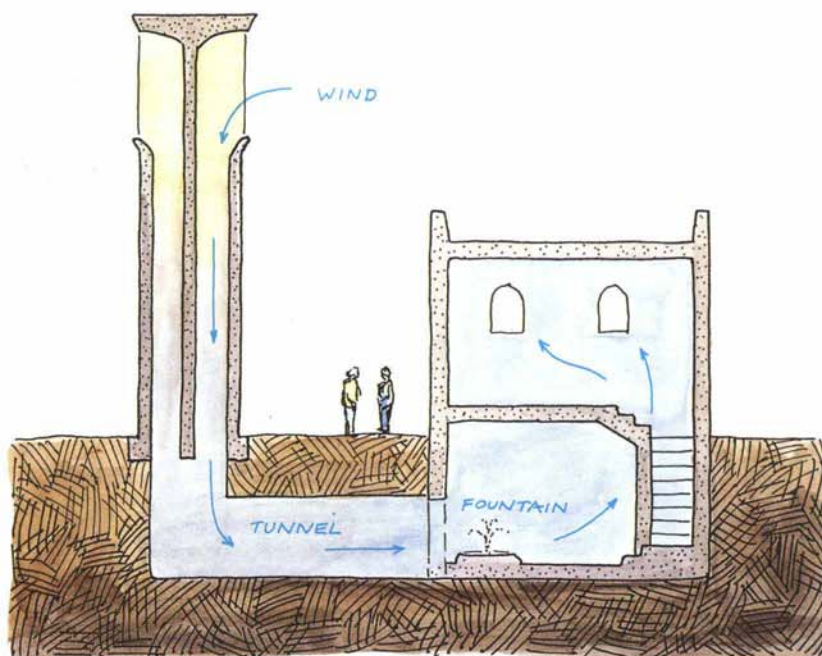
"A neighbor should not forbid his neighbor to insert wooden beams in his wall."

Under certain conditions, however, the courtyard house proves to be unsuitable. High mountain elevations can make winters too cold for such an open design; the high humidity near large bodies of water reduces the nighttime cooling that it provides. Strong, dust-laden winds, common in many parts of the Middle East, can cause problems, too. The "120 days' wind" that blows throughout the summer in eastern Iran, for example, brings with it not only dust but at times also salt swept up from salt pans.

Under such circumstances, builders had to eliminate the courtyard and cover the entire dwelling. While this change also eliminates the easy penetration of light and air, it has produced some of the most striking architecture in the Middle East. In the Atlas Mountains of North Africa it has led to what are called "mud-lump" buildings, where thermal mass is employed so extensively as to create nearly cavelike temperature conditions. In some places, entire villages are covered over, resulting in much-moderated temperature fluctuations.

Iran is particularly rich in examples of sophisticated adjustments to harsh environmental challenges, of which wind towers are among the most interesting. If the wind blows consistently from one direction, the wind





HOW A WIND TOWER WORKS

tower—called *badgir* in the area of the Arabian Gulf—can face that direction, as shown on page 16, catching the breeze and directing it down into the dwelling. More commonly, however, winds are variable, and in such areas the towers are open in several directions.

Wind towers are often quite tall, which not only helps them catch more of the breeze, but also provides ventilation even when there is no wind. This trick also involves thermal mass, as the sketch above shows. The mass of the stone-built tower itself cools off at night. The following day, as the air is warmed by the sun, the tower remains cool. The air that comes in contact with the tower is cooled and, because cool air is heavier than warm air, it falls down through the tower into the space below. Dwellers in the houses also often hang wet cloths on the horizontal wooden bars that protrude from the wind tower's walls, which has the effect of further cooling the air being drawn into the tower. In the winter, of course, wind towers must be closed off from the rest of the house, or else they will function like chimneys, allowing the warm air in the house to rise up and be lost.

In more elaborate cooling constructions, the cooling air from a wind tower is directed past water in a fountain or a pool, or moved through a damp tunnel, in order to take advantage of the further cooling effects of evaporation. A good deal of heat is required

to evaporate water—80 kilocalories for every gram—and the removal of that much heat from the interior of the dwelling has a strong cooling effect.

In dry air, the chilling effect of evaporation is especially noticeable because the rate of evaporation is high. This is what makes evaporative coolers effective. In humid climates, however, where the air is nearly saturated with water, they work poorly—which is why they are being displaced by air conditioners, which work well in both dry and humid conditions.

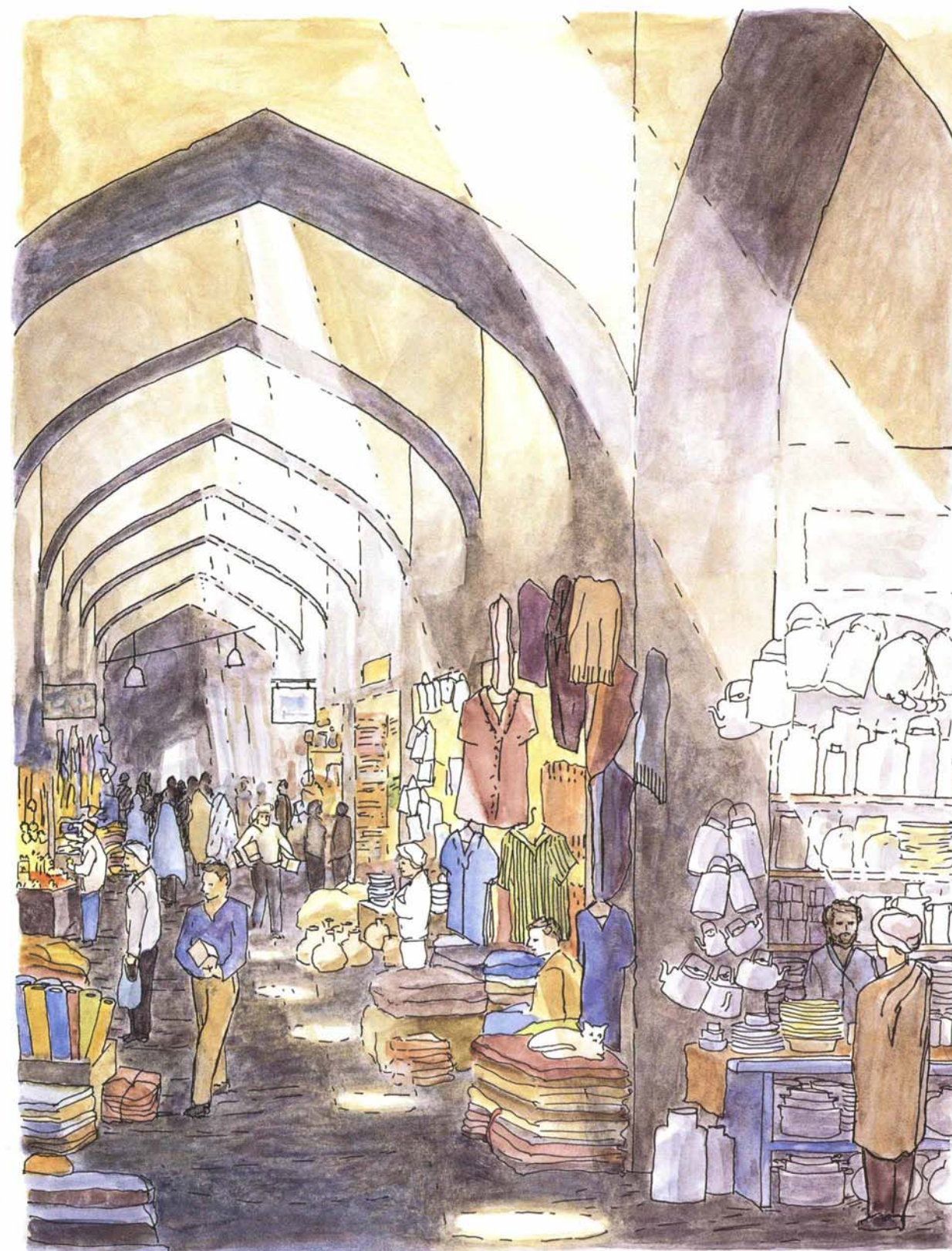
Evaporative cooling was also used to keep water in large cisterns cool for use in the summer. Most such cisterns have gone out of use now, mainly because of the difficulty of keeping stored water clean

and sanitary. But water is still often stored in unglazed, covered clay jugs like amphorae, where it stays cool because of evaporation through the porous walls of the container. And evaporative cooling survives in the many pleasures that gardens provide in the desert. The moisture that water introduces to the small area of a garden makes it slightly cooler and slightly more humid than the surroundings, and turns it into a welcome respite from the desert's aridity.

Markets and bazaars were often completely covered in the Middle East to protect the goods on sale from the almost constant sun, as well as the infrequent rains. Even when completely covered, however, builders found ways both to ventilate them and to keep them from being too dark.

The main passageways of a bazaar are usually covered with barrel-arched roofs or a series of domes. This construction capitalizes on the engineering advantages of arches, but it also has the virtue of allowing the day's heat to rise into the highest parts of the arches; air vents placed there allow the hot air to escape. As air rises out of the vents, fresh air is naturally drawn in from outside—mostly through the bazaar's street-level entrances—to replace it.

The vents, in the form of caps or lanterns atop the domes or the arches, have openings in all directions that allow the air to escape and also

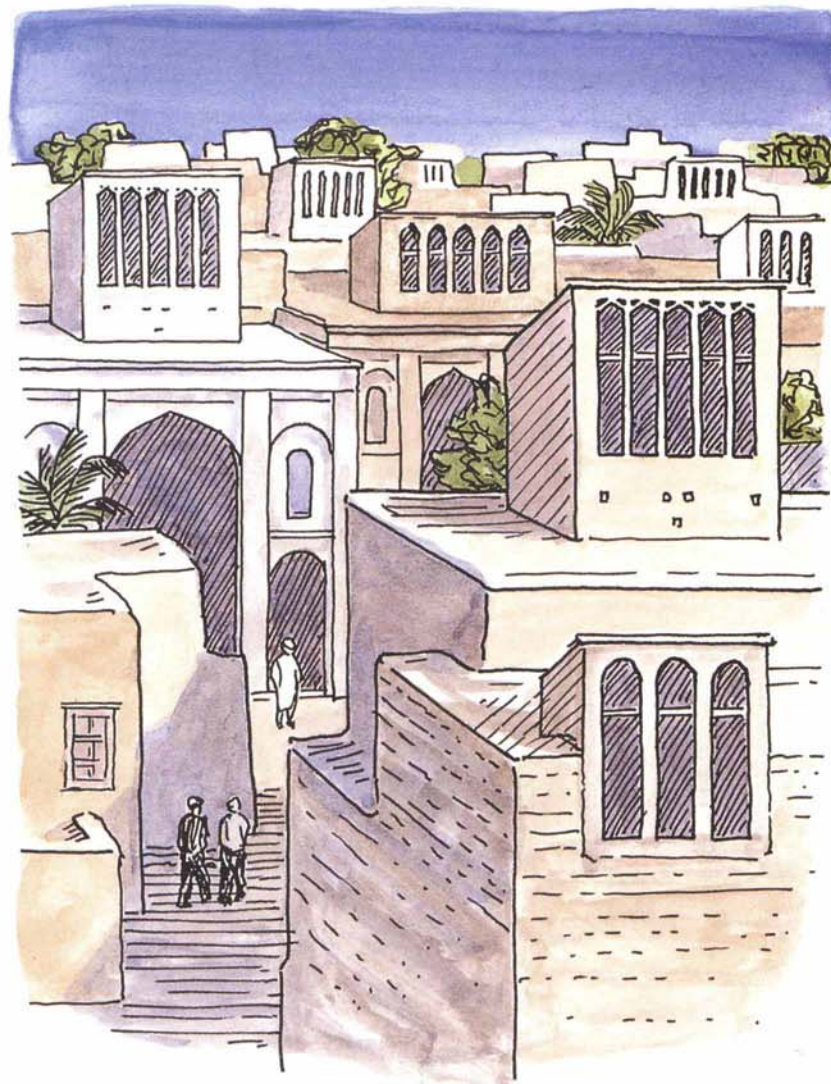


COVERED BAZAAR, IRAN

provide a modest amount of light. (Natural light is now universally supplemented with electric light.) From the outside, the arches force the passing breeze to speed up slightly as it flows up and over them. This acceleration

creates suction and draws hot air out more rapidly. To encourage this Bernoulli effect, the barrel arches are often built at right angles to the direction of the prevailing summer winds.

But not all low-rainfall areas are low in



DIRECTIONAL WIND TOWERS, IRAN

humidity, especially near bodies of water like the Red Sea and the Arabian Gulf. The city of Jiddah illustrates how the wealthy merchants of a port modified their dwellings to make them as comfortable as possible under humid conditions. With limited night-time cooling, continuous ventilation became the most important objective. Families built tall, airy houses of up to seven stories, originally with generous amounts of space between them so as not to interfere with the flow of air.

The availability of imported wood in the city meant that, even though the structures were of stone, their interiors could be built of wood in a light and open plan that promoted the flow of air through the house. The outside breezes were collected in distinctive bay windows cantilevered out from the stone walls. Known as *rawashin*, these windows were covered with decorative wood screens that

allowed the occupants to see out but still preserved the privacy of the family (See *Aramco World*, July-August 1993).

Mountainous regions, with their cold winters, have presented builders with a different challenge. In Morocco and Yemen, tall, skyscraper-like structures were built butted together, to insulate each other, but with their south-facing sides exposed to soak up as much sun as possible. Even when temperatures are low, the winter sun in the desert can be intense enough to make it worthwhile to collect it.

In the mountains of the Asir region of Saudi Arabia, between Makkah and Yemen, however, the architectural response has been closer to that of the cold parts of Europe and North America. In such climates, the goal is the opposite of that of the courtyard dwelling: radiating surfaces are kept to a minimum, usually by building compactly. The dwellings

of Asir demonstrate this with a squarish plan several stories high, basically similar to the two-story Swedish farmhouse or the homes of colonial New England.

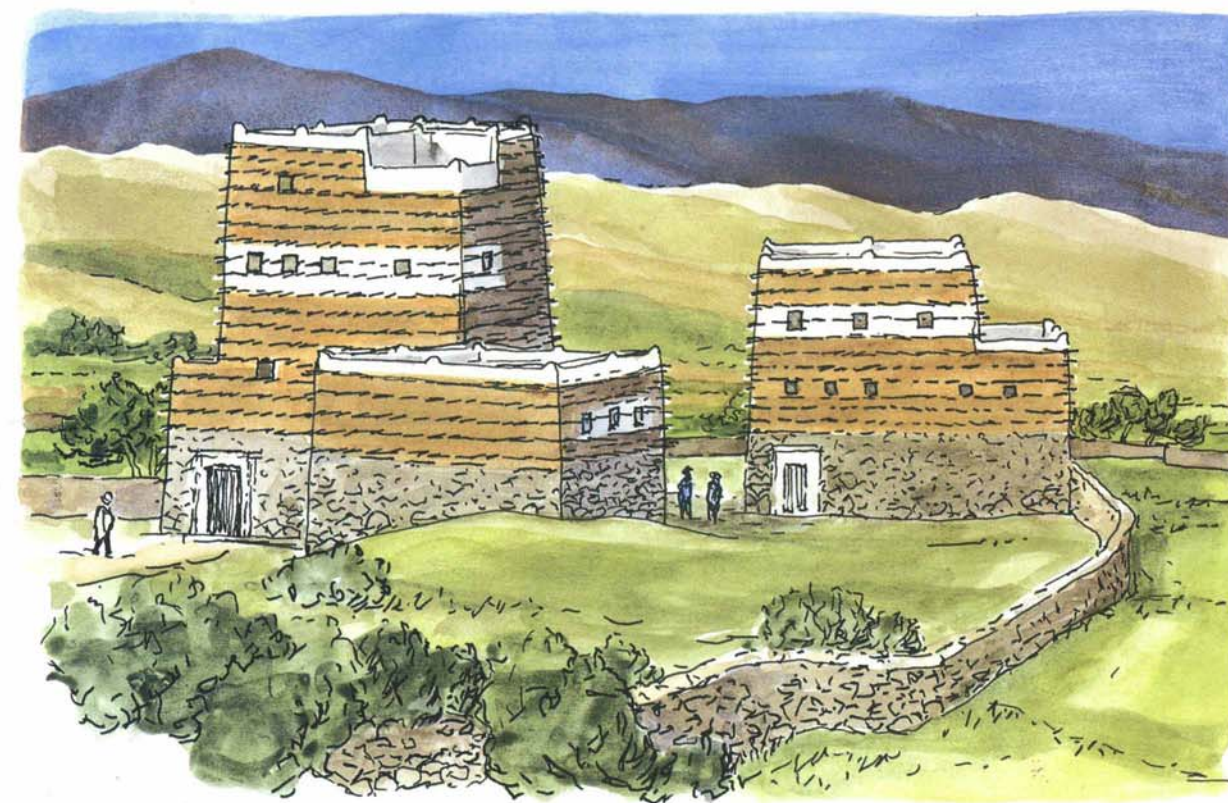
In Europe and North America, however, wood was abundant and cheap, and wood is a good insulator. But it is difficult to come by in the Asir, and in the cold mountain air, the earth and stone, whose thermal mass is so valuable in hot regions, becomes a liability: It loses heat to the outside and, as the winter progresses, occupants of a stone house find themselves surrounded by walls which grow ever colder—and remain cold until the warming of the spring.

All of the principles used by the desert builders are the same ones that underlie efforts in the temperate regions of the world to make solar houses cost-effective. While much early solar-heating technology—with its collectors, heat-storage devices, pumps, sensors, and electronic controls—turned out to be too complex and expensive, its “passive” counterparts have, like the systems of the

desert builders, proved successful. Walls of high thermal mass serve both to store heat for cold days and, in effect, “store coolness” for hot ones. Natural heating and ventilation through well-placed windows can also do much to keep a dwelling comfortable.

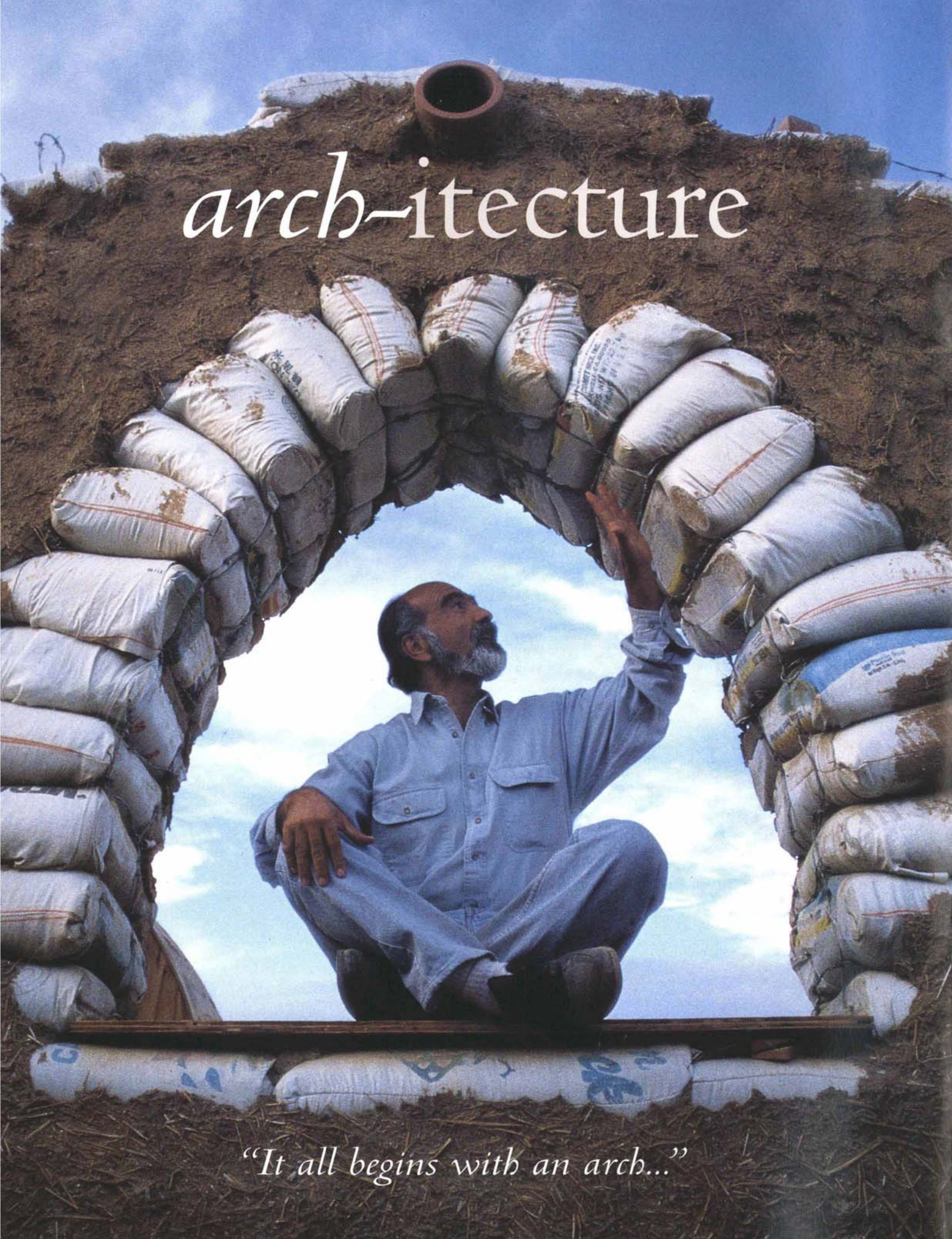
Modern-day builders in both the West and the Middle East have one key advantage over the traditional desert builders: the availability of glass and insulation. Glass allows much more efficient collection of warmth from the winter sun, while insulation saves the warmth once it is collected. Yet in their scientific principles, the modern passive-solar house is very much in the tradition of the dwellings of the desert. ☉

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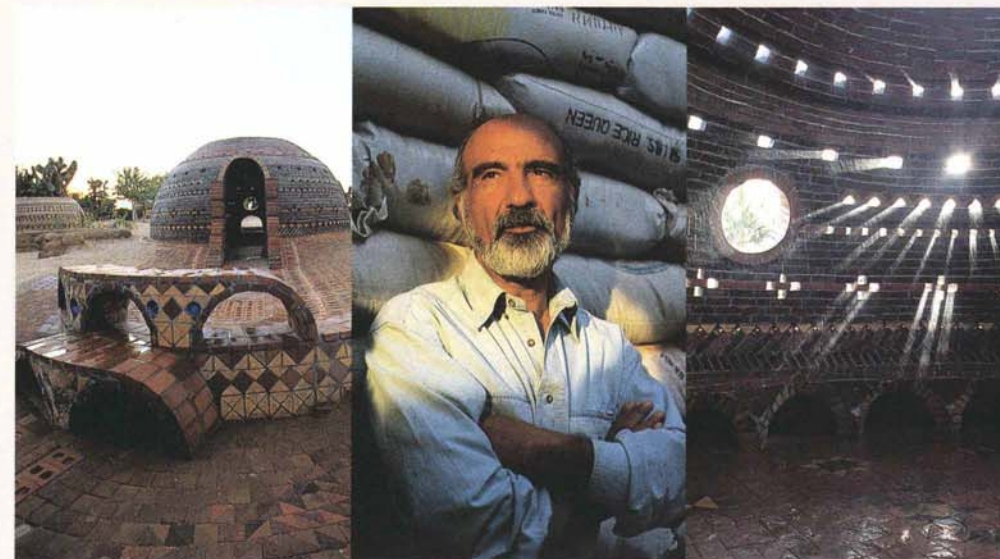


ASIR, SAUDI ARABIA

arch-itecture



"It all begins with an arch..."



Using only earth as a building material reduces construction costs to a minimum, says Nader Khalili. His sandbag dome house begins with an arch, left, while his geltaftan, or fired-earth, house, above left and right, has received international recognition.

WRITTEN AND PHOTOGRAPHED BY GEORGE BARAMKI AZAR

Under the great dark dome of a Mojave desert night, architect Nader Khalili's students sit before a campfire reading Persian poetry aloud. The words of Hafez and Rumi mingle with the crackle of burning logs. Each student has traveled to Hesperia, California, to learn about building homes with earth, and the poems they read are about clay.

"Clay is the gift of Eastern civilization to the West," Khalili says. "My goal is to enable two people to create their own home, with no machinery and very little money, using the earth under their feet as their primary building material."

Not far away, on the grounds of Khalili's California Institute of Earth Architecture, sit several sections of experimental houses, each basically round.

"It all begins with an arch," he says. "You take an arch and repeat it linearly and it becomes a vault. Rotate it, it becomes a dome. Raise it from the ground, it becomes an apse."

Born in Tehran in 1936, Khalili studied philosophy and architecture in Iran, Turkey and the United States. By the time he was 40, he owned a successful com-

pany specializing in high-rise office design. Yet he was dissatisfied, concerned that Western building methods did not always suit the needs of his native land.

"Throughout the Middle East and the third world, they tear down what they have and rush to build with concrete blocks, because their teachers were educated in the West," he says.

In 1975 he gave up his shares in the company and headed into the California desert to search for a new way of building.

Inspired by the adobe houses of the Iranian plateau, Khalili devised a process he calls *geltaftan*, from the Persian *gel*, fire, and *taftan*, earth. Traditional adobe homes, he knew, crumble over time and can melt in a heavy rain. The *geltaftan* process actually fires an entire clay house, using an interior blaze that burns for three days and bakes the soft clay bricks into a seamless, rock-hard ceramic shell.

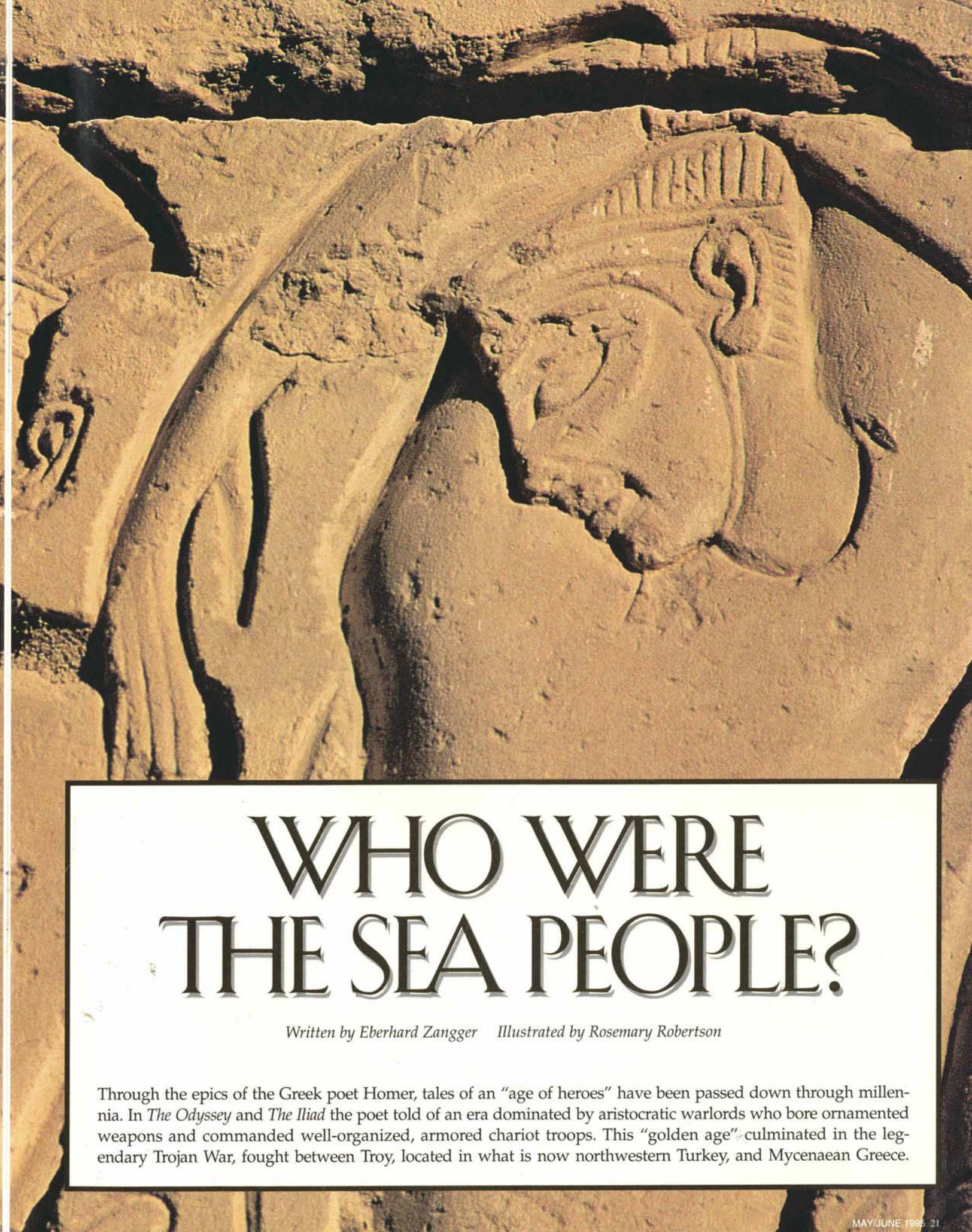
Earthquake- and flood-resistant, energy-efficient and astoundingly cheap, *geltaftan* houses are finished with an interior glaze, like a piece of pottery. The United Nations is so impressed it has named Khalili a consultant for earth architecture and ceramic housing.

Khalili has also taken Middle Eastern desert architecture into the realm of high-tech dreams, working with McDonnell Douglas and the Princeton-based Space Studies Institute on ways to use sunlight to fire lunar dust into a ceramic material that could then be used in landing pads, walkways and housing.

But low-income housing on earth remains Khalili's most meaningful mission. His latest prototype, the sandbag dome house, can be built in two weeks by two people, he says, using 1400 sandbags, two rolls of barbed wire, and earth of almost any type. The basic cost is about \$500.

"Middle Eastern architectural forms, built with the materials on the site, are still best even by the standards of today's design," he says—including energy efficiency, environmental impact and cost. "With a little adobe you can build an arch, with that arch a house, and with that house a whole town." ●

San Francisco photojournalist George Baramki Azar is a frequent contributor to Aramco World.



WHO WERE THE SEA PEOPLE?

Written by Eberhard Zangger Illustrated by Rosemary Robertson

Through the epics of the Greek poet Homer, tales of an "age of heroes" have been passed down through millennia. In *The Odyssey* and *The Iliad* the poet told of an era dominated by aristocratic warlords who bore ornamented weapons and commanded well-organized, armored chariot troops. This "golden age" culminated in the legendary Trojan War, fought between Troy, located in what is now northwestern Turkey, and Mycenaean Greece.

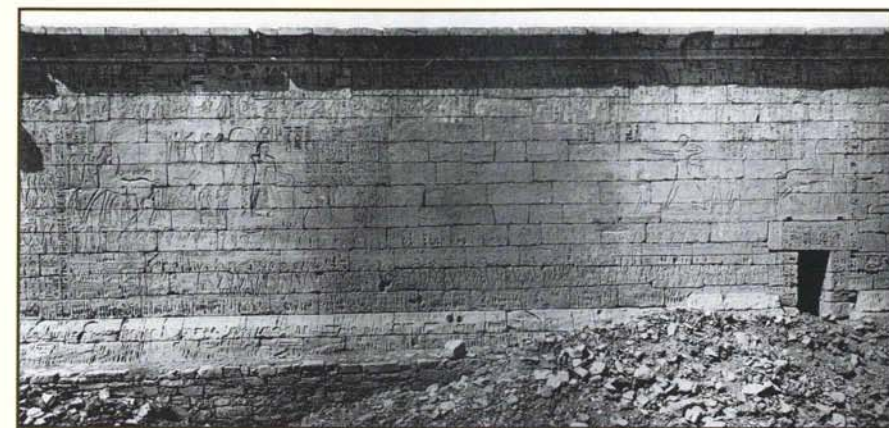
Homer himself, however, lived four centuries after the Trojan War, in a time when the communities around the Aegean were populated by little more than farmers and shepherds. The tools of the day were not finely-wrought gold nor silver nor bronze, but crudely forged of iron. Nevertheless, Greeks of Homer's time—the eighth century BC—were surrounded by powerful reminders of a more magnificent, more prosperous past. Mighty walls, some more than seven meters (22') thick, built of boulders two meters in diameter, jugged out of the soil in some places. Every now and then, a collapsed grave would reveal treasures of gold jewelry, silver vessels, beautifully painted pottery and decorated weapons.

supported by the relatively new development of writing. In nearly all, autocratic rulers oversaw professional armies and carried out the exploitation of economic opportunities at home and abroad. Most had well-developed social hierarchies in which specialized professions produced goods of extraordinary quality. This stimulated far-reaching international trade throughout the eastern Mediterranean.

Modern excavations in the eastern Mediterranean region have also provided evidence of the sudden, violent demise of these otherwise thriving civilizations of the Late Bronze Age. Within a few years—or decades, at the most—some of these nations collapsed completely, with the large and powerful Hittite state in central Anatolia disappearing most suddenly of all. From Troy in the northwest, to Ugarit on the coast of Syria, and southwest to the Nile Delta, unidentified attackers razed and burned international trade centers and port cities. After the assaults, most of the shattered cities were either abandoned or

rebuilt only on an insignificant scale. All across the eastern Mediterranean, civilizations that had been shaped by aristocrats became societies of herdsmen and shepherds. When the fighting was over, entire languages and scripts had vanished.

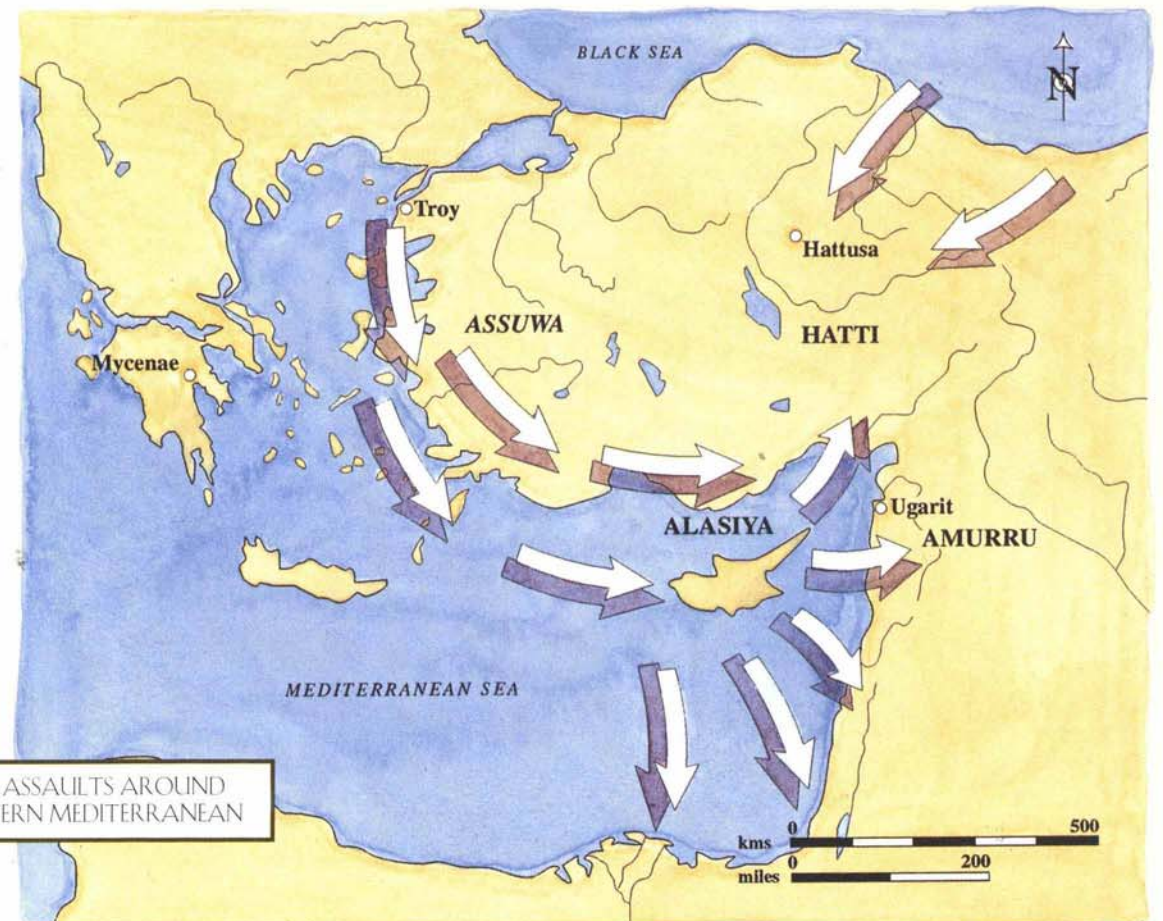
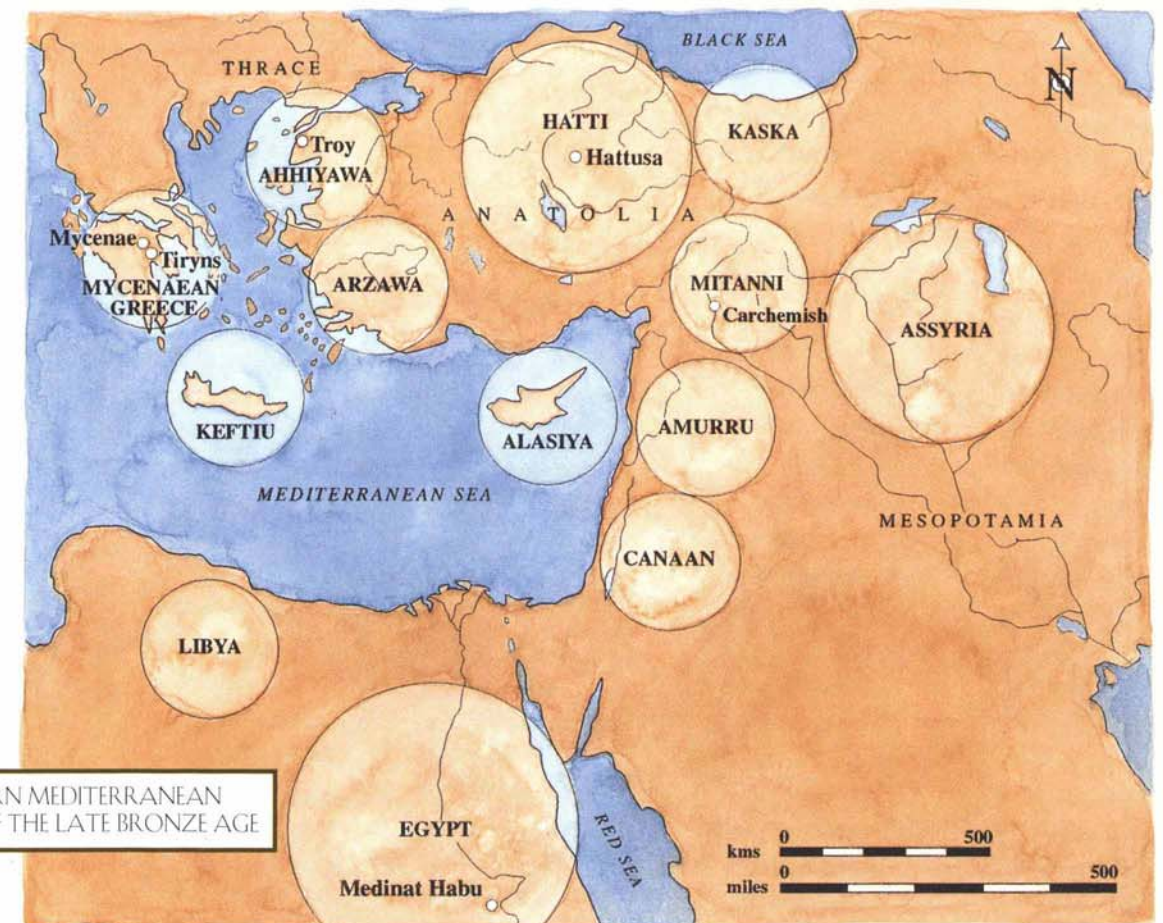
This sudden collapse is one of the most dramatic events in the early history of the Mediterranean, and many archeological mysteries surround it. First, there is the Homeric account of the Trojan War, which would have to be placed within this time of crisis if one accepts that *The Odyssey* and *The Iliad* contain at least a kernel of historic truth. The second group of events that connects logically with this historical turning point is the invasions of the so-called "Sea People." Coming, it seems, out of nowhere and lacking any obvious motive, it was these united clans that so successfully attacked throughout the region. Despite numerous scholarly attempts to identify them, we still do not know exactly who the Sea People were, where they came from, why they attacked, and, finally, where they disappeared after their raids. Scholars are even uncertain whether the Sea People's existence was a cause or an effect of the political collapses. Were the Sea People conquerors, pirates, deserters, or refugees?

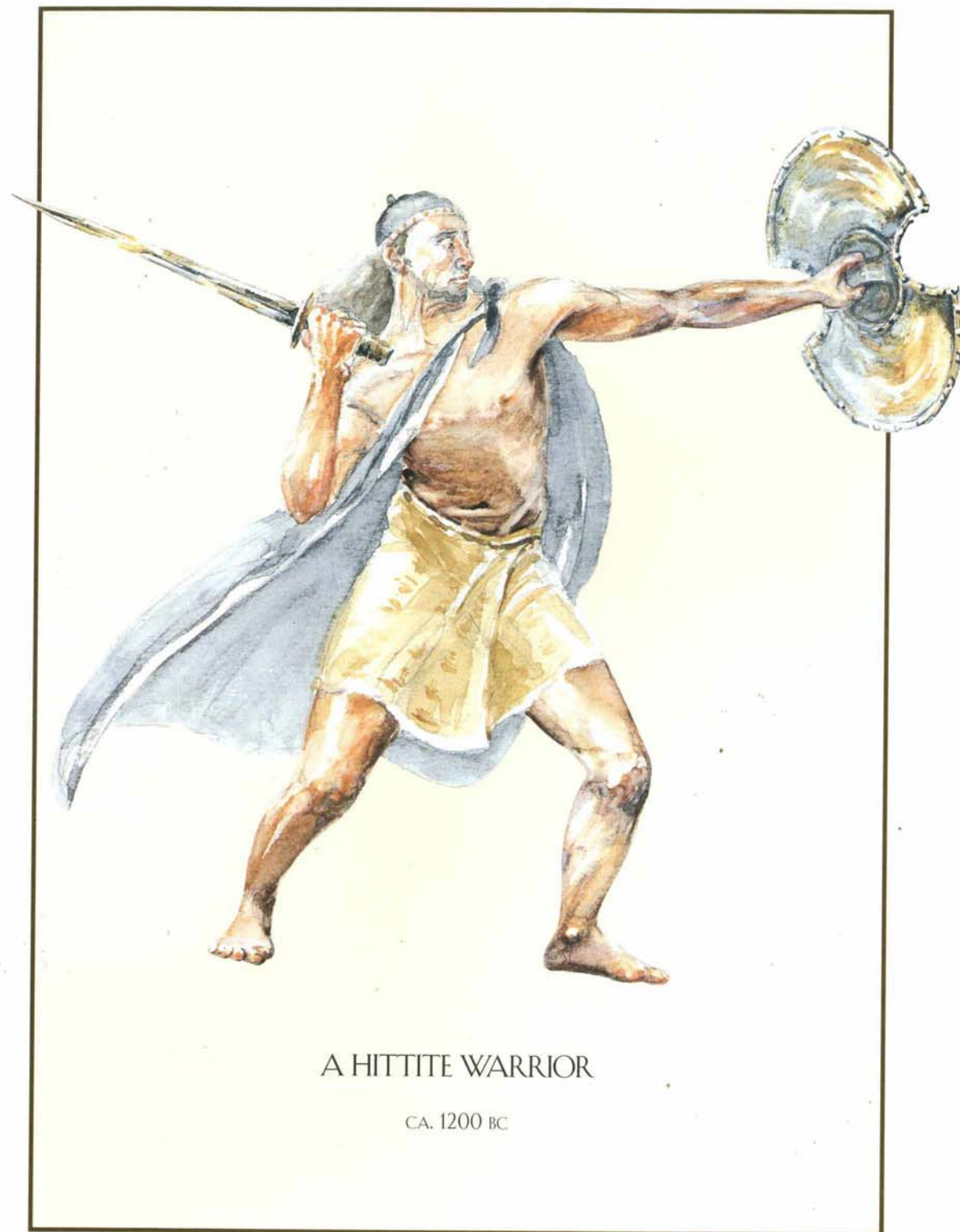


Since the Middle Ages, however, Homer's historical accuracy has been in question. It was not until late in the last century that archeological excavations around the Mediterranean began to show that Homer had indeed drawn, at least in part, on real events.

Today, we know that many sophisticated feudal societies ruled the lands around the eastern Mediterranean between 1700 and 1200 BC, the Late Bronze Age. The interior of Anatolia—now part of modern Turkey—was controlled by the centrally organized Hittite state, whose Great King resided in Hattusa near the Kızılırmak River (See *Aramco World*, September-October 1994). It was also in this era that in Egypt, the pharaohs of the New Kingdom began construction of the famous temples at Luxor, Karnak and Abu Simbel. In Greece, small yet rich and influential kingdoms made up the Mycenaean civilization, which we have named after its most famous archeological site, Mycenae. Likewise, Syria and Palestine were the home of numerous states ruled by aristocrats and lesser chieftains.

At times these states of diverse sizes and powers were allied to one another, and at other times they fought. In most, the political system was characterized by a palace administration





A HITTITE WARRIOR

CA. 1200 BC

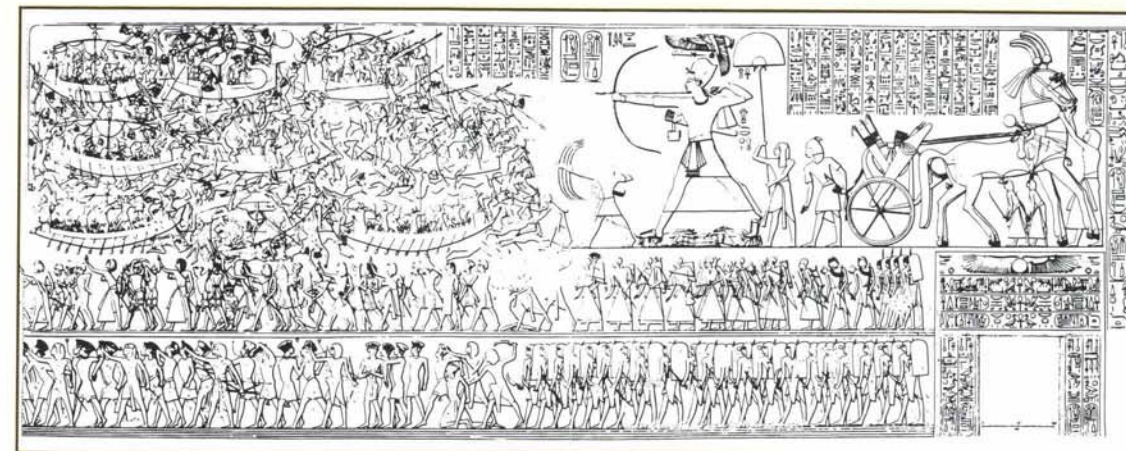
Our knowledge of the Sea People's raids rests on texts from Anatolia, Syria and Egypt. The name "Sea People" is, however, a modern expression introduced in 1881 by the French Egyptologist Gaston Maspero. The Egyptian inscriptions themselves usually refer to the names of the individual attacking tribes, who are said to have come "from the midst of the sea" or "from the islands." What we are calling "Sea People" were clearly separate states or tribes who had formed a military alliance to attack the Near East and Egypt.

The reliefs depicting the attacks of the Sea People, carved on the walls of the mortuary temple of Pharaoh Ramses III in Medinat Habu, near present-day Luxor, are also the earliest known illustrations of naval battle scenes. From these walls we know—at least approximately—what the Sea People looked like, how they dressed, what kinds of weapons they used, and what kinds of ships they sailed. We even know some of their names. But to learn anything of their motives we have to examine the historical context of their raids.

According to the inscriptions, the Sea People first appeared in about 1208 BC, the fifth year of the reign of Pharaoh Merenptah. At this time, Egypt was facing attacks by Libya, its arch-enemy to the west, which was approaching the frontier accompanied by a number of allies described as "northerners." On the famous Victory Stela, found in 1896 at the Temple of Merenptah in Thebes, Merenptah declared he had overwhelmed the enemy, and provided a list of the allies of Libya, whom we now refer to collectively as the Sea People: Shardana, Lukka, Meshwesh, Teresh, Ekwesh and Shekelesh. Most of these tribes apparently came from the Aegean, and we do not know why they fought on the side of Libya. Nor can we be sure Merenptah's claim to have overpowered them is fully justified because, after this battle, Egypt's domestic affairs gradually degenerated nearly to the point of civil war. Possibly because Egypt was so preoccupied with its internal problems that it failed to fulfill its treaty obligations to come to Hatti's aid, it managed to survive relatively unharmed the upheavals that took place shortly thereafter all around the eastern Mediterranean.

Thirty years after Merenptah's encounter with the Sea People, around 1177 BC, Pharaoh

Ramses III ordered the construction of his own mortuary temple and residence in Thebes, on whose walls architects and scribes recalled the dramatic events of the preceding decades. According to those inscriptions, the Sea People had returned, this time to attack Mediterranean shores from Anatolia, Cyprus, Syria and Palestine to Lower Egypt. The inscription reads:



As for the foreign countries, they made a conspiracy in their islands. All at once the lands were on the move, scattered in war; no country could stand before their arms. Hatti, Kizzuwatna, Carchemish, Arzawa and Alasiya were cut off. A camp was set up in one place in Amurru; they desolated its people, and its land was like that which has never come into being. They were advancing on Egypt while the flame was prepared before them. Their league was Peleset, Tjeker, Shekelesh, Denyen and Weshesh, united lands. They laid their hands upon the lands to the very circuit of the earth, their hearts confident and trusting: "Our plans will succeed!"

But Ramses and his troops defeated the invaders. When the vanquished pleaded for mercy, the pharaoh allowed them to settle on his soil:

I slew the Denyen in their isles; the Tjeker and the Peleset were made ashes. The Shardana and the Weshesh of the sea, they were made as those that exist not, taken captive at one time, brought as captives to Egypt like the sand of the shore. I settled them in strongholds bound in my name. Numerous were their classes like hundred-thousands. I taxed them all, in clothing and grain from the storehouses and granaries, each year.

Such Egyptian inscriptions, however, have to be taken with a grain of salt. Neither the scribe's intentions nor his instructions required him to

The Medinat Habu relief, shown above clarified by the "Chicago House" process, is the first Egyptian depiction of a naval battle. Sea People and their ships are at left in the upper register, Egyptians at right.



A Sea People warrior taken prisoner.

report historical truth; for him, the laws of symmetry, esthetics and religion had priority over factual accuracy. Egyptian regnal accounts often begin with the state of disarray prevailing in the country until the pharaoh whose reign is being described appears to re-establish order—that was, after all, the function of kingship. Yet, the widespread destruction all around the eastern Mediterranean, and many contemporary documents from Ugarit and Hattusa reporting similar onslaughts by mysterious attackers, confirm the gist of the Medinat Habu inscriptions.

At the time of the Sea People's second raid on Egypt, most areas mentioned in the Medinat Habu inscriptions were either occupied by or allied to the Hittite kingdom in central Anatolia. Hence, the purpose of the raids may well have been to weaken the Great King of Hatti from his periphery, by attacking his allies. From royal correspondence from Ugarit and Cyprus, it appears that the combined fleets of the Sea People massed off the southwestern tip of the Anatolian peninsula, from where they first attacked the western coast of Cyprus.

Battles directly between the Sea People and Hittite troops may also have taken place on the Anatolian mainland, however, because extant clay tablets inscribed with diplomatic notes show how the Great King of Hatti had to turn to his vassals at the port city of Ugarit, in northern Syria, to demand additional troops and food.

But by then, Ugarit itself was threatened by the Sea People. Desperately seeking support in his turn, the adolescent king of Ugarit wrote to his royal colleague on Cyprus:

The enemy ships are already here. They have set fire to my towns and have done very great damage in the country.... Did you not know that all my troops were stationed in the Hittite country, and that all my ships are still stationed in Lycia and have not yet returned? The country is thus abandoned to itself.... Consider this, my father, there are seven enemy ships that have come and done very great damage. Now, if there are more enemy ships, let me know about them so that I can decide what to do.

This letter never left Ugarit. Archeologists found it there in a kiln, where it was supposed to be fired before the courier departed with it. At the peak of its economic and cultural success, and showing no signs of decay, Ugarit was wiped out and was never resettled again.

The pressure on the Great King of Hatti increased further. His scribes wrote one more text illustrating the Sea People's assaults and what turned out to be a successful Hittite counterattack:

I called up arms and soon reached the sea—I, Suppiluliuma, the Great King—and with

me ships of Alasiya joined battle in the midst of the sea. I destroyed them, catching them and burning them down at sea.

Soon thereafter, however, enemy forces indeed reached the Hittite capital of Hattusa. It is doubtful that they were Sea People forces; and in fact their identity is still uncertain. There may have been internal strife in Hatti, for an inscribed bronze plate found in 1986 indicates that two members of the royal family had competed for the throne. Most scholars, however, accept that a path of destruction leads out of the northeast into Hattusa, meaning that the city was most likely destroyed by the Kashka, its neighbor and bitter enemy of several centuries' standing. The Kashka had already destroyed the Hittite capital on one occasion and forced the king to move temporarily; this time, they annihilated the 600-year-old civilization.

A similar pattern of destruction appears in most of the cities attacked by the Sea People. By targeting government buildings, palaces and temples while leaving the residential areas and countryside mostly unharmed, the attackers aimed at the control centers of the aristocratic rulership. This tactic foreshadows the strategy of today's warfare, and is one of the earliest known examples of it. Concentrating attacks on such centers, the Sea People must have realized, preserves strength and shortens the war.

After Hattusa and Ugarit, many other cities in Anatolia, Syria and Palestine fell to the invaders. The Sea People continued their sweep to the south until they met the Egyptian army.

This generally accepted outline of the Sea People's incursions leaves many of its most significant questions unanswered. We still do not know either the origins or the motives of the Sea People. It is also hard to understand why they did not attempt to permanently subdue the countries they overwhelmed. Finally, virtually nothing is known about the fate of the Sea People themselves following these crisis years.

Now that there is a wealth of highly specific information in hand from numerous excavations and text sources relevant to those years, scholars have become more and more inclined to think that the time has come to begin solving some of these riddles. Although a search for a unifying explanation began some time ago, and academic conferences abound on the crisis years, the Sea People, and the Trojan War, there has still been little progress toward a plausible explanation for this watershed in history. Some archeologists suggested that the Sea People may have been invaders from central Europe. Others saw them as scattered soldiers who turned to piracy, or who had become refugees. For a long

time, researchers sought to explain the transformations around 1200 BC by invoking natural disasters such as earthquakes or climatic shifts, but earthquakes on such a broad geographic scale are unheard of, and no field evidence has indicated significant climatic change. Currently, very few—if any—archeologists would consider the Sea People to have been identified.

I stumbled on these problems, mostly by accident, in an unlikely place. In the spring of 1990, I was writing up the conclusions of my dissertation research, which had involved several years of investigation in the Mycenaean heartland, searching out clues to determine what the landscape of the Bronze Age had been. The work had little to do with the Sea People.

Studying numerous earth cores taken by hand augers and power drills, I had discovered that parts of the lower town of Tiryns, one of the Greek citadels from the era of the Trojan War, had been buried under several meters of mud deposited by a flash flood that had occurred around 1200 BC. This catastrophe coincided with an earthquake, for which evidence was found in the archeological record of the Tiryns citadel. Both of these events occurred shortly after 1200 BC, precisely at the time when the Mycenaean civilization suddenly collapsed.

When summarizing these conclusions, I remembered that earthquakes, floods, and the demise of a brilliant culture are also mentioned in Plato's dialogues *Timaeus* and *Critias*. When I turned to reread these, I noticed that the philosopher's story may well represent yet another account—thus far unrecognized—of the events of the crisis years. Plato describes two prehistoric civilizations that possessed bronze weapons, chariots and writing, and he describes how a devastating war broke out between them. Those facts, and numerous additional elements of the account, have much in common with the Trojan War: Plato mentions a navy of 1200 ships; Homer, adding up the vessels of the united Greek army, reached a total of 1186 ships. Both Plato and Homer described the opposing armies as consisting of many allies. Both also allude to severe internal problems in the Greek camp, and both relate how the attacking Greek contingents, in the end, overwhelmed the defenders.

If applied to the Trojan War, however, Plato's account would attribute far more political, economic and military power to Troy and its allies in western Anatolia than anyone has yet credited them with. Yet, if Troy is understood to be an equal opponent of the united Greek army, then the traditional, Homeric account of the Trojan War becomes far more plausible. According to Homer, it took 100,000 Mycenaean soldiers a decade of siege to subdue Troy, a city that has thus far been believed to

have been the size of a modern athletic field.

An even more novel idea that emerged from this reading of Plato's account, however, was that it may have been Troy and its allies that in fact triggered the conflicts at the end of the Bronze Age. Plato's source, an Egyptian priest, says:

So this host, being all gathered together, once made an attempt to enslave by one single onslaught both your country [Greece] and ours [Egypt], and the whole of the territory within the Straits.

This passage would argue that Troy and its allies were in fact the aggressors who brought on the crisis. At the same time, the passage is reminiscent of the Sea People accounts at Medinat Habu. Thus I considered a hypothesis based on simple equivalence: *The Sea People may well have been Troy and its confederated allies, and the literary tradition of the Trojan War may well reflect the Greek effort to counter those raids.*

From this new perspective, I realized that archeology possesses several texts that indeed describe a coalition of Late Bronze Age states in western Anatolia that appears to have played a decisive role during the transformations around 1200 BC. Homer, for instance, lists contingents on the Trojan side in *The Iliad*, saying that Troy's allies came from all along the Aegean east coast between Thrace in the north and Lycia in the south. This coastal strip, including its offshore islands, coincides with the geography of what many scholars think may represent the homeland of the Sea People.

The same kind of alliance is also mentioned in several unambiguous cuneiform tablets from Hattusa. According to these documents, 22 states in western Anatolia formed a coalition against the Hittites as early as the 15th century BC. Other documents provide evidence that such a coalition was forming for a second time a few years before the Hittite state vanished. In a letter to his wife, the Great King of Hatti describes how states to the west were rallying against him, and says that it would be difficult to keep the situation under control if they succeeded. Some texts from Hattusa also show that Hatti felt increasingly threatened by one particular neighbor in the west

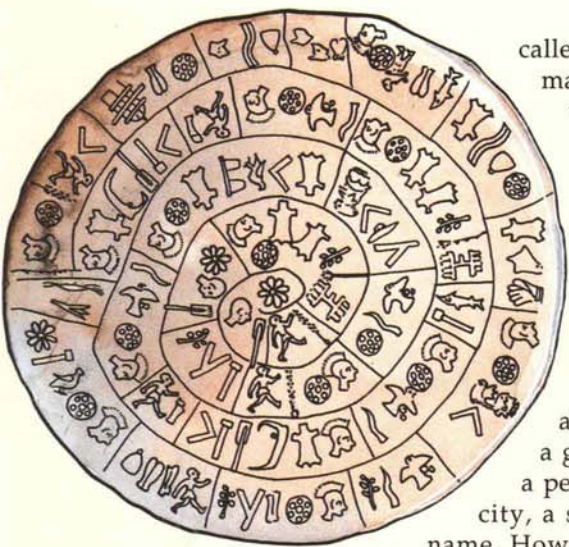
The chaos of what appears to be an unsuccessful amphibious assault by the Sea People, as depicted by the Egyptians.



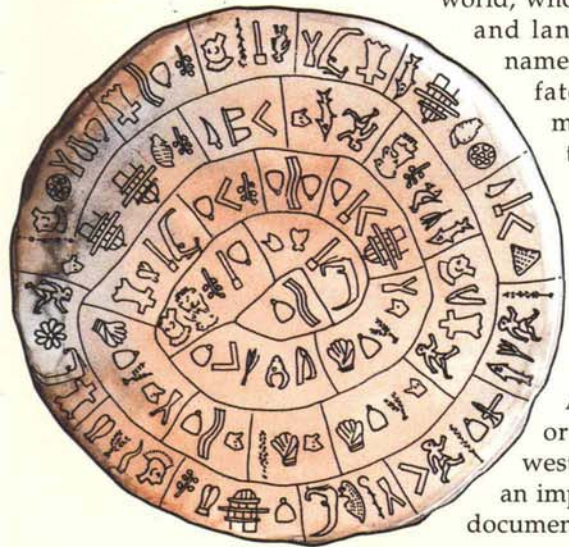
ANDREAS WOLFENBERGER
ORIENTAL INSTITUTE

SOME STATES OF THE LATE BRONZE AGE AND THEIR ATTRIBUTES

REGION	PEOPLE	CITY	SCRIPT	NAME
Egypt	Egyptian	Thebes	hieroglyphic	Hekuptah
Upper Tigris	Assyria	Assur	cuneiform	Ratenu
Central Anatolia	Hittite	Hattusa	cuneiform	Hatti
Syria/Palestine	Canaanite	Kadesh	cuneiform	Amurru
Greece	Achaean	Mycenae	Linear B	Tanaja
Crete	Minoan	Knossos	Linear A	Keftiu
Cyprus	Cypriot	Enkomi	Cypro-Minoan	Alasiya
Western Anatolia	Sea People	Troy	Discos of Phaistos (?)	Assuwa



One of the signs on the baffling Discos of Phaistos (at nine-o'clock position above) is a man's head with what could be either a feather crown or a "mohawk" hairstyle.



called Ahhiyawa, a country that many scholars locate in north-western Turkey and which thus may be Troy itself.

To take stock of the mysteries surrounding western Anatolian states at the end of the Bronze Age, we can outline today's knowledge in the table above.

Seven of the known Late Bronze Age civilizations had all of the following attributes: a geographical region or realm, a people, at least one substantial city, a script and a contemporary name. However, in each of these categories we find one isolated entry that is somehow related to western Anatolia, but is considered mysterious or inexplicable within the parameters of traditional scholarship.

There is, first of all, the problem of Troy, one of the most formidable archeological sites in the world, whose inhabitants, realm, script and language, and contemporary name—as well as its history and fate—remain obscure despite more than 120 years of excavation and research. There are also the Sea People, whose city, realm, script and language and name are unknown: They came from nowhere and then vanished. There are the many references to Assuwa, Asiya, Ahiya and Ahhiyawa, states or confederations of states in western Anatolia, which played an important role in contemporary documents from Egypt and Hattusa,

but whose city or cities, people, language and script are unknown. And finally there is the Discos of Phaistos, a unique—some would also say notorious—document, discovered on Crete in 1908, whose spiral inscription, using 45 different symbols, is inscribed on a clay disc 16 centimeters (6¼") across. Although the origin and importance of this artifact are fiercely disputed, its discoverer, Italian archeologist Luigi Pernier, claimed parallels between the characters used in the Discos script and images of the Sea People from the Medinat Habu inscriptions. Indeed, the latest attempt by scholars to decipher the Discos even bears the title "The Language of the Sea People," but the city, people, realm, language and name to be associated with the Discos are all unknown.

Combining all these incomplete entries into one row in our table would produce all the attributes of a complete civilization in western Anatolia. We even possess a contemporary name for such a civilization, as "Assuwa" was the term used to describe the confederated states, of which Ahhiyawa seems to have been the most important constituent. If these deductions prove correct, archeological scholarship has overlooked an entire, and important, Bronze Age civilization.

In a practical sense, the possibility that western Anatolia hosted a civilization equal—or in some respects even superior—to those of Mycenaean Greece and Minoan Crete is quite plausible. The Aegean shore of Anatolia contains countless natural harbors and advantageous places for settlement. The interior offers an abundance of natural resources including ores, timber and water, while the coastal maritime route has been of strategic and economic importance for millennia. Despite ample evidence that it was well-inhabited during the Late Bronze Age, and despite archeological evidence from Troy and Beycesultan that indicates these

Anatolian societies may well have been sophisticated enough for them to rank with Greece and Crete, the thought has simply never been entertained in archeological circles. Why not?

Two characteristics of Old World archeological research methods illuminate how this may have occurred. Building on foundations in art history and philology, today's archeology tends to concentrate on the study of architectural monuments, artifacts and documents. This tendency rests on the implicit assumption that most of the relevant aspects of any ancient culture will indeed be recorded in these remains. But the approach puts any civilization whose people built with perishable mud-brick and wood, instead of with stone, at a serious disadvantage, for the remains of their structures will not survive. Similarly, when a civilization has traded in metal, cloth, timber, grain, leather, cattle or horses, slaves and other perishable goods rather than in pottery, the evidence of that activity will not survive the centuries. And if this civilization, in addition, used papyrus, wax or leather, rather than stone or clay, to write on, then its people may become almost invisible to archeological research.

Furthermore, the art-historical emphasis in archeology tends to highlight research that deals with concrete artifacts rather than the reconstruction of past political, economic and military relations—precisely the matters in which the Late Bronze Age Anatolian states seem to have excelled. Hence, by excavating standing monuments and artifact-rich sites, European archeology itself may have contributed to a slanted picture of antiquity.

The second characteristic goes back to the birth of scientific archeology in 19th-century Europe. The founders of the discipline had absorbed the Enlightenment belief that classical Greece and Rome were superior to the cultures of modern times. Also, both 19th-century Europe and Greece of the fourth century BC were engaged in conflicts with Anatolian powers: The Ottoman Empire's interests conflicted with those of European powers in much the same way that Troy's conflicted with Mycenae and, later, Persia's with classical Greece. As the culture of antiquity was presented as the model for modern culture in Europe, the antipathies born in Greece of the fourth century BC were also readopted and reinforced. All these conflicts—contemporary and historical—caused considerable anti-Anatolian sentiment.

Early archeology, as a strictly European discipline, unavoidably took up these attitudes. Johann Winckelmann, widely considered the founder of art history, regarded the ancient Greeks as "equal to the gods," while their contemporaries abroad were "barbarians." Later, the European university system institutional-

ized such attitudes through the omnipresence of ancient Greek sculpture and architecture in European institutions of higher learning.

As a result, ancient Greece was, and to a considerable extent still is, considered the cradle of Western culture, despite clear indications that several of its achievements—agriculture, metallurgy and elements of sophisticated architecture—actually came to Greece from Anatolia.

If we can clear our minds of these inherited assumptions, we find that the fall of the Late Bronze Age civilizations can indeed be plausibly reconstructed.

Early in the 14th century BC, as the power of the Minoan civilization on Crete dwindled, the many small kingdoms on the Greek and Anatolian sides of the Aegean took advantage of the vacuum. The Greek Mycenaean kings adopted the system of a palace-administered society from the Minoans, and gradually took over Cretan trade routes. Troy achieved sole control of some islands in the eastern Aegean and of the important maritime trade route through the Dardanelles to the Black Sea. It also assumed many of Crete's functions in the metals trade. Thus both the Mycenaean and the Trojan civilizations reached the peak of their political and economic power between 1375 and 1250 BC.

Eventually, the equilibrium must have shifted. Perhaps because Greek vessels attempted to use the straits to the Black Sea for their own trade activities, a serious conflict arose between the two sides of the Aegean. Traditional accounts recall how a small Greek contingent was sent to punish Troy in about 1250 BC. In a surprise attack, Greek units succeeded in destroying the city at its absolute cultural peak.

This first Greek assault was not the legendary Trojan War. It did, however, mark the beginning of the decline of the Late Bronze Age cultures. The Trojans rebuilt their city, but this time, the archeological evidence makes clear, they built not with status in mind, but defense. Soon after the citadel of Troy was finished, both the Mycenaean kings in Greece and the Great King of Hatti reinforced their own citadels in similar fashion. The new fortresses followed a common plan: The protected area was expanded to provide shelter not only for the upper classes but also for members of the lower echelons of society; the walls were reinforced to withstand massive onslaughts; access to freshwater springs was included in the protected areas to assure water supply under conditions of siege; and finally, defense galleries and secret escape routes were incorporated into the structures. The similarities between the citadels at Hattusa and Mycenae are so striking that one might almost infer they had been jointly designed.



A WARRIOR OF THE SEA PEOPLE

CA. 1200 BC

Hatti's biggest concern, however, lay to the east, at the other end of Anatolia. From its heartland in upper Mesopotamia, Assyria launched a successful attack around 1236 BC, which captured copper mines on the eastern border of Hatti. Rather than confront the militarily superior Assyrian state, Hatti determined to acquire a new source of vital copper from an easier target. The Great King managed to conquer Cyprus, one of the richest mining districts in the eastern Mediterranean. At the same time, he barred ships from western Anatolia from entering the ports of his vassals in Syria, thus interrupting trade between his rivals. This blockade was just as much an act of aggression in the 13th century BC as it would be today; war became inevitable.

The first encounters between forces from western Anatolia and those of Hatti probably took place on the mainland, but eventually western Anatolian strategists developed a plan to circumvent the stronger state by sea and attack Cyprus and Syria instead. This naval assault probably occurred around 1195 BC, and it is this that became known as the Sea People invasions.

We may never find out whether the western Anatolian Sea People actually aimed to end Hatti's hegemony over central Anatolia once and for all, or whether they were simply retaliating against Hatti's aggressions in hope of regaining their lost trade routes. In either case, though the first battles may have been indecisive, western Anatolia soon received support from Kashka, which used Hatti's preoccupation with the Sea People to march again toward the Hittite capital. They left it in ashes in about 1190 BC.

With Hatti destroyed, the western Anatolian states—the Sea People—suddenly found themselves commanding an area stretching from the Aegean to Palestine. Pushing farther into the Levant, they became involved in the kind of battles that are depicted on the walls of Medinat Habu. Egypt, weakened by its internal strife, was unable to overwhelm the enemy. Only one state remained powerful enough to fight the western Anatolian allies, which were led by Troy: Mycenaean Greece.

Although Greece itself may not have been attacked, it was clearly facing a difficult future with a neighbor as powerful as western Anatolia, and a neighbor, to boot, whom Greece had already offended sufficiently to earn unwavering enmity. After much preparation, a Greek army entered the battlefield, planning attacks on the centers of cities—the same strategy used by the

western Anatolian states. With the Anatolians busy in the Levant and Egypt, Greek soldiers ravaged the western Anatolian heartland, forcing the Anatolians to pull back to defend their homes. Finally, the opposing armies gathered at the city whose fate would decide the outcome of this unprecedented war. The battles at Troy probably took place around 1186 BC, and they likely lasted a few months before the Greek attackers succeeded—again—in conquering the doomed city.

In an apocalyptic war, there are no winners. Many famous Greek aristocrats lost their lives in the fighting. Those who survived had a hard time reassuming leadership upon their return, because provincial deputies had assumed their thrones and the returning warriors were too weakened and impoverished to regain their titles. Greece and Anatolia entered an era of anarchy. With the disappearance of the palaces and the aristocracy, the fine craftsmanship, the

artistry, and the knowledge of writing disappeared as well. *The Odyssey*, numerous legends, and even the Greek historian Thucydides all recount how the survivors of the Trojan War spread all around the central and eastern Mediterranean. The archaeological evidence confirms the migrations, and names still found today—Sicilian, Sardinian, Etruscan, Philistine and Thracian—are first documented after the end of the crisis years.

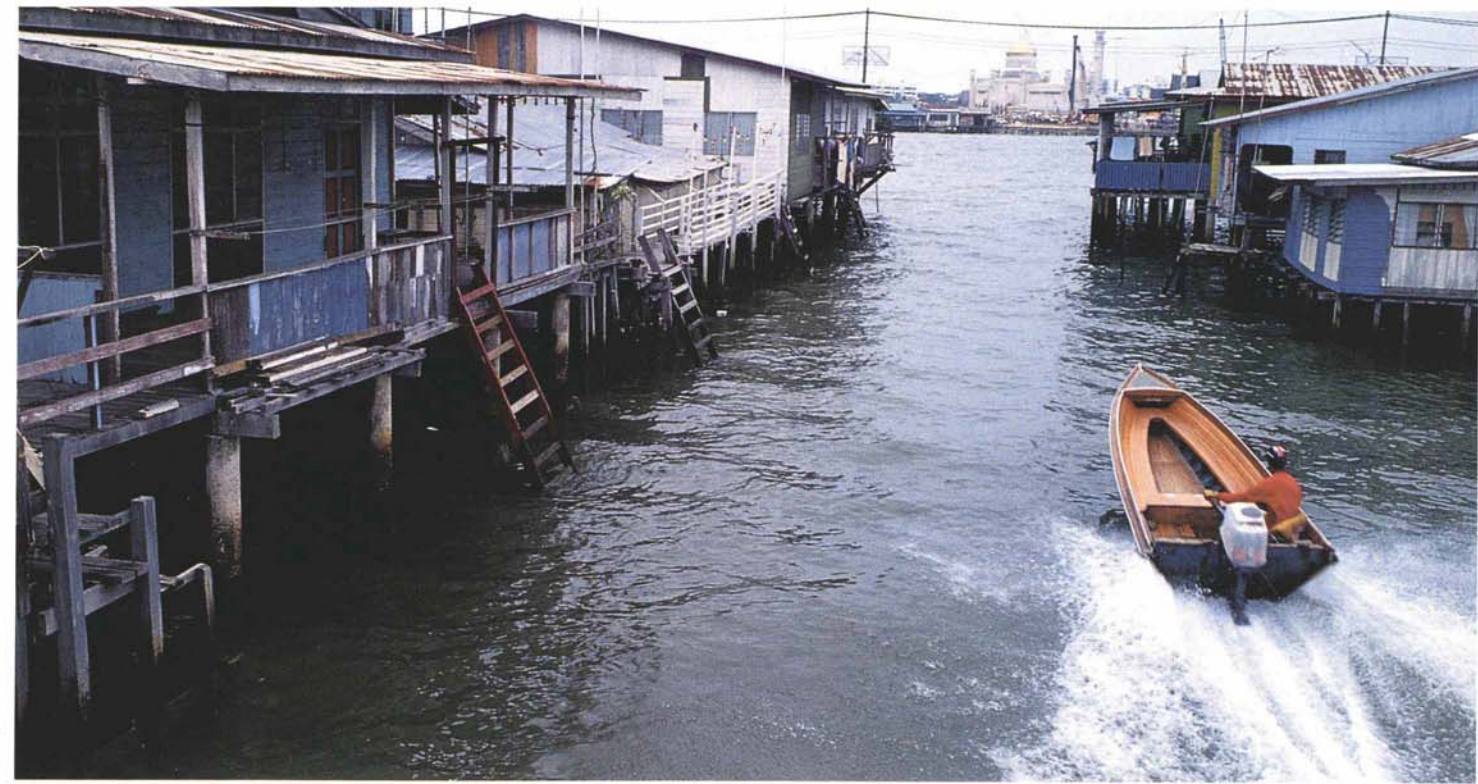
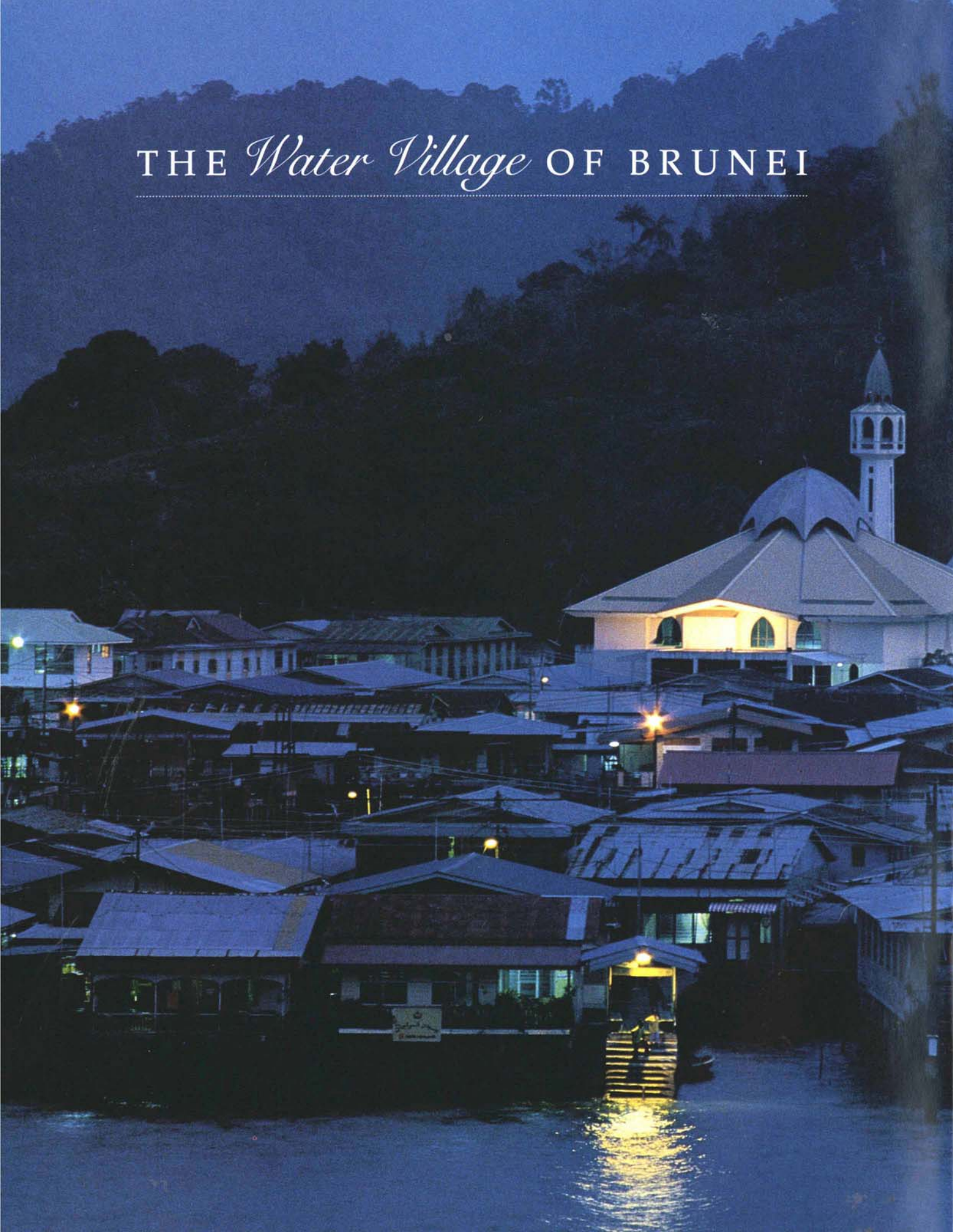
Although the Sea People vanished from the political records, they left a legacy second to none in world history. In Palestine, where many clans from both Greece and western Anatolia sought refuge, the Philistine and Phoenician civilizations arose, reviving and spreading much of the inventiveness in metallurgy, seafaring, warfare and trade that had characterized fallen Troy and its allies. The civilization of Rome claimed to have originated with Aeneas of Troy. And the memory of Troy and the Trojan War stood firmly at the center of interest for Western scholars up through the Middle Ages. Today it still remains one of the central legends of the West, related by one of the most eloquent poets the world has ever known. ●

Geoarcheologist Eberhard Zangger holds a German master's degree and a Stanford University doctorate in geology. He works as a senior physical scientist on many archeological projects around the eastern Mediterranean and lives in Zurich. His theory on the identity of the Sea People is detailed in his recent book *Ein neuer Kampf um Troia*, published in Germany by Droemer Knauer.



Ramses III's scribes used the name "Tekker" for one of the allied groups that comprised the Sea People. In Greece after 1200 BC, the common term for the Trojan population was "Teuker." It is not known whether this similarity has any significance.

THE *Water Village* OF BRUNEI



WRITTEN AND PHOTOGRAPHED BY ERIC HANSEN

Facing the South China Sea along the northern coast of the island of Borneo, the diminutive nation of Negara Brunei Darussalam is wedged between the Malaysian states of Sarawak and Sabah. As a monarchy ruled by Sultan Hajji Hassanal Bolkiah Mu'izzadin Waddaulah, Brunei was founded on the principles of Islam, and it prospers today thanks to a generous natural endowment of oil reserves.

THE PREDAWN SKY LIGHTENED AND revealed a village standing in midstream.

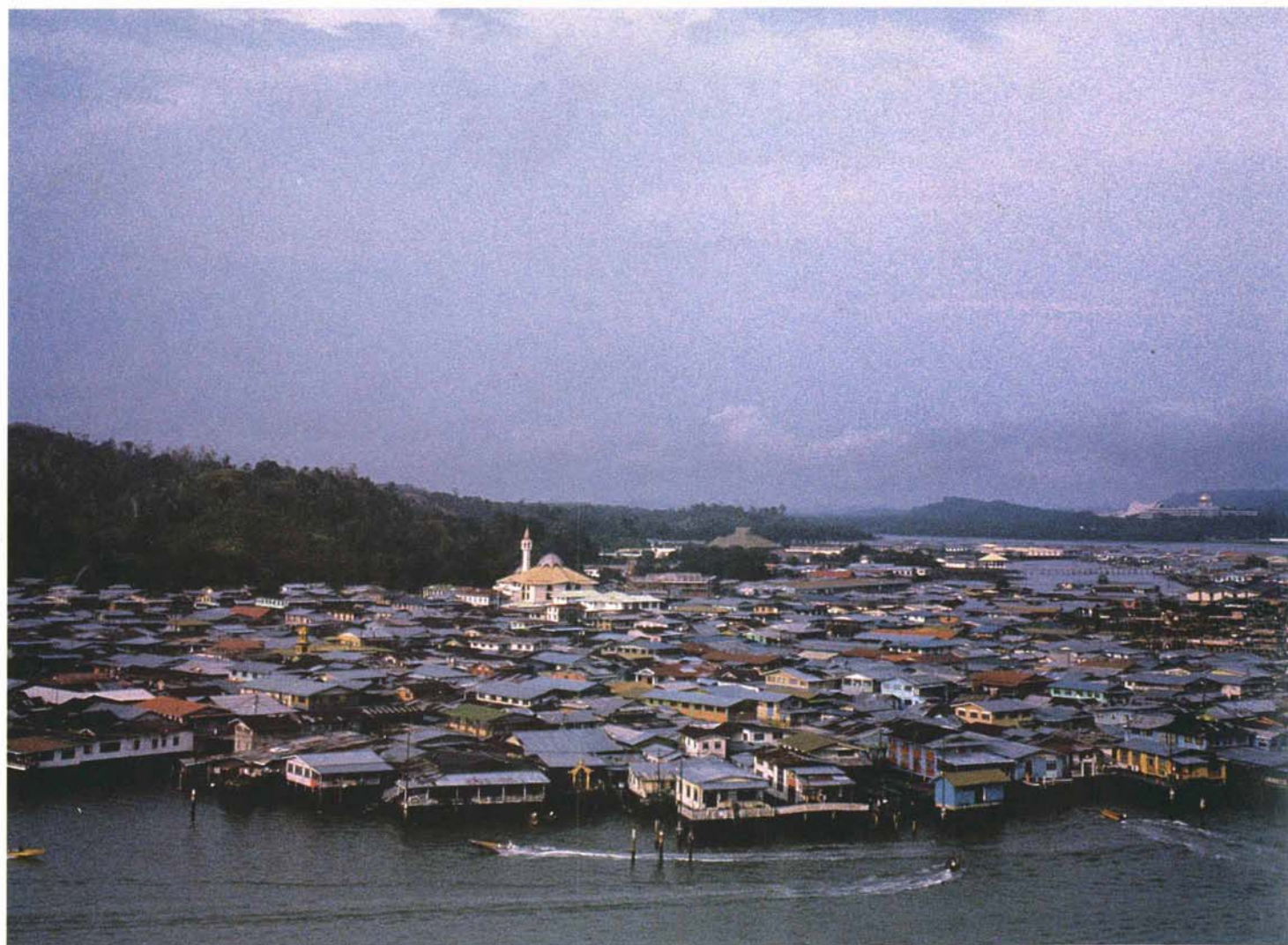
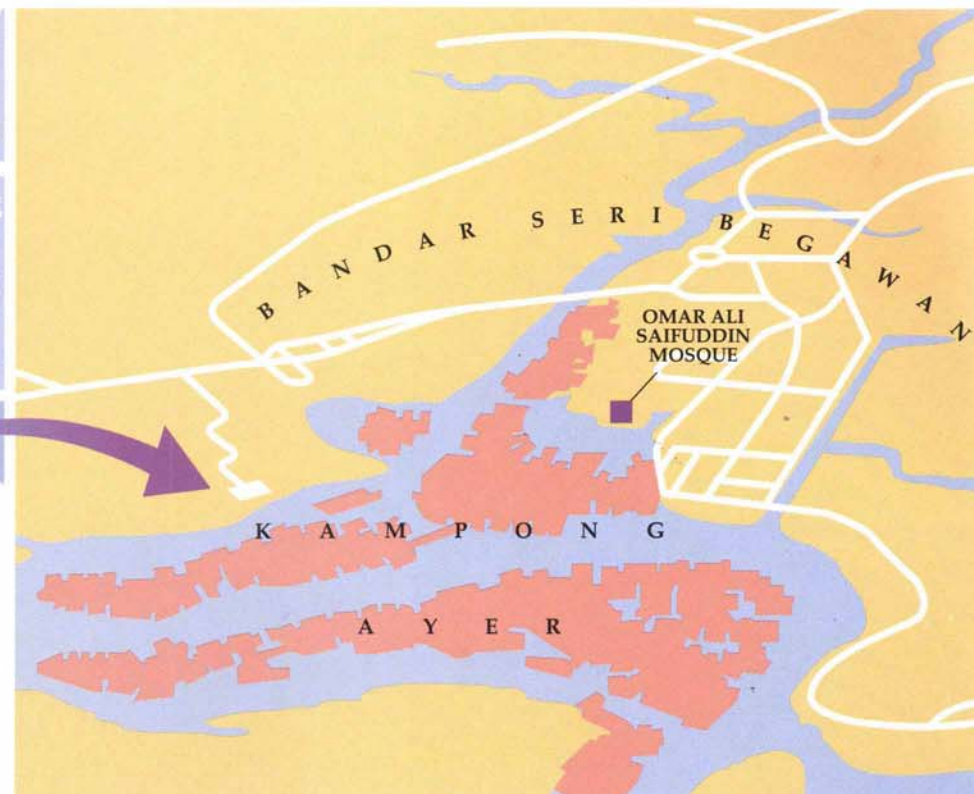
As I drew closer, television aerials became visible, and I could hear the crowing of roosters. Street lights flicked off one by one and the morning call to prayer floated over Kampong Ayer, the water village of Brunei.

In the gathering purple-blue light, this village of about 30,000 people appeared as several enormous clusters of houses on stilts, all moored in tight formation in the

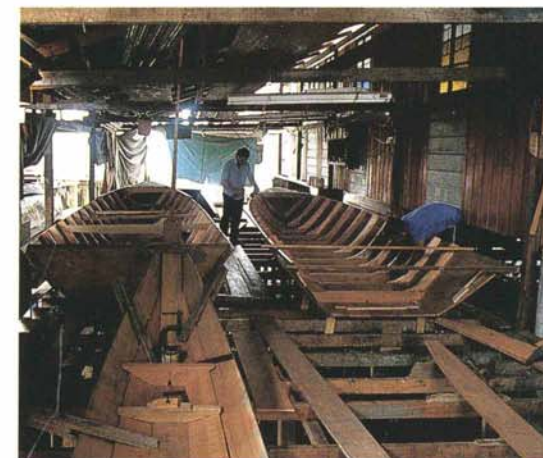
middle of a bend in the Brunei River. As the village slowly awakened, the clattering footsteps of children and commuters along Kampong Ayer's rickety wooden walkways, known as *jembatan*, were joined by the growing bass rumble of motorized *tambang*s, or water taxis, as they ferried people to the nearby shore. There, buses and cars waited to take them to work throughout Bandar Seri Begawan, the capital city of Brunei that today virtually surrounds Kampong Ayer.

Opposite: Dawn comes to Kampong Ayer, where, for more than 500 years, people have found relief from an equatorial climate by building their community on stilts over the natural breeze-way of the Brunei River.

Above: Modern commuters, students and shoppers depend on the inexpensive tambang, or water taxi, for transportation throughout Kampong Ayer and Bandar Seri Begawan, the surrounding capital of Brunei.



SOON AFTER THE morning commute subsided, women began to drape the wooden balconies of the village with lines of freshly washed batik sarongs and children's clothes. Bedding was aired, and, as the sun reached the household balconies, woven mats were set out and spread with prawns, small fish and *krupuk*, the distinctive dried-prawn crackers of Southeast Asian cuisine. Every additional bit of balcony space seemed to overflow with cascades of orchids and bougainvillea. Beneath the houses, open boats bobbed in the river. Little boys lowered crab pots from bedroom windows. Telephones rang, cats and lizards took up sunny positions on the wooden walkways, and the sounds of hammers, saws, and boiling teakettles indicated that another day was in full swing in Kampong Ayer.



Boatbuilder Hajji Razali, a fourth generation craftsman, was one of the first people I met in the village. He lived in a typical single-story, wood-framed family house built on stilts. Standing barefoot on the hardwood planks of his open-air workshop, he said he specialized in the construction of river taxis. Each month, Razali and his assistant Abdul Ali produced four new boats built from planks of *meranti merah*, a local hardwood. They used power tools from Japan, as well as traditional spokeshaves and handsaws



Opposite: Kampong Ayer occupies much of the river's breadth with homes, schools, mosques, shops and even fire and police stations, and more two- and three-story buildings appear every year. Left: At one of the dozens of floating markets that cluster near the water-taxi jetties, a woman buys locally-produced fruits, vegetables and eggs.

and a brace and bit that appeared to date from the late 19th century. The sweet, pungent scent of hardwood sawdust permeated the warm air as we sipped hot, milky tea and talked. When I asked why he lived in a house built on stilts and not on dry land, he laughed before replying, "It is our custom. We have always lived here."

Listening to his description of everyday life, I realized that the residents of Kampong Ayer, like all citizens of Brunei, enjoyed a level of social services most people can only dream of. The government of Brunei collects no taxes, but provides health care, old-age pensions, education, and, for those without the means, assistance in making the Hajj, the pilgrimage to Makkah. A code of social behavior prevails that makes random violence and robbery non-existent in the village. "It is not our way," Razali explained with a shrug of his shoulders.

CONTINUING MY MORNING stroll along the wooden walkways, I thought back to the earliest known mention of Kampong Ayer by a European, the Italian historian Antonio Pigafetta, chronicler of Magellan's fleet. When Pigafetta visited the Sultanate of Brunei in 1521, he described a prosperous city of considerable size built on stilts in the river. Although the fortunes of Brunei have fluctuated since Pigafetta's visit—the nation



Above: Fish are butterflied and dried in the sun to preserve them until they can be grilled and served with rice. Left: Boatbuilder Hajji Razali builds and sells four water-taxis each month.

was a protectorate of the British crown for nearly a century before gaining independence in 1984—his account of a wealthy Islamic monarchy, famed for hospitality and splendid palaces, still describes Bandar Seri Begawan passably well. The palaces have moved to dry land and become still more magnificent but, 16 kilometers (10 miles) upstream from the mouth of the Brunei River, Kampong Ayer functions just where Pigafetta saw it more than 500 years ago.

In modern Kampong Ayer, not only homes but medical clinics, mosques, fire and police stations, shops, schools and markets line the suspended maze of stilt-

from the repair of walkways to the settlement of disputes and the organization of firefighting crews.

First-time western visitors, however, frequently mistake Kampong Ayer for a ramshackle slum. In the mid-1800's Sir James Brooke, the first British rajah of neighboring Sarawak, described Kampong Ayer as "a very Venice of hovels, fit only for frogs." Brooke did not see that Kampong Ayer's vernacular architecture is supremely adapted to the tropical environment of Brunei, nor understand how this architecture has helped form the social dynamics of a town which people live in by both tradition and choice.

The most obvious benefits of living in stilt-supported buildings over the river have to do with cooling winds, defense, ease of construction and sanitation as well as access to water, fishing grounds and riverside building materials, such as nipa palm (*Nypa fruticans*) and mangrove poles. Building materials have changed greatly over the years, but the visual appeal of an entire village on stilts remains undiminished.

The houses were originally built on mangrove poles or ironwood posts set into the river mud. Like most traditional building materials in Southeast Asia, *kayu bakau* (*Rhizophora mucronata*), the most common mangrove tree in Brunei, has numerous uses. A boiled extract of the bark, known as *cutch* or *gambier*, yields a valuable dye used in the tanning of leather, but *bakau* is now used primarily as support posts for reinforced-concrete formwork. *Daun apung*, the frond of the nipa palm, was the other standard building material. The fronds provided covering for roofs and walls, and the palm tree itself was a valuable source of *gula anau*, a deliciously heady

brown sugar that is still available in the street and floating markets.

Rumah belah bubung, as the old style of house for commoners is called, consisted of three rooms: the *pentaran*, or front room, the *ruang tamu*, or living room, and one bedroom. The single-ridge roof was covered with *atap daun apung*, an overlapping leafy shingle folded and stitched from nipa-palm fronds. The walls were constructed of the same material, and windows were hinged at the top and could be propped open with a short stick to provide cross-ventilation. Air was free to circulate through the entire structure, and the gaps in the split-bamboo flooring, which was covered with rattan mats, further facilitated the passage of cooling breezes. Fabric was hung from the ceilings for cleanliness. Wide steps leading down into the water gave access to boats.

A more elaborate style of traditional house, favored by Malay nobles and the merchant class, was known as *rumah tungkup*. It consisted of a hip roof and walls covered with *atap*, two bedrooms, a front room, a living room, a kitchen and a covered veranda known as *tangga pemandian*, which was reserved for women's bathing and the washing of clothes.

These early styles utilized an intricate system of interlocking joinery with the occasional use of mortise-and-tenon joints or wooden dowels, known as *car-but*, to tie the main structure together. Neither nails nor milled lumber were used. The *atap* roof and walls were fastened to the frame with strips of rattan—but nothing was fastened rigidly. Every part of the construction could shift and flex, an ability that is essential for a village built in the middle of a river. Waves could sway a structure without weakening it, and roof panels lifted, allowing wind to pass through the building rather than blow it away. A violent storm during the monsoon season might rip walls and roof to pieces, but often the frame and floor would remain standing, simplifying rebuilding.

Likewise, fire might quickly consume the dry frond roof and walls, but the framework of the house would often sur-



One of few remaining mosques in Kampong Ayer's traditional, all-wooden style shows a prayer hall lined with louvered windows, an open veranda and a water-taxi landing.

vive intact. By official estimates, it takes just seven minutes for an average Kampong Ayer house to become engulfed in flames. Indeed, every few years a section of Kampong Ayer is destroyed by fire, and this has provided the village with its most common reason to rebuild, leading to perpetual growth and change.

This old style of construction, utilizing local building materials, was in common use until the 1940's. Then milled timber and corrugated-metal roofing became widely available and affordable. By the 1950's, westernized designs had come into vogue. One was known as *rumah belanggar*. In Malay, *belanggar* means "to collide with," and this described how two roof lines met to form an L-shape. The roof was covered either with ironwood shakes or with corrugated metal. Tightly fitted milled timber was used for the walls and flooring. The switch to this style, however, greatly hindered the easy movement of air through the building. Shutters and louvered glass windows became more popular, and with the introduction of electricity, overhead fans came into general use.

The overall proportions of the present buildings in Kampong Ayer reflect the classic style of Anglo-Malay architecture. Local builders continue to follow simple roof lines and floor plans, but the use of new building materials have made possible the construction of larger structures over the river. Reinforced-concrete pilings and floor joists are capable of supporting more weight and have, in turn, led to the use of brick walls and the

Several boats in good repair are moored at a fishing family's home. Under the back of the house, concrete pilings are visible that, throughout Kampong Ayer, are gradually replacing mangrove poles and ironwood posts. Only the



proportions of the house reflect a centuries-old building style, as the availability of milled timber, corrugated metal and other industrial materials has gradually eliminated traditional homes built of mangrove, split bamboo and palm-frond shingles.

supported wooden walkways. Beneath them run metered water mains and electrical power lines. Although Kampong Ayer enjoys modern luxuries, including washing machines, televisions, cellular phones and fax machines, fishing lines and gill nets are still strung from the pilings, and boats are moored in the cool shade underneath the houses.

Kampong Ayer's 3200-meter-long (two-mile) labyrinth of buildings is divided into 40 village units. Each is governed by a *tua kampong*, or headman. Islamic law and a democratic system of headmen and local councils facilitate community participation on matters



After the rigid spine has been cut out, the rest of the coconut-palm frond will make a new broom for this child's neighbor.

construction of houses of two stories. Private homes, schools and mosques have increased their size, and now brightly-colored paint, linoleum, plywood, smoked-glass windows and whirring air-conditioning units are the basic exterior design elements of the 1990's.

The nature of work in Kampong Ayer is also changing in the growing prosperity of Brunei's economy. Before the discovery of oil at the turn of the century, each neighborhood specialized in a craft: silver and gold work, brass casting, or the weaving of brocades known as *kain songket*. One of the neighborhoods of Kampong Ayer is still called

Kampong Pandai Besi, or "the village of blacksmiths." But now, few craftsmen can produce a spear or a *keris*, the traditional ceremonial dagger, and it is far more likely that the young residents will become doctors, businessmen, motor mechanics, bus drivers, plumbers, teachers or computer programmers than artisans.

ONE AFTERNOON I CAME UPON Hajji Baba, who was sitting in the shade of his front porch making a broom from the fronds of a coconut palm. Children who were helping him with the work clustered around us. Within a few minutes an elderly woman, dressed in a sarong, appeared with a tray holding two glasses of tea and a plate of banana fritters. The hospitality, the setting, and the ease of conversation was typical of the traditional Malay villages of Southeast Asia.

Hajji Baba explained that he had the day off from his job as a medical technician at the government hospital. Dressed in a pair of running shorts and a white tee-shirt, he was spending the afternoon catching up on domestic chores. When the day cooled into early evening, he said, he would replace some of the corrugated-metal roofing on his house, in anticipation of the approaching monsoon season, and before nightfall, he would go out to check his crab pots and fishing

nets. As we talked I was reminded of how well the people of Kampong Ayer have integrated traditional village lives with the changes brought about by the developing economy of modern Brunei.

Signs of these contrasts and changes are everywhere. Young men wearing pink-framed wrap-around sunglasses roar by in water taxis bearing names like *Rolling Stone*, *Jurassic Park* and *Bujang Sinang* ("The Happy Bachelor"), while old women sit quietly on their verandas weaving *ketupah*, the delicate coconut-frond containers in which individual portions of rice are steamed. The market boats sell everything from fresh turtle eggs and durian to rainbow lorikeets and hamburgers *di bungkus*—to go. One night while I strolled, I heard the far-off sound of a tambourine playing the *hadra*, a traditional beat that announces a wedding, while nearby a young man sat on a wooden bench listening to a Bob Marley reggae tune on a tape player.



A resident wearing a topiah, the cap worn by Muslims throughout Brunei and Malaysia, carries his son to Friday prayers along a typical jembatan, or boardwalk.

Work, architecture, styles of dress and musical tastes will surely continue to change, but the residents of Kampong Ayer remain united by the traditions of Islam and a strong sense of community—the latter nurtured, in part, by their unique setting. During my week-long stay, the only problem I encountered was a lack of time that prevented me from accepting many of the numerous invitations to have meals with hospitable families.

ONE MY LAST EVENING IN Kampong Ayer I sat at the end of one of the covered *tambang* landings and smoked a clove cigarette with an old man who told me about his 22 grandchildren. We watched the sun set, and as the stars came out, a row of lights illuminated the Omar Ali Saifuddin mosque that overlooks Kampong Ayer from across the river. There was the sound of lapping water, and the distant notes of a bamboo flute hung in the air as the old man told about a dramatic fire that had been battled by courageous neighbors just a few weeks earlier. Soothed by the gentle swaying of the pilings and the voice of the old man, I found myself fantasizing about what it would be like to build a house and live in Kampong Ayer myself.

Of course there would have to be French doors opening onto wide, shaded verandas crowded with pots of orchids, frangipani trees and night-blooming jasmine vines. I imagined myself in a checked sarong, lying beneath a mosquito net that rustled in the breeze of an overhead fan. At dawn, I would explore the floating market in search of ingredients for delectable Malay, Chinese and Indian dinners with visiting and local friends. Would I need a fax machine, or a linen sports coat? Should I buy a small boat, or would it be better to depend on public transport?

The old man's voice brought me to my senses as he shook my arm and let me know that a *tambang* was waiting to take me across the river for my last night in Bandar Seri Begawan.

AS I HEADED INTO THE WARM night air, the lights of Kampong Ayer receded and I found myself wondering where else people enjoy such a community, where old traditions are so successfully combined with the conveniences of modern life. ●

Following a year in Borneo, Eric Hansen wrote his first book, *Stranger in the Forest*, and after travels to the Middle East wrote *Motoring With Mohammed: Journeys to Yemen and the Red Sea*. He lives in northern California.



A house displays the corrugated metal roof and louvered windows typical of 1960's and 1970's construction, as well as the bougainvillea and orchids popular in the village. The government of Brunei now offers incentives for residents to relocate to homes on dry land, but most appear happy to live above the river's cooling ripples.



London's Islamic Art Market

Written by Louis Werner

Photographed by Melanie Friend



*Are you
shopping for,*

*say, a rare Timurid miniature painting?
Or perhaps for a slightly more common
Mamluk ewer? Neither Kabul nor Cairo
is the best place to look. For serious collec-
tors and dilettantes alike, London is the
trading center of Islamic art.*

Christie's

Christie's auction house has stood for more than 170 years on a block midway between Piccadilly Circus and Buckingham Palace, and is one of the poles of London's Islamic art market. The other is Sotheby's (previous spread) on New Bond Street, founded in 1744. Previous spread, inset: In his gallery a few blocks from Sotheby's, dealer David Aaron examines a Kashan ewer.



Ever since the beginnings of the British Empire, travelers, traders and admirers have brought Islamic art objects of every type and every quality from their lands of origin to London for sale to collectors from around the world. An abundance of auction houses, galleries and private dealers makes London the city that offers not only the most and finest pieces for sale, but also the best connoisseurship and professional advice.

The city's Islamic market comes most vibrantly alive in the third week of each April and October, when the famous auction houses of Sotheby's and Christie's hold their Middle Eastern sales. Although the two houses do most of their year-round trade in Western art, the Islamic weeks are part of nearly a dozen semi-annual specialty auctions. In these weeks, the finest Islamic art on the world market is there to be admired, studied and perhaps even handled. Here, one specimen can be compared with a contemporary one; one dynasty's output can be contrasted with another's, and—just as important—an object's presale price estimate can be measured against its actual price at the rap of the gavel.

The range of objects consistently impresses even connoisseurs: Iznik ceramics, Mamluk glass, Timurid metalware, Persian miniatures, Qajar lacquerware, Ottoman armor, Heriz carpets, Turkoman textiles, illustrated scientific manuscripts, illuminated copies of the Qur'an, smatterings of European prints, photographs, and paintings of Islamic lands—and, this year, an entire, carved-wood Damascene room, complete

with its original, three-meter-high (10') ceiling (See *Aramco World*, May-June 1993).

During the five-day previews, auction-house experts stroll through display rooms answering questions and sharing opinions. Prospective buyers trade tips or take furtive notes. Dealers keep a sharp eye out for undervalued objects and new customers.

Buyers seeking Islamic art include local and international dealers known as "pickers," the low-profile middlemen who, in seeking out undervalued items, keep the wheels of trade greased. Fewer in number—but better dressed—are the high-end international dealers, who often arrive to act on behalf of museums and unidentified individuals.

In the crowd, too, are serious private collectors, the ones with the requisite money, taste, and leisure to become true connoisseurs. The best-known of this elite is Nasser D. Khalili, whose Nour Foundation administers a 20,000-object collection obtained largely over five years of power-shopping the London market (See *Aramco World*, November-December 1994).

Other collectors come from abroad, often to pursue passions with national flavors. The Japanese have a reputation for favoring glass and ceramics; Germans and Danes can often be found examining arms and armor; Turks are often alert to Iznik pieces new to the market while expatriate Iranians frequently harbor a soft spot for the art of the Qajars of the 19th century.

On sale day, there is a low, restrained buzz from the crowd under the high dome of Christie's Great Room, watched over by a gilt-framed portrait of James Christie, the firm's 18th-century founder. Dealers, among whom secrecy is a professional watchword, take up positions along the back and side walls. From there, they can best observe their rivals' moves while remaining as inconspicuous as possible themselves. Private collectors and spectators—some of whom come just to watch who buys and who does not—take the seats up front. As the sale begins, bids appear as mere nods or raised fingers—or as timely phone calls to agents, who bid with cellular phones pressed to their ears. In the Great Room, only neophytes and the brashest of connoisseurs openly telegraph their intentions.

To be sure, the London Islamic-art market is active well beyond the auction weeks, with private dealers and galleries open year-round. Some specialize in what the trade calls "niche areas," such as coins, contemporary calligraphy, or the modern decorative arts. Others focus on a region or an era, such as Greco-Roman or ancient Near Eastern. Dealers who work from home must be phoned for appointments, but galleries always welcome the walk-in public.

Even at the major auction houses, Islamic art experts can be approached at any time with questions about collecting strategies, price trends, or appraisals. Many are busy beyond auction weeks with more frequent sales of lower-priced Islamic

pieces. Bonham's of Knightsbridge recently became the third auction house in London—after Sotheby's and Christie's—to establish an Islamic department of its own. In its South Kensington rooms, Christie's holds bi-weekly sales of miscellaneous non-Western objects, many of them from the Islamic world.

One of the most subjective issues in the art market is the way prices are set on objects that, more often than not, are unique. According to Sotheby's expert Brendan Lynch, it is a matter of "condition, quality, and rarity, but not necessarily in that order, and always in the eye of the beholder." And among beholders, nowhere are the differences greater than between the scholar and the collector: While the former often requires only a shard, the latter seeks the whole pot; while the former appreciates the commonness that reveals the style and taste of a bygone era, the latter demands the rarity that illuminates high cultural achievements.

Presale price estimating is thus a matter of prior auction records, hunches about market trends, foreknowledge of simmering bidding wars between rivals, and an expert's personal response to an object. But once the auction is under way, emotion rules the floor. The bidders' furtive twitches and winks are frequently signs not only of a desire to remain inconspicuous, but also of powerful competitive drives and deep desires to gain a certain favored object, sometimes at even a reckless price.

Prices in the Islamic art market as a whole are more easily explained. Oil wealth in Iran fueled a run-up in Qajar pieces in the 1970's, which ended abruptly with the revolution in 1979. Fast-mounting prices for Iznik ceramics in the early 1990's paralleled an upsurge in the Turkish economy. Individuals, too, can boost prices: Nasser Khalili, Shaykh Nasser Al Sabah of Kuwait (See *Aramco World*, November-December 1990), and more recently, a young shaykh of Qatar who prefers to remain anonymous have each bought in sufficient quantity to buoy the market single-handedly.

In general, however, dealers maintain that the Islamic art market is relatively stable. More than their colleagues selling in the impressionist and other volatile Western art markets, Islamic dealers have mostly shunned the high-stakes speculation that sends prices on roller-coaster rides. In fact, observers point out that today's prices in Islamic art are lower than 19th-century prices for similar pieces, and also lower than current prices for much Western art. The great Iznik collections assembled over the last century—such as the Godman collection at the British Museum or the Benaki collection in Athens—were assembled in times when the typical price of \$1500 for a single dish stood well above today's price, measured in constant currency.

The less tangible concerns of beauty, artistry, and historical significance matter in pricing, too. Auction catalogues work hard to cover this ground. If the post-sale tally sheets of prices are a

snapshot of the market's season, then the catalogues are its textbooks.

A typical catalogue entry gives a detailed description of the piece, the artist's name (if known), a place of origin (if known), a date (often estimated), a list of materials used to create the piece, its exact size, a detailed report on its condition, the provenance, or chain of past ownership, and prior appearances on the auction block. Important items merit longer, more academic notes in which uncertainties are investigated, relevant literature is cited, results of laboratory tests of the materials are revealed and comparable objects in significant collections are noted. In all entries, the tone is calculatedly factual and dispassionate, and one rarely finds an adjective that might imply judgment.

Auction-house Islamic experts indeed pride themselves on being scholars first, and business people second. John Carswell came to Sotheby's Islamic department after serving as an art historian at both the Oriental Institute in Chicago and the American University of Beirut. A modest man, he points out that good scholarship in an auction



Dyala Salam

In the less formal part of London's Islamic art world are galleries such as Dyala Salam's, whose specialty in 18th- and 19th-century decorative Ottoman and European *turquerie* furnishings embraces textiles, Bohemian glass, inlaid furniture and porcelain.

house not only serves the buyers, but also helps keep the business honest, by making art theft difficult. This, he says, is an often unheralded service of the trade.

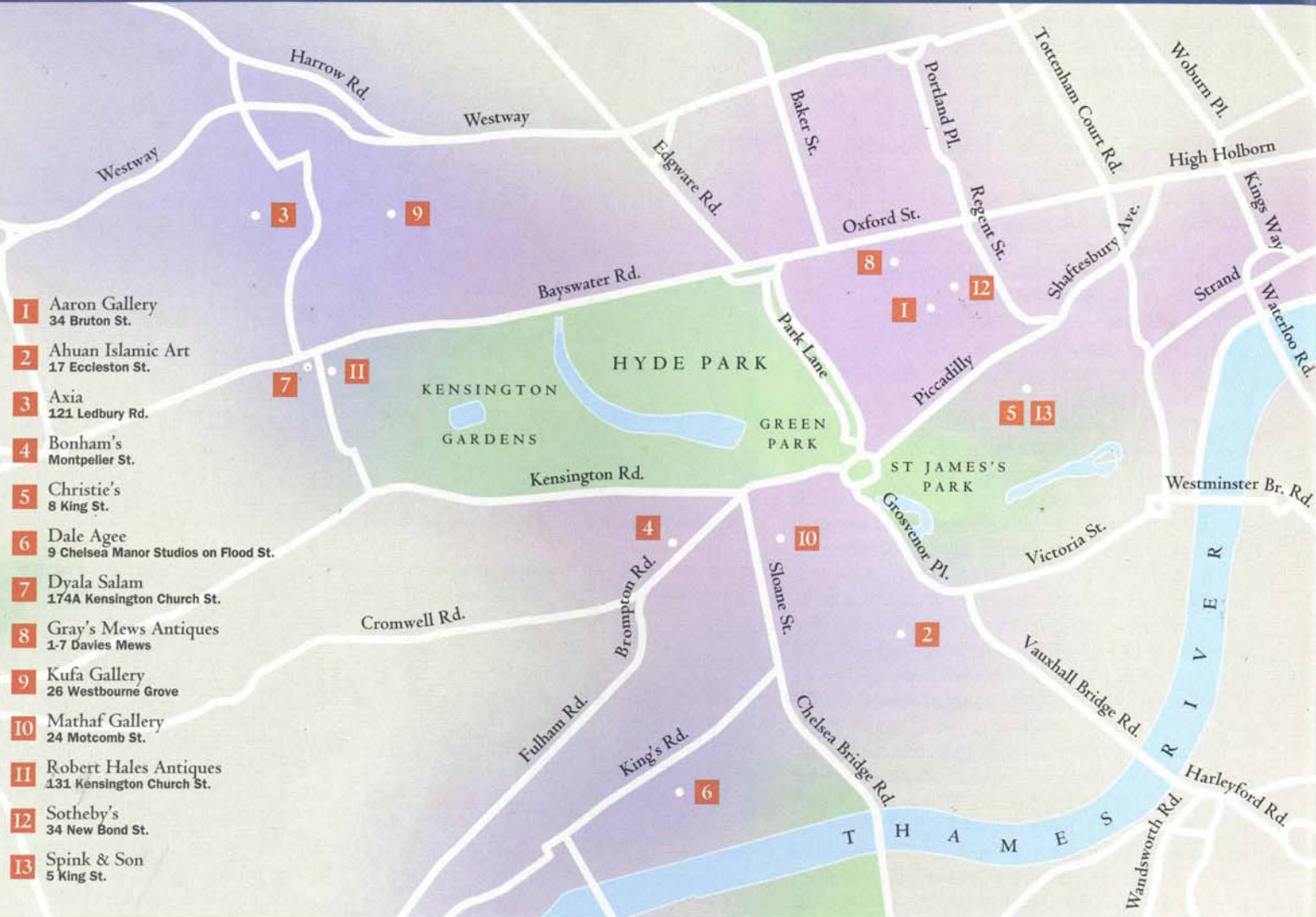
By law, auction houses must make a "good-faith effort" to guarantee that each object came into the seller's hands legally. The catalogue statement of the item's provenance helps assert this, and auction catalogues have a wide readership in the antiquity departments of Islamic countries. Thus false provenances concocted for stolen or illegally exported objects can often be detected.

Carswell notes that even the hint that an object might be stolen is enough to delay its sale. Recently, he recounts, some tiles were offered that were thought to match those reported taken from a Central Asian museum in the former Soviet Union. It proved impossible to communicate with the museum before the auction was to take place, so the tiles were withdrawn from sale pending verification. Although the rumor was finally



David Sulzberger, owner of Ahuan Islamic Art, displays a Syrian glass mosque lamp from the 14th century.

Islamic Art Galleries and Auction Houses in Central London



- 1 Aaron Gallery
34 Bruton St.
- 2 Ahuan Islamic Art
17 Eccleston St.
- 3 Axia
121 Ledbury Rd.
- 4 Bonham's
Montpellier St.
- 5 Christie's
8 King St.
- 6 Dale Agee
9 Chelsea Manor Studios on Flood St.
- 7 Dyala Salam
174A Kensington Church St.
- 8 Gray's Mews Antiques
1-7 Davies Mews
- 9 Kufa Gallery
26 Westbourne Grove
- 10 Mathaf Gallery
24 Motcomb St.
- II Robert Hales Antiques
131 Kensington Church St.
- 12 Sotheby's
34 New Bond St.
- 13 Spink & Son
5 King St.



Working by appointment from her South Kensington home, textile specialist Penny Oakley focuses her trade on Ottoman, Safavid and Moghul fabrics, embroideries, brocades and carpets that predate the 18th century.

proved false, the owner was not pleased that he had to wait six months for the next round of sales.

Owners' identities are not necessarily revealed to buyers or the public. After verifying the legitimacy of the seller's ownership, the auction house will, on request, keep names under wraps. Buyers can make themselves more anonymous still, as agents are permitted to bid on their behalf, and even the auction house may not know whom the agent represents.

On the block, objects are sold in rough categories by geography, era and type. In recent years, the manuscript market has proved particularly active. Recently, a late-16th-century Indian copy of the Qur'an, with the original lapis-lazuli binding, sold for \$230,000. The earliest known Moghul copy of Firdawsi's *Shahnamah*, with miniatures by court painters Basawan and Kesu Khurd, commanded one-third of a million dollars from an anonymous buyer. Interest in the manuscript may well have

been heightened by headline news, on auction day, of a far more famous *Shahnamah*, from the Safavid period, that was involved in a remarkable international swap engineered by Oliver Hoare, a London private dealer who works from his home.

Nearly half the pages of the Safavid *Shahnamah*, commissioned in 1522 for Shah Tahmasp and originally consisting of 760 pages of illuminated text and 258 miniatures, had been dispersed through sales and museum donations over the past 30 years. Hoare, along with many others in the trade, had been appalled by the manuscript's dismemberment. Fearing worse to come after the current owner's death, Hoare made the manuscript's preservation his mission, and sought out potential buyers who would vow to keep the text and the remaining 118 miniatures intact. Ultimately, the *Shahnamah*, with a presumed auction value of \$20 million, was traded to the government of Iran in exchange for a Willem de

Kooning painting in Iran's national collection. Successfully carrying out the international middleman's delicate work, Hoare demonstrated the art dealer's quiet—but often vital—role in cultural preservation. Although Hoare's own financial interest in the deal remained undisclosed, even the usually skeptical Souren Melikian, art and auctions correspondent for *The International Herald Tribune*, approved his work.

Outside the auction houses, every dealer and gallery in the business has an individual character. Like Hoare, French-educated dealer Irène Momtaz works out of her North London home. She quickly takes conversation onto an imaginative, even mystical, level. "Each of my pieces is a meditative object," she explains. "A buyer must find the object's entry point, and then allow his mind to carry him all the way inside." She prefaces descriptions of pieces with metaphysics, a style of art appreciation she says she learned as a child, listening to late-night conversations between her father and the great connoisseur and philanthropist Hagop Kevorkian, whose collection was dispersed after his death to the museums of the world.

She tells about one of her best clients, who always seemed to buy without rhyme or reason—"a masterpiece one day, a fragment the next." Later he explained that he could "hear" his pieces as elements of music, "one a crescendo, the other a grace note, all coming together in a symphony for the eyes. Then I too saw, by listening, that he was right."

Each item Momtaz offers has some distinguishing mark or quality: a Kashan lusterware jug with a streak of blue glaze purposely splashed on by the 12th-century potter; an Iznik dish painted in rare, realistic imagery; or other ceramics decorated with *çintemani*, the triple-dot, double-ripple motif that symbolizes leopard spots and tiger stripes.

Dealers like Hoare and Momtaz sell most often to museums and serious collectors, as do other private dealers of their caliber. All tend to specialize in one or at most two of three broad areas: "objects"—glass, metalware, and ceramics—textiles, or manuscripts. Bachir Mohammad, for example, of Pakistani and Malaysian descent, is interested in fine objects;

Makram Irani, of Lebanese origin, specializes in calligraphic arts; and Londoner Penny Oakley loves textiles and specializes in Ottoman, Safavid, and Moghul velvets, brocades and embroideries.

Those dealers who operate galleries have space for broader inventories. In Belgravia is Ahuan Islamic Art (See *Aramco World*, November-December 1985), owned by the eclectically minded David Sulzburger, whose shopwindow is itself like a museum display of mixed media. Axia, owned by Iznik scholar and art-book publisher Yanni Petsopoulos, is in a residential area near Notting Hill Gate. The Aaron Gallery, founded in Tehran in 1910, now stands just off the neat grid of Berkeley Square. Robert Hales, who alone in London deals exclusively in oriental arms and armor, can be found in his shop walled with showcases in Kensington Church Street.

A visit to any of these galleries is refreshingly free of sales pressure. Dealers at this high end of the market have such confidence in their goods that they appear in no particular hurry. Most of them show pieces one at a time across an empty table, studying them upside down and sideways, fetching others for the sake of comparison and pulling reference books from shelves to show, rather than merely tell, as much as possible about an object.

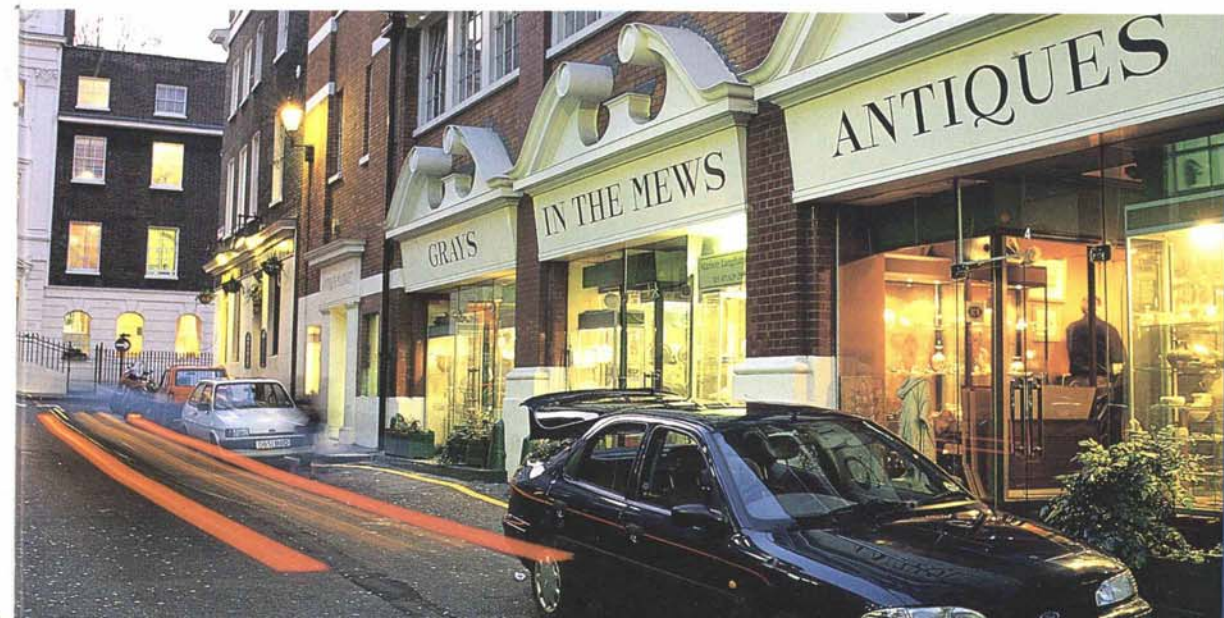
For instance, David Aaron displays a zoomorphic incense burner with a blue ceramic eye to make his point about realistic modeling in 11th-century Khorasan. Robert Hales demonstrates how to spot the forged signature of master Persian swordsmith Assadullah by unsheathing blade after blade of inlaid tempered steel.

At the other end of London's Islamic trade, and providing an experience more akin to a clamorous *suq* than a museum's research section, are the arcade dealers in Gray's Mews Antiques, just off Davies and Oxford streets on the north end of Mayfair. The Mews is a rabbit-warren of antiques traders arranged by specialty, and the Islamic dealers can be found in the basement, often gathered together over a pot of tea or individually absorbed in Arabic or Persian newspapers. Some stalls are barely large enough to squeeze inside,

London's Islamic Art Market



"Each of my pieces is a meditative object," says private dealer Irène Momtaz.



Gray's Mews Antiques

Just south of the bustle of Oxford Street is Gray's Mews, where lower-priced dealers in a wide variety of Islamic art objects can be found.



From his basement shop in Gray's Mews, dealer Elias Assad carries on a brisk business in manuscripts that date back to the early centuries of Islam. "There is a surprise on each page I turn," he says.

and their inventory runs the gamut from Iraj Lak's pre-Islamic pottery to Farah Shahdad's Bohemian glass, produced for the bygone Ottoman trade. Many dealers here seem less confident of the quality of their goods than of their prices, so the buyer's own expertise is important.

One of the most inviting shops belongs to the 23-year-old Syrian dealer Salim Hassbani, whose enthusiasm for learning more than compensates for his recent entry into the field. A civil engineer by training, Hassbani's interests, and his stock, are eclectic: a set of monumental carved wooden doors, an Ottoman cannon bearing the *tugra* of Sultan Abdul Majid, and a batch of tiny, ancient Near Eastern cylinder seals, to name a few items.

The stall of Elias Assad, however, is less a gallery than an office full of bound folios stacked this way and that—just what one might expect from a manuscript dealer. He himself is a devoted collector of works in Syriac, and he says he has never owned a manuscript that has not pained him severely to sell. "There is a surprise on each page I turn," he explains. "The three elements in every manuscript—ink, paper, and calligraphy—are in constant conversation, sometimes speaking in riddles, less often speaking clearly, and it is my challenge to understand them. Most surprising of all are the manuscripts in perfect condition, as if they have not been touched for hundreds of years."

Assad's inventory ranges from the rare to the mundane. On one visit, he pulled from his safe a

four-page student thesis on Euclidian geometry, bearing the *hijri* date 650 (about 1253). His most recent acquisition was a mysterious manuscript with parallel inscriptions in three unidentified hieroglyphic languages that alternated with an Arabic inscription that itself made little apparent sense.

Assad acquired the manuscript by serendipity, often an important factor in the Islamic art trade. An acquaintance had bought an odd lot of what he had been told were miscellaneous books of little significance. Without carefully examining them, he sold the lot on to Assad. Assad did examine them, and identified them as Coptic and Ethiopic hand-written Bibles, a few Syriac manuscripts, and a 16th-century astronomical treatise—certainly interesting, potentially valuable.

Every dealer and auction house is full of such stories. Not long ago, an elderly London woman, clearly not well-off, walked into Sotheby's to see if a small pitcher that had been passed down to her from a relative might be of value. Yes, most likely so, said the Sotheby's expert with careful understatement. What she had was a jade Timurid dragon-headed jug, similar to those in top museums (See *Aramco World*, January-February 1995): It later sold for nearly \$200,000.

The one area of Islamic art in which identity is rarely in question is that of coins, which typically feature a ruler's name, a mint date and a place. Elizabeth Darley-Doran, along with her husband Robert and colleague André de Clermont, serves as

an Islamic coin consultant to Spink & Son, on the same well-kept block as Christie's. She notes that when a hoard of Islamic coins was unearthed recently in Scandinavia, at a Viking site, all the archeologists needed to do was put on reading glasses in order to determine the origins of their find.

Founded in 1666 by goldsmith John Spink, Spink & Son has grown into the world's leading trader in coins and medals. Its oriental department mounts museum-quality exhibitions—recently including a Mamluk gold-filigree pendant, a Safavid *cuerda-seca* tile, and an Ottoman stamped leather powder flask—during the weeks of the Islamic art auctions.

A visit to the second floor at Spink is not unlike being invited into an upholstered bank vault holding what looks like all the world's money. It is an essential rite of passage for anyone wishing to learn about the historical numismatic issues from the lands of Islam. There, displayed on black-velvet trays, sit coins classed by dynasty or place of issue, from the pre-Islamic and early Islamic years to the Ottoman Empire and contemporary Muslim states. Some, of course, are more significant than others. The so-called "77 dinar" is the first known coin to carry a Muslim ruler's name, and carries the stamped *hijri* date of 77 (about 697). One of them recently sold for \$190,000. Less ambitious buyers might be satisfied with one of a number of Abbasid dinars priced below \$500.

Still other London galleries specialize in contemporary Islamic art. There is no better place than the Chelsea studio of US-born Dale Egee to see the work of modern pioneers such as Hossein Zenderoudi, Dia Azzawi, Hassan Masoudy, Rachid Diab, Hossein el-Geballi and Faisal Samra, whose art can also be found in other top galleries and museums around the world.

Across Hyde Park in the international district along Westbourne Grove is the Kufa Gallery, which opened in 1986 as a salon for international poets, musicians, painters, and other artists. While it is still more of a gathering place than a gallery, Kufa maintains an inventory of works by painters and printmakers like Jawad Salim, Ali Omar Ermes, Ismail Fattah, and Faik Hassan.

Brian MacDermot deals in the works of Western orientalist painters, contemporary ones as well as nineteenth-century artists like Gérôme and Lewis, from Mathaf Gallery, near Harrods in Knightsbridge. In the bohemian part of Kensington, Lebanese dealer Dyala Salam sells late Ottoman and European *turquerie* furnishings and decorative arts from a tastefully cluttered storefront.

Back in Christie's Great Room, as the final auction of the week draws to a close, single Persian tiles from calligraphic friezes have done particularly well: One fetches nearly \$40,000 in the face of a presale estimate of \$7500. A broken Abbasid lustreware dish, reconstructed from half its shards, flouts the pricing rule about condition by selling for more than four times its estimate. After rechecking tallies, clustered dealers nod their heads in agreement: ceramics are a strengthening market.

Sold the same day is one of the most talked-about lots of the week. Years before, a Swiss collector had purchased a carpet from an inexperienced dealer for only a few hundred francs. Later inspection showed that the carpet was the only complete 16th-century Anatolian star carpet known to exist. The collector had decided to sell it and donate his windfall profit to charity. At the final tap of the gavel, his donation came to \$172,000. It was an extraordinarily generous gesture to cap the season, and also, perhaps, a reminder of that old proverb from the Egyptian *suq*: "A good deed done on Saturday returns to you on Sunday." ☉

Author and filmmaker Louis Werner studied at Princeton and Johns Hopkins SAIS, and lives in New York.



Spink & Son

Located just next door to Christie's, Spink & Son—now owned by Christie's—was founded in 1666. On the second floor, Islamic numismatic experts Robert and Elizabeth Darley-Doran, above, not only serve clients but also catalog collections and arrange exhibitions.

► Inside back cover:

Aaron Gallery's window on Bruton Street attracts an admirer. David and Manoucher Aaron are examples of the second- and third-generation dealers, connoisseurs and collectors who mark the field of Islamic art as a family domain. The Aarons' grandfather established the family business in Tehran in 1910; Irène Momtaz is the daughter of the man who helped establish the field in Paris. Curator Oliver Watson of the Victoria and Albert Museum is the son of a prominent Asian scholar, while William Robinson of Christie's is the son of a noted expert on Persian painting. Collector Nasser Khalili, who earned a Ph.D. in the field, first trained his eye looking through his father's and grandfather's collections.

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: **Norman, Oklahoma**, May 20; **Alameda, California**, June 20 and 21; **Columbus, Ohio**, June 27 and July 14 through 15; **Tuscaloosa, Alabama**, June 28. For details, call (202) 296-6767 or (510) 704-0517.

Steps Through a Doorway in Time. An evening of ethnomusicological recordings from the early years of the century include a town crier of Jiddah recorded in 1909, lullabies of 15th-century al-Andalus recorded in 1911, and more. Presented with historical photographs of the Middle East. St. Columbkille Parish, **Brighton, Massachusetts**, May 21 at 7:30.

Modern Art From North Africa. Paintings, sculptures and graphics at the Museum voor Volkenkunde, **Rotterdam**, through May 31.

Modern Indonesian Painting: Toeti Heraty's Choice. Psychologist, philosopher and poet Toeti Heraty is also one of Jakarta's foremost art collectors. Twenty-five paintings from her collection are displayed with poems and fragments of literature. Museum voor Volkenkunde, **Rotterdam**, June 3 through August 27.

Thundering Hooves: Five Centuries of Horse Power in the American West is devoted to the role of the horse-and-rider in the settlement of the Hispanic Southwest. Much was derived from the horsemanship traditions of al-Andalus, or Muslim Spain. Stradling Museum of the Horse, **Ruidoso, New Mexico**, June 3 through September 3.

Treasures of the Sultans: Masterpieces from the Topkapı Palace, Istanbul, Turkey. This single-venue show marks the first US exhibition to focus on the collections of Topkapı Saray, the palace of the Ottoman dynasty. Many of the 85 objects are elegant works of jewelry, carving and metalwork, while others convey a picture of daily life. The Museum of Fine Arts, **Houston**, through June 11.

Forces of Change: Artists of the Arab World. This widely acclaimed exhibition of 160 contemporary works by 70 Arab women artists from 15 countries seeks to de-mystify the region and its women. Bedford Gallery, **Walnut Creek, California**, June 14 through August 20.

Europe in India: Mughal Paintings and their European Prototypes traces the impacts on Moghul style of early European visitors, such as the Jesuits who carried illustrated Bibles to the 16th-century court of Akbar, and others. The British Museum, **London**, June 16 through August 13.

Dal mille al mille: Gold of the People of the Black Sea displays jewelry representing nearly 600 archeological finds beginning 3000 years ago. Sala dell'Arengo, **Rimini, Italy**, through June 25.

Degree Show. The display features arts and crafts by M.A. candidates of The Visual Islamic and Traditional Arts Department (VITA). The Rebecca Hossack Gallery, Prince of Wales's Institute of Architecture, **London**, June 27 through July 8.

Art from the Forge: Tuareg Metalwork. Metal jewelry, ceremonial armor and furnishings reflect the sentiments of Tuareg nobility and the deft hands of Tuareg craftsmen. National Museum of African Art, **Washington, D.C.**, June 28 through October 22.

Threads of Tradition: Ceremonial Bridal Costumes from Palestine. Wedding dresses, headpieces and scarves from the extensive collection of Farah and Hanan Munayyer show each of the major regional styles of weaving and embroidery at its finest. Fuller Museum of Art, **Brockton, Massachusetts**, through July 2.

EVENTS & EXHIBITIONS



Blaid Farous, a snake charmer in the Djemaa el-Fna, discusses how he learned his trade from his father.

Morocco: The Past and Present of Djemaa el Fna is a refreshing and candid video documentary that presents Marrakech's famous square as a historic crossroads of cultures. Through translated narration, vendors, performers and Moroccan visitors discuss in conversational terms what the square means to them and, in turn, international visitors comment on their own impressions. A brief discussion of the square's history puts these diverse experiences in context. The hand-held camerawork emphasizes the ordinary over the spectacular. The film imparts a rich understanding of the Djemaa el-Fna as a social meeting ground for innumerable points of view, and its simple revelations will enrich the viewer's own way of looking at any public meeting place. Presented in premiere at "Recent Films About Morocco" together with *Haze*, by New Yorker Tim Bridwell, and *Boujad: A Nest in the Heat*, by Chicago filmmaker Hakim Belabbes, at The Museum of Modern Art, **New York**, June 29, 3:00 p.m. and 6:00 p.m.

ARAMCO WORLD BINDERS ARE NOW AVAILABLE!

These handsome gold-stamped binders are specially manufactured for *Aramco World*. Covered in dark blue linen, each securely holds one to 12 issues of the magazine. A wire-and-slot mechanism permits easy insertion, removal and replacement of individual issues. Cost per pair of binders—enough for about four years' worth of issues—is \$35, including shipping and handling within the United States. California residents add appropriate sales tax; foreign orders add \$10 per pair. Make checks payable to "Binders"; send orders to "Binders," AWAIR, 1865 Euclid Avenue, Suite 4, Berkeley, California 94709. Allow six weeks for delivery.

Woven Weddings, Embroidered Weddings: Women's Clothing and Accessories. A display of 60 costumes offer examples of the cultural heritage of the Maghreb with an emphasis on Tunisia. Musée National des Arts Africains et Océaniens, **Paris**, through July 3.

Art and Empire: Treasures from Assyria in the British Museum displays large-scale stone reliefs from the first-millennium BC palaces at Nimrud and Nineveh along with sculpture, metalwork, ivories, seals and tablets. A companion exhibit displays Assyrian objects lent by the Vorderasiatisches Museum, Berlin. The Metropolitan Museum of Art, **New York**, through August 13.

Djenné: The Most Beautiful City in Africa. As the oldest city in sub-Saharan Africa, Djenné, Mali, played major roles in both trade and the development of a regional Islamic culture. The city's exceptional mud-brick architecture is highlighted. National Museum of Ethnology, **Leiden, Netherlands**, through August 27.

Greek Gold: Jewelry of the Classical World. Magnificent pieces from the Hermitage, Metropolitan and British Museums are featured in this tribute to the skills of Greek goldsmiths throughout the Mediterranean and Asia Minor from the fifth to third centuries BC. Hermitage Museum, **St. Petersburg, Russia**, through August.

Paintings From Shiraz. Twenty paintings and eight bound manuscripts are on display, highlighting the arts of the Persian book practiced in the southern Iranian city of Shiraz, home of some of Iran's most famous poets, from the 14th through the 16th centuries. Sackler Gallery of the Smithsonian Institution, **Washington, D.C.**, through September 24.

The Pyramids and the Sphinx: 100 Years of American Archaeology at Giza draws upon early excavations by Harvard University and more recent ones by the Oriental Institute of the University of Chicago. The Semitic Museum of Harvard University, **Cambridge, Massachusetts**, through December 31.

Within the Middle East: Textiles, Dress and Ornament. Material spanning the ninth to the 20th centuries is now on permanent display at The Royal Museum of Scotland, **Edinburgh**.

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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