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A HIDDEN BEAUTY

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Cover: In Egypt the grandeur of the ancient monuments and the delicacy of countless carvings (inset) often mask a hidden beauty: the handsome texture and subtle coloring of such stones as the multi-hued Aswan Granite (front cover), ancient Egypt's "great" stone, often used for such obelisks as those at Karnak (rear cover). Photographed by John Feeney.

◀ In the suqs of the Middle East, such as the cavernous, sunlit suq of Isfahan in Iran, what matters is not the bargain but the bargaining.

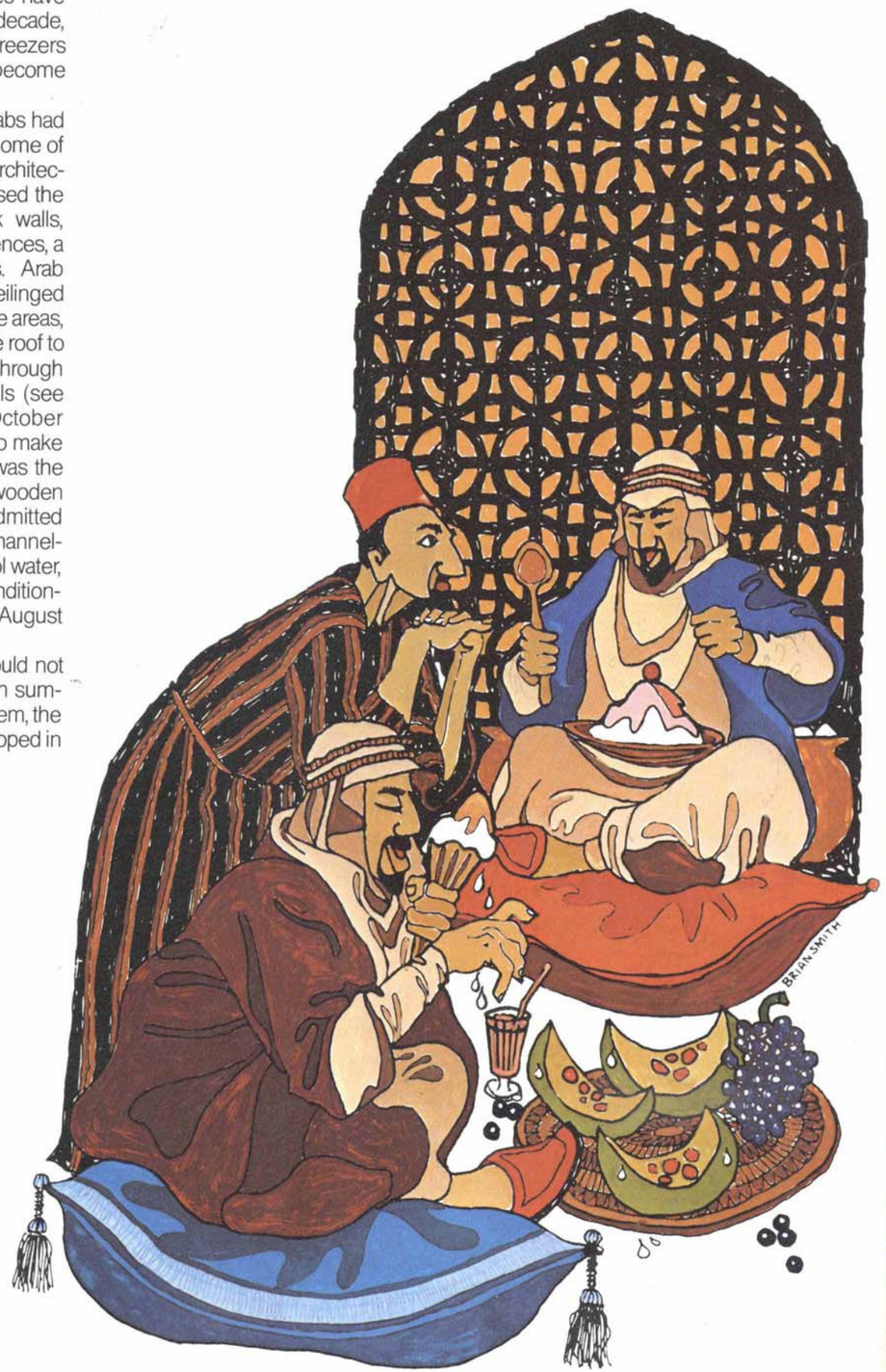
The Iceman Cometh

WRITTEN BY PAUL LUNDE

Nowadays it is difficult to conceive of life in the Middle East without refrigeration and air-conditioning. As one benefit of the huge modernization programs that most Arab countries have launched, particularly in the last decade, such luxuries as refrigerators, freezers and air-conditioning units have become common.

In other eras, to be sure, the Arabs had found ways of beating the heat – some of them ingenious. The traditional architecture of the Arabs, for example, eased the intense summer heat with thick walls, shady gardens and, in many residences, a central courtyard with fountains. Arab architects also provided high-ceilinged rooms, small windows and, in some areas, clever wind-traps, or towers, on the roof to conduct currents of cooling air through hollow conduits built into the walls (see *Aramco World,* September-October 1972). Another ingenious device to make life bearable during the summer was the lovely *mashrabiyah,* a handsome wooden screen that deflected the sun, admitted stray breezes into homes and, by channeling the wind across clay pots of cool water, provided an effective form of air conditioning (see *Aramco World,* July-August 1974).

Architecture alone, however, could not provide that greatest luxury of high summer: a cool drink. To solve that problem, the Arabs had to adapt methods developed in ancient China.



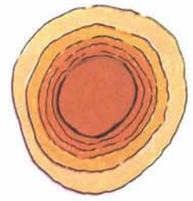
During the Tang dynasty, which was contemporary with the great efflorescence of Arab culture during the Umayyad and early 'Abbasid periods, the Chinese developed sophisticated methods of food preservation. In the ninth century A.D. watermelons from Khwarizm, now the Uzbek Soviet Socialist Republic, were regularly transported all the way to the imperial capital of China; they were packed in ice inside lead containers. This practice – and others, such as keeping perishable foods in ice-houses and ice-pits during the summer – was widespread in ancient China, and to make it possible the Chinese, each winter, cut 1,000 blocks of ice, 1½ feet thick and 3 feet square, in the mountains and shipped them to the capital. Even flowers were exported great distances, their cut stems sealed with wax and their petals packed in ice, and tangerines were individually wrapped in paper to protect them from bruising during transport.

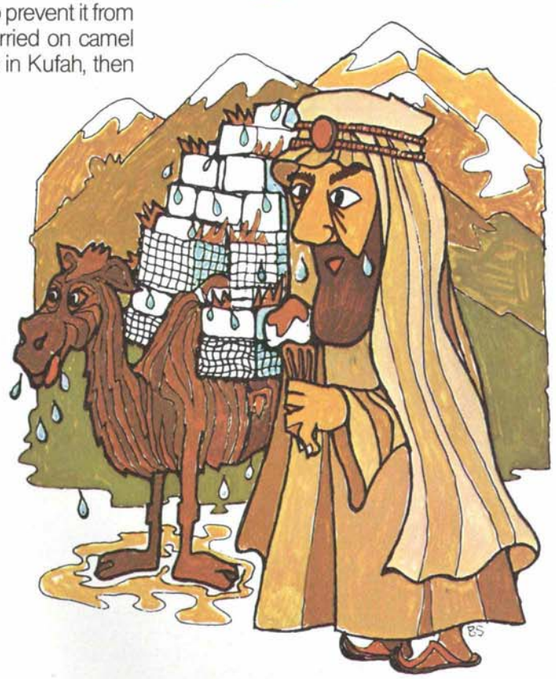
According to medieval Arab historians, al-Hajjaj ibn Yusuf, the formidable Umayyad governor of Iraq, was the first to adapt such developments to the needs of the new Arab empire; he eventually established a regular trade in snow and ice, importing it from the mountains of Lebanon and even from the Caucasus. On the principle used later to make ice cream, the ice was packed in salt, to prevent it from melting on the way, and carried on camel back to a central ice-house in Kufah, then the governor's residence. And by the ninth century A.D., the 'Abbasids were able to enjoy an almost inexhaustible supply of chilled melons and iced drinks. It was during these years too that sherbets were invented – an English name that comes ultimately from the Arabic *sharab,* meaning drink.

The Iraqis and Syrians, of course, had access, within a reasonable distance, to mountains where there was snow most of the year. Yet even the Egyptians, more than 1,000 miles from the nearest source of ice, had ice during the Mamluk era. They obtained it by developing a fleet of refrigerator ships specially designed to transport ice and snow from the mountains of Lebanon.

These ships, which presumably carried the ice packed in salt and straw, docked at Damietta, at the mouth of the Nile, from where the cargo was conveyed upriver to Bulaq and then stored in the *sharab-khanah,* the "Storehouse of Beverages" of the Mamluk sultans. The refrigerator ships were manned by trained "snowmen" *(thallaj),* whose duty it was to make sure the ice didn't melt before it reached its destination.

ILLUSTRATED BY BRIAN SMITH





Under the Mamluks special corps of camel couriers were also developed to transport ice overland – presumably to guarantee the supply in case the refrigerator ships met with accident.

In time, the snow trade became independent of royal authority and ice was sold at a relatively low price in the streets of Damascus, Cairo and Aleppo. It became so important, in fact, that the snow merchants formed their own guilds and were mentioned in poems and chronicles of the age.

Ice, eventually, came to be seen as an important medicine as well as a preservative and was even used as a local anesthetic in minor operations. But for most peoples of the Arab East it was quite simply a lovely luxury that enabled them to enjoy iced melons, cool drinks and – surely one of the great contributions to civilization – ice cream.

Paul Lunde, a graduate of London's School of Oriental and African Studies, is a staff writer for Aramco World Magazine.

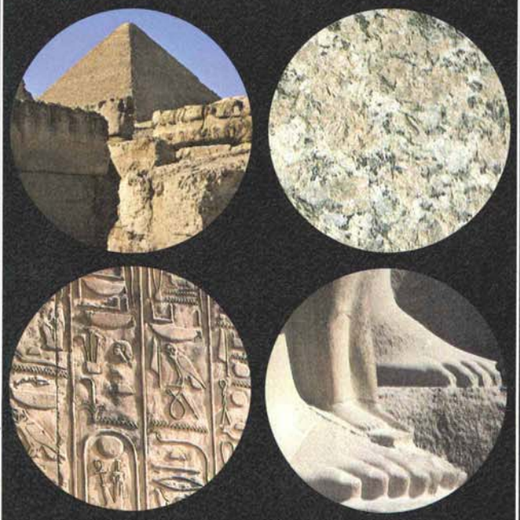
IN THE MONUMENTS OF ANCIENT EGYPT...

A HIDDEN BEAUTY

To the discerning eye, there is a special beauty in the magnificent monuments of ancient Egypt. It is not immediately apparent. It is, indeed, almost hidden. But, paradoxically, it is also impossible to ignore as, beneath the sun, the temples, pylons, obelisks and colossi begin to glow against the soft green of the Nile's narrow valley. It is the muted color of the stone itself.

To most visitors, and to me at first, the sheer size and the raw strength of the monuments are what arrest the eye. But then, particularly in the apricot light of winter, the subtle colors gradually appear: the delicate shades of white and pink, the bold blacks and the striking reds.

You notice the white tints first. Because the Nile Valley, in upper Egypt, cuts through a limestone plateau, you suddenly notice not without surprise the light and cheerful shades of limestone on the precipices which wall the valley: snow white, eggshell, cream, beige and buff. But then, with shock, you realize that the Great Pyramid of Giza is also built of limestone and that, beneath the patina of the millennia, are hidden the same shades of white.



WRITTEN BY ILENE BEATTY MCNULTY
PHOTOGRAPHED BY JOHN FEENEY

Covering nearly 13 acres, the Great Pyramid is solidly built of layers of squared limestone blocks, each layer rising and receding above the other in tremendously long, steep courses that climb to a peak almost 500 feet in the air. When first completed, the steps were covered with a casing of white limestone brought from the quarries of Tura in the Moqattam Hills on the east side of the valley near Cairo. Cut in triangles and fitted into the stair-step sides of the Great Pyramid, the casing blocks made of each face a vast, smooth, snow-white plane that, polished to perfect smoothness, must have been dazzling in the sunlight.

Limestone varies greatly in both texture and tone, but the finest texture, I think, is found in the temple of Seti I, further up the Nile at Abydos, the sacred burial site of the ancient god Osiris. Built about 1300 B.C., the Temple of Seti, by the greatest good fortune, was buried under the shifting sands and thus preserved for centuries. Rediscovered and excavated about 100 years ago, and recently restored by the Egyptian Antiquities Department, the temple is a masterpiece of fine-grained white limestone walls, covered with delicate hieroglyphs.

At Abydos too there is the Temple of Ramses II, with large reliefs painted in brilliant blues, blood-reds, delicate greens, golden yellows and rich red-browns, all startlingly clear against the fine white background. The limestone itself, compact, opaque and as fine as marble, lends to the temple a serenity perfectly in tune with the blue sky and the rich light outside.

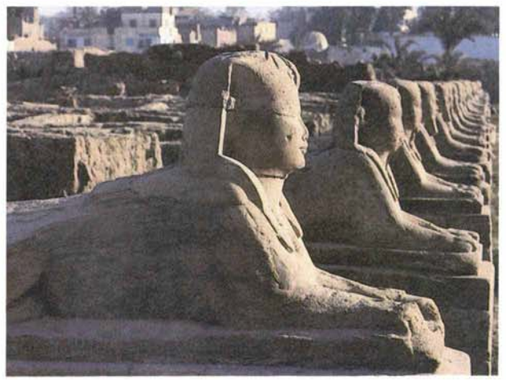
Further south the white tints of the limestone turn fresh and pink at sunrise, peach-colored at noon and rosy at sunset as the cliffs, which extend for hundreds of miles, wind toward Luxor. And then, as the desert plateau closes in, the limestone gives way to another stone that, in some light, has the look of a sunburn. Just as the valley in the north of Egypt cuts between the limestone palisades, in the

One of the oldest stone monuments known to man, the Great Pyramid of Giza (far left and right) is built of over two million huge blocks of yellowish limestone (left) quarried nearby. Carved in black granite, this seated figure (below left) is on a doorframe of Ramses II's temple at Abydos.

south it cuts between sandstone cliffs whose richer, warmer tan glistens with a million pinpoints of light.

At first, I admit, I disliked sandstone; because it consists largely of particles of quartz sand cemented with silica – the particles that give it strength – sandstone seemed too grainy to be beautiful. But then, looking closely in morning sunlight, I began to detect its hidden but brilliant colors: purple, topaz and red, with blue shadows between.

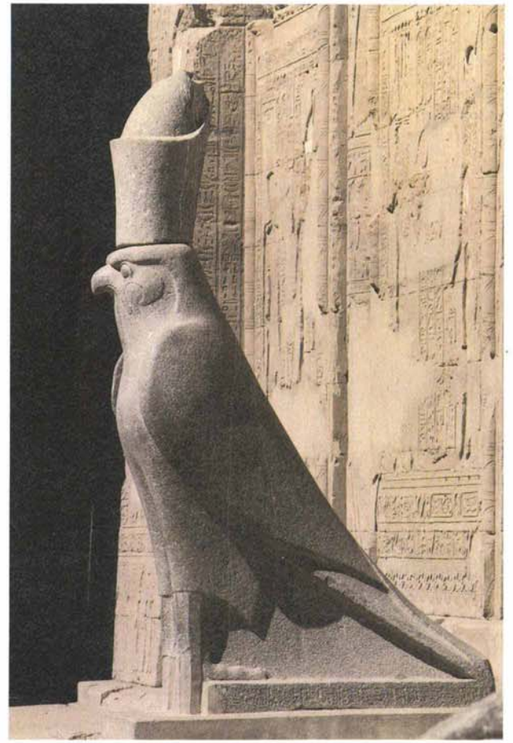
In Egypt sandstone was widely used for important temples: the huge Temple of Horus at Edfu, for example, the most perfectly preserved of all Egyptian temples, or the famous Hypostyle Hall at Karnak, a mile from Luxor. And of course the famous Colossi of Memnon, that pair of giant statues of



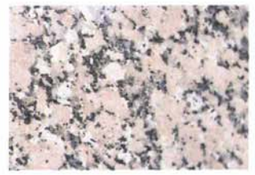
Amenophis III, 60 feet tall and yellow-brown against a flat, green field of lentils, and, in the Valley of the Kings, the sarcophagus of King Tutankhamen in yellowish sandstone, beautifully carved and polished, still resting there with King Tut's body inside it (see Aramco World, May-June 1977).

Of all the stone in Egypt, however, granite, a stone that by its very nature commands respect, is the "great" stone. Granite was used for everything – from entire temples to green scarabs – yet was never common, never ordinary. Everything made of granite, large or small, was special, and represented not only incredible labor but art of a high order. Granite indeed represents the life and times of ancient Egypt as marble represents Greece.

Granite, a hard, strong stone which takes a high, lasting polish, is often thought of as dour and gray,

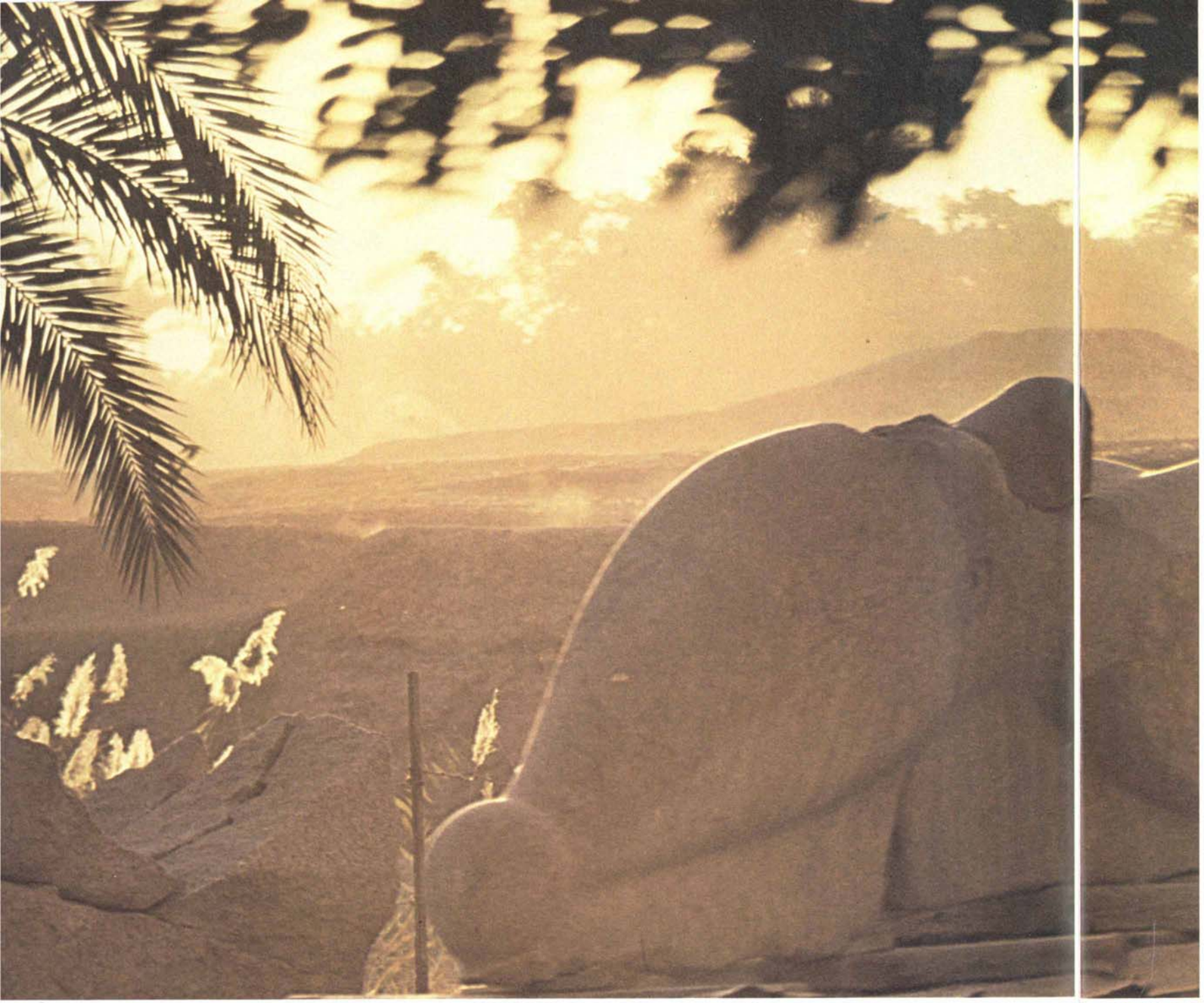


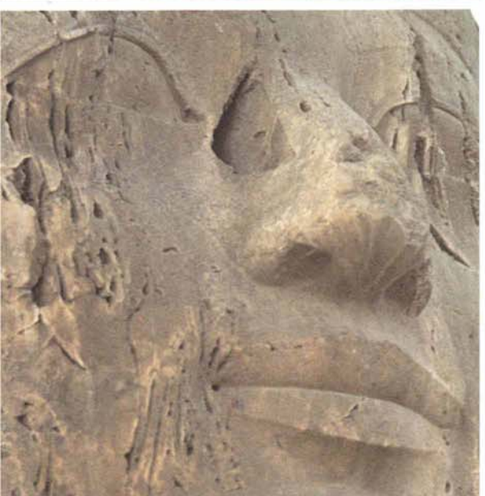
The black granite statue of the falcon-headed god Horus (above) at Edfu shows other colors when seen in detail (above left). A 45-foot seated statue of Ramses II (far left) and the Avenue of the Sphinxes (left) are part of a great temple at Luxor. Inscriptions on a pink granite obelisk there (below) name Ramses II as founder of the temple in honor of the god Amon.



but in fact occurs in many colors: pink, rose, red, gray, green, "dark," "parti-colored" and black. Much of it was quarried at Aswan, up on the Nubian border, where ridges of ancient volcanic rocks – granite, gneiss, and diorite – push up through the sandstone plateau.

Because granite is particularly hard, the ancient workmen had to have a plentiful supply of abrasive for cutting and dressing the stone, and, conveniently, this was also found in almost limitless quantities near Aswan: fine quartz sand. Exceptionally hard, quartz sand, as an abrasive, can even cut quartz itself – the hardest stone the Egyptians used – just as a diamond is abraded by its own dust. This is particularly true of some sand at Aswan, which is said to contain as much as 15 per cent emery, next in hardness to the diamond.





Among the outstanding uses of granite in Egypt are the Valley Temple, standing beside the Sphinx at Cairo, the doorframes of Ramses II's limestone temple at Abydos and the Serapheum at Saqqara, a tunnel mausoleum a quarter of a mile long; it contains mammoth sarcophagi, each cut from a solid block of red or black granite, which weigh some 65 tons each and average 13 feet in length, seven feet in width and 11 feet in height. But it is in the obelisks, and in the statues of the ancient kings and gods, that granite is most striking.

Obelisks today, of course, can be seen in many capitals of the western world. Imposing and lively, their pyramidal tops often sheathed in gold or electrum – an alloy of gold and silver – the obelisks of Egypt were so prized by the Western nations that many were transported at enormous cost to cities like Paris, Rome, London and New York – where obelisks called Cleopatra's Needles stand today (see Aramco World, July-August 1975).

But there are still obelisks in Egypt. One, possibly the oldest of all, is the red granite obelisk of Senwosret I of the XII Dynasty, erected in 1950 B.C. It still stands in its original position at Old Heliopolis, about 20 minutes by bus out of Cairo. And another, uncompleted, still lies flat on its side in the quarry at Aswan, near the First Cataract.

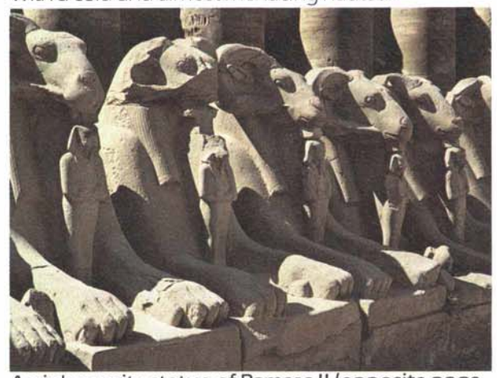
Granite was also used widely for statues of ancient kings and gods; there are perhaps as many statues of granite in the Cairo Museum as of all other stones combined, and great numbers still remain in their original positions at the temples.

Some of these are colossi, like the one of Ramses II in pink granite at his mortuary temple, the Ramesseum, also west of Luxor near the Valley of the Kings. Seated, the figure was 57 feet high and weighed 1,000 tons. It was overthrown, surely by nothing less than an earthquake, and now lies with its six-foot-broad face buried in the dirt. Across the chest from shoulder to shoulder it measures 23 feet.

Even this was not the largest. Ramses II had a still larger statue of himself – in red granite – erected at Tanis in the Delta, the Biblical Zoan, "built seven years before Hebron." It weighed 1,200 tons and, including its pedestal, stood 125 feet high.

Grandeur, however, was but one characteristic of the ancient granite sculpture. For the countless statues are not merely ornamental blocks, vaguely roughed out; they are often fine portraits carved with careful attention to facial likenesses and to such detail as the delicate pleatings of a king's costume – or even his toenails. The details, in fact are so fine that visitors can often recognize the kings and come to know a few of them almost as well as they know the face of Abraham Lincoln. Ikhnaton, for example, with his wry neck, thick sneering lips, long jaw and pot belly could never be mistaken for the urbane, soldierly King Thothmes III.

In studying both the grandeur and the delicacy of these great granite masterpieces, I was also astonished by the numbers of magnificent works that are relatively unknown, at least to me. Once, for example, on a windy spring day, I sought shelter in the Temple of Mut at the far end of Karnak's 140 acres and, walking down the long avenue of ram sphinxes to the Temple, ducked into the first walled court – where I stopped in surprise. Completely surrounding me, and staring grimly at me from all four sides of the enclosure, were 40 black granite figures with women's bodies and lions' heads, taller, even seated, than I. Statues of the lion-goddess Sekmet, they sat there in poses ladylike as well as regal, knees together, feet evenly placed, backs straight and heads erect, looking down their noses with a cold and almost menacing hauteur.



A pink granite statue of Ramses II (opposite page, top, and bottom right) lies overthrown at Memphis. There too is a weather-ravaged alabaster sphinx (far left). In a quarry at Aswan (bottom center), an unfinished granite obelisk has lain waiting for millennia, and at Luxor stone rams (above) ornament the Great Court of the Karnak Temple.

Another lovely stone, although more rarely used, is alabaster – actually, in Egypt, calcite and therefore not true alabaster. Translucent, sometimes even transparent, alabaster ranges from white to the color of rainwater and, when polished and old, looks soft enough to be dented with the finger. In ancient times the best came from the quarries of Hatnub near Amarna in Middle Egypt, but today can still be found in small quantities elsewhere. One Sunday in the mountains above the Valley of the Kings at Luxor, for example, I met two men coming down, their donkey loaded with baskets of alabaster chunks; I found later that they had simply broken the stone out of an outcropping. Because of the difficulty in finding blocks of sufficient size, the Egyptians rarely carved statues or sarcophagi of alabaster; it was more often used for small articles: canopic jars, vases and dishes.

And there are many other quite lovely stones in Egypt too: beautiful quartzite; menacing obsidian; porphyry, fine, hard and shockingly purple, brought from the ancient mountains toward the Red Sea. There is also basalt, black and durable, which was used for the Rosetta Stone on which, 150 years ago, scholars found a key to the hieroglyphic alphabet and almost miraculously recovered the long-lost history of ancient Egypt. All those stones have, each in a special way, a hidden beauty quite apart from the monuments themselves.

Ilene McNulty participated in archeological research and digs in Luxor and Jerusalem, studied at the University of California in Berkeley, and is the author of The Jordan Water Problem *and* The Land of Canaan.

A MOSQUE FOR ROME

WRITTEN AND PHOTOGRAPHED BY
GIAN LUIGI SCARFIOTTI

In 1982, a slim, 131-foot minaret will take its place among Rome's Christian domes, spires and crosses.

The idea of a mosque in the Eternal City – the center of the Roman Catholic Church – is not new. More than 40 years ago, a group of Arab ambassadors put a similar proposal to the Italian government. But because there was opposition, it was not until the 1970's that firm plans could be made. In accordance with the new spirit of ecumenism, King Faisal of Saudi Arabia was welcomed in Rome in 1973 and found that the opposition of the past had evaporated.

Faisal's visit also helped solve the financial problems involved in building a large new mosque. After his visit, Muslim countries and individuals began to donate the estimated $20 million that the mosque will cost.

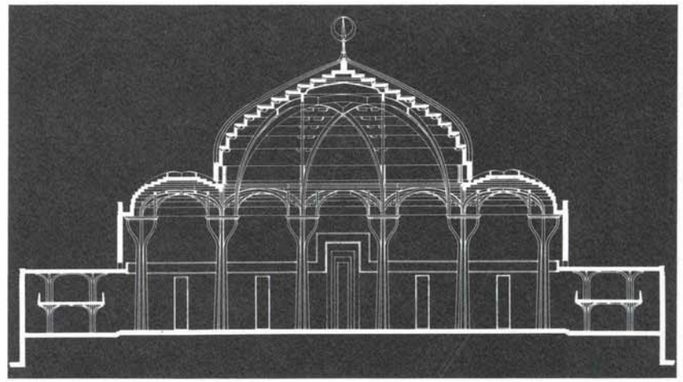
Since then, progress has been rapid. The City Council of Rome provided a site, a seven-and-a-half acre wooded tract at the foot of Monte Antenne. The Islamic Cultural Center of Italy, the project's sponsoring organisation, held an international competition and approved a complex and innovative design submitted by a three-man team composed of Sami Mousawi, an Iraqi architect working in England, and Paolo Portoghesi and Vittorio Gigliotti, two Italian architects. And they began to translate their ideas into blue-prints.

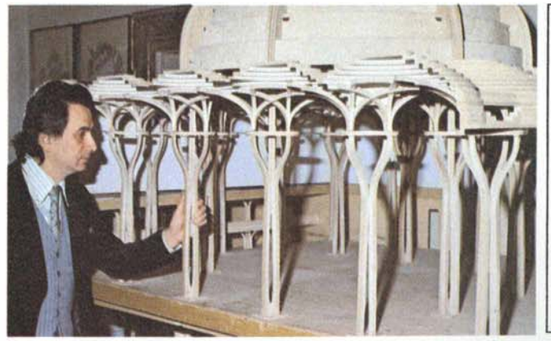
Architecturally, Professor Portoghesi said, a mosque in Rome presents challenges. It must blend with the site and be compatible with the architectural context of Christian Rome. The architects, moreover, had to blend the modern functional needs of the mosque – which will include conference facilities and a library – with both the historical traditions of Islamic architecture and the possibilities opened by modern construction technology.

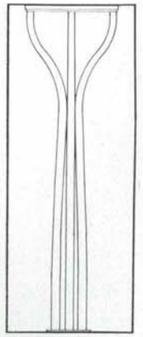
Because a mosque is a house of prayer, Professor Portoghesi said, architects of the "classical period" of Islamic architecture used to divide the mosque into smaller spaces which seemed to emphasize the direct relationships of each individual with God. Orientation to Mecca was the only important physical requirement of the construction. The architects in Rome, therefore, designed a rectangular space, directly connected to a courtyard and broken into a series of smaller spaces by a series of unusual pillars. Four-sided, they narrow toward the top and then fan out again in two graceful curves, suggesting the form of hands opened in prayer. The cupolas they support are formed on interwoven arches – a recurrent theme in Islamic architecture – that intersect in a complicated and beautiful pattern. In another adaptation of traditional Islamic design, Professor Portoghesi and his associates are surrounding the mosque with gardens that take advantage of the rolling topography of the site. The gardens will be planted with palms, pines, cypresses and myrtle hedges, and embellished with basins, fountains, and streams in stony beds – for, in the Koran, "gardens and fountains" are a metaphor for paradise, "flowing with rivers of water incorruptible . . ."

With the design and engineering complete, the Islamic Cultural Center is now awaiting approval of its building permit and hopes to start construction immediately thereafter.

Gian Luigi Scarfiotti, once director of a cement company, is now a successful freelance photographer and journalist based in Rome.







The Man Who Met Tamerlane

WRITTEN BY FRANCES CARNEY GIES
ILLUSTRATED BY MICHAEL TURNER

Ibn Khaldun: the historian who explained history

Rarely does a historian have the chance to interview one of the giants of history. Even more rarely is the interviewer himself a giant, such as the Arab scholar Abu Zaid 'Abd al-Rahman ibn Muhammad ibn Khaldun, possibly the most distinguished historian of Islam and surely the outstanding figure in the social sciences between Aristotle and Machiavelli. Ibn Khaldun was the first historian to attempt to explain history, to discover a pattern in the events and changes of human politics and sociology, a lone voice in the Middle Ages foreshadowing the sociological ideas of the modern era.

The historical figure that Ibn Khaldun met was the brilliant and ruthless conqueror Tamerlane (Timur), last of the great Mongol military leaders. Once captain of a small band in Samarkand, Tamerlane had risen to dominion over Central Asia in 1380, capturing Baghdad and overrunning Mesopotamia in 1393, plundering the Volga region and occupying Moscow in 1395, and taking Delhi and ravaging northern India in 1390. By 1400 he was knocking at the gates of the empire of the powerful Mamluks, who had ruled Egypt and Syria for a century and a half, and in January 1401 was encamped outside Damascus, once the proud capital of the first Arab empire but now, besieged by the Mongols, on the brink of surrender.

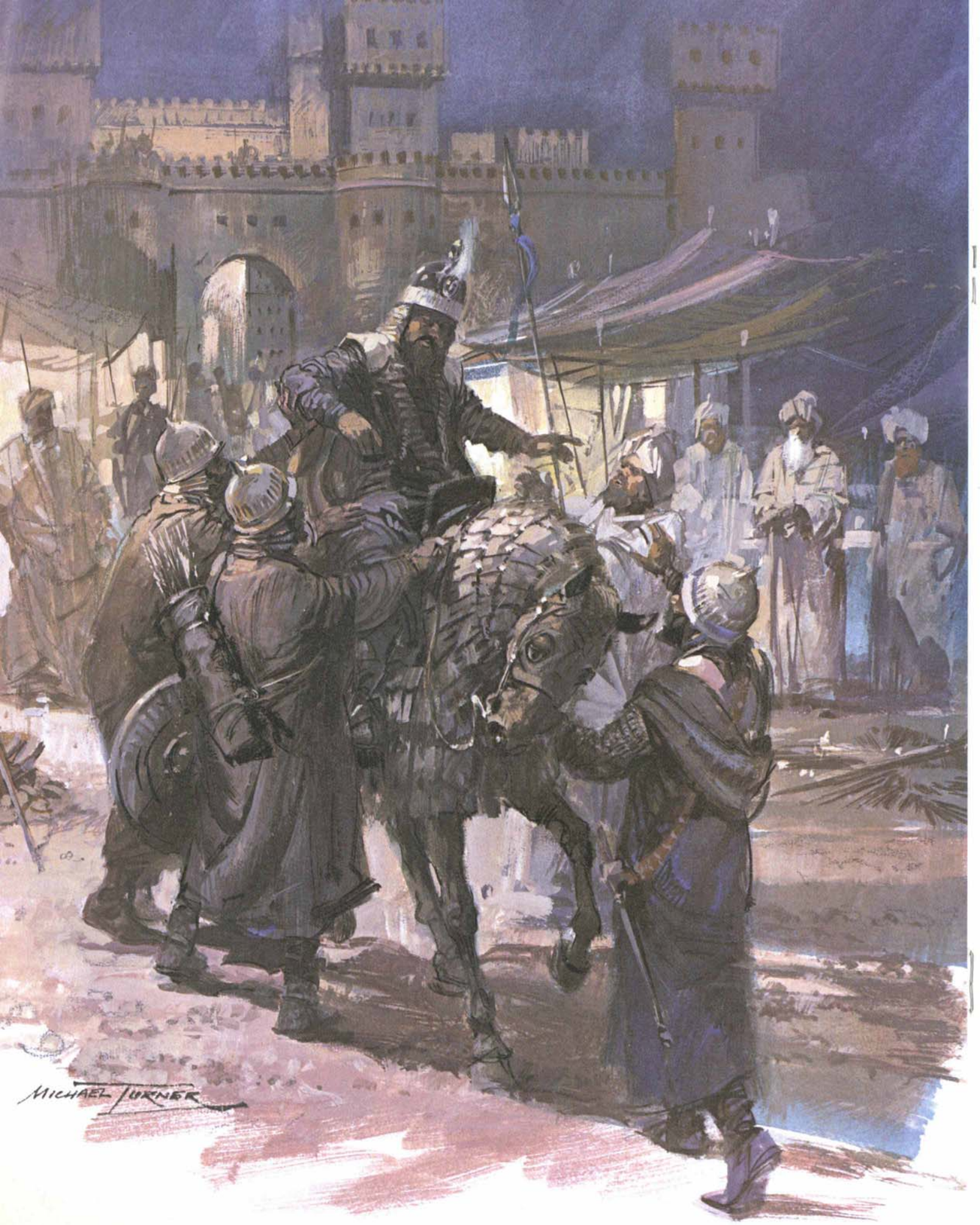
Inside the city walls, a visitor, was Ibn Khaldun, then nearly 70 years old. He had arrived in Damascus a month before with the expeditionary forces of the 13-year-old Mamluk sultan Faraj and had stayed behind when Faraj and his chief aides, learning that revolt had broken out in Cairo, had suddenly departed. Purely by chance, therefore, one of the world's great historians was on the scene as one of the world's oldest cities prepared to surrender to one of the world's most formidable conquerors. In all ways it was a historic moment, and Ibn Khaldun, quite naturally, decided to take advantage of it by paying a personal visit to Tamerlane.

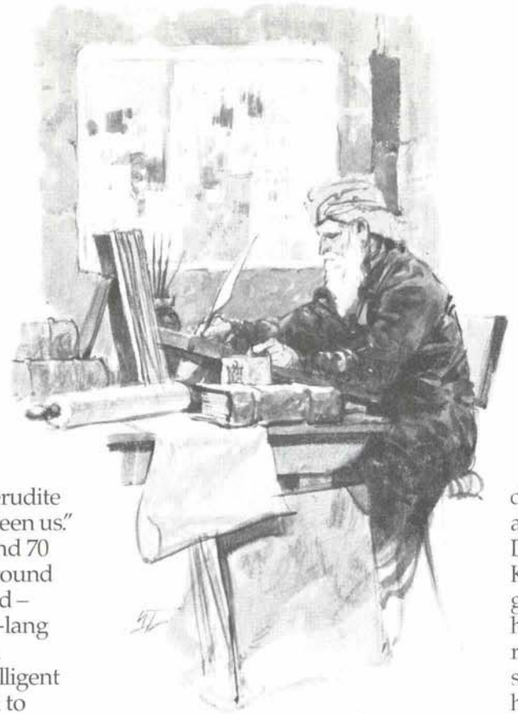
During the siege Tamerlane and representatives from Damascus had reached an agreement whereby the city would be granted amnesty under a governor appointed by Tamerlane. But the agreement had not yet been ratified. Ibn Khaldun decided to visit the Mongol camp while the leaders of Damascus assembled in the Great Mosque to debate, acrimoniously, whether to trust Tamerlane's promises or not. His motives were partly personal – to secure safe-conducts for himself and his associates – but also scientific; he wished to observe and question Tamerlane as part of his research on a project that had engaged him for some time: a history of the Tartars and Mongols.

As the gates, of course, were locked against the invaders, the guards refused to let him through. Ibn Khaldun's departure, therefore, was somewhat undignified for an eminent historian; like Saint Paul 13 centuries before, he was lowered in a basket from the walls. But he achieved his goal: he saw Tamerlane.

"Near the gate I found some of Tamerlane's retinue," Ibn Khaldun later reported in his autobiography, "and the representative whom he had designated to govern Damascus; his name was Shah Malik … I said to them, 'May Allah prolong your lives,' and they said to me, 'May Allah prolong your life,' and I said, 'May I be your ransom,' and they said to me, 'May we be your ransom." Shah Malik offered him a horse to ride, directing one of his men to conduct the scholar to Tamerlane's tent.

There was a brief wait in an adjoining tent; then the historian was summoned into Tamerlane's presence. "As I entered the audience tent, he was reclining on his elbow while platters of food passed before him, which he sent one after the other to groups of Mongols sitting in circles in front of his tent," Ibn Khaldun reported. "Upon entering, I spoke first, saying 'Peace be upon you,' and I made a gesture of humility. Thereupon he raised his head and stretched out his hand, which I kissed. He made a sign to sit down; I did so where I was, and he





summoned from his retinue an erudite jurist to serve as interpreter between us."

Tamerlane was "between 60 and 70 years old," lame from an arrow wound in the right thigh received in a raid – whence the Persian name Timur-lang (Timur-Lame), or Tamerlane. Ibn Khaldun found him "highly intelligent and very perspicacious, addicted to debate and argumentation about what he knows and about what he does not know." (In return, Tamerlane's biographer, who also recorded the interview, reported that Tamerlane was favorably impressed by the historian's "distinguished countenance and handsome appearance.")

Tamerlane opened the conversation by asking Ibn Khaldun where he had come from and why, and the two men plunged into a lengthy discussion covering many topics. Tamerlane was interested in Ibn Khaldun's Maghribi (North African) origin, which the historian chose to emphasize by wearing the costume of the homeland he had abandoned 18 years before. The Mongol general requested that Ibn Khaldun write out for him a description of the whole country of the Maghrib, "its mountains and rivers, its villages and its cities, in such a manner that I might seem actually to see it." Ibn Khaldun promised to comply.

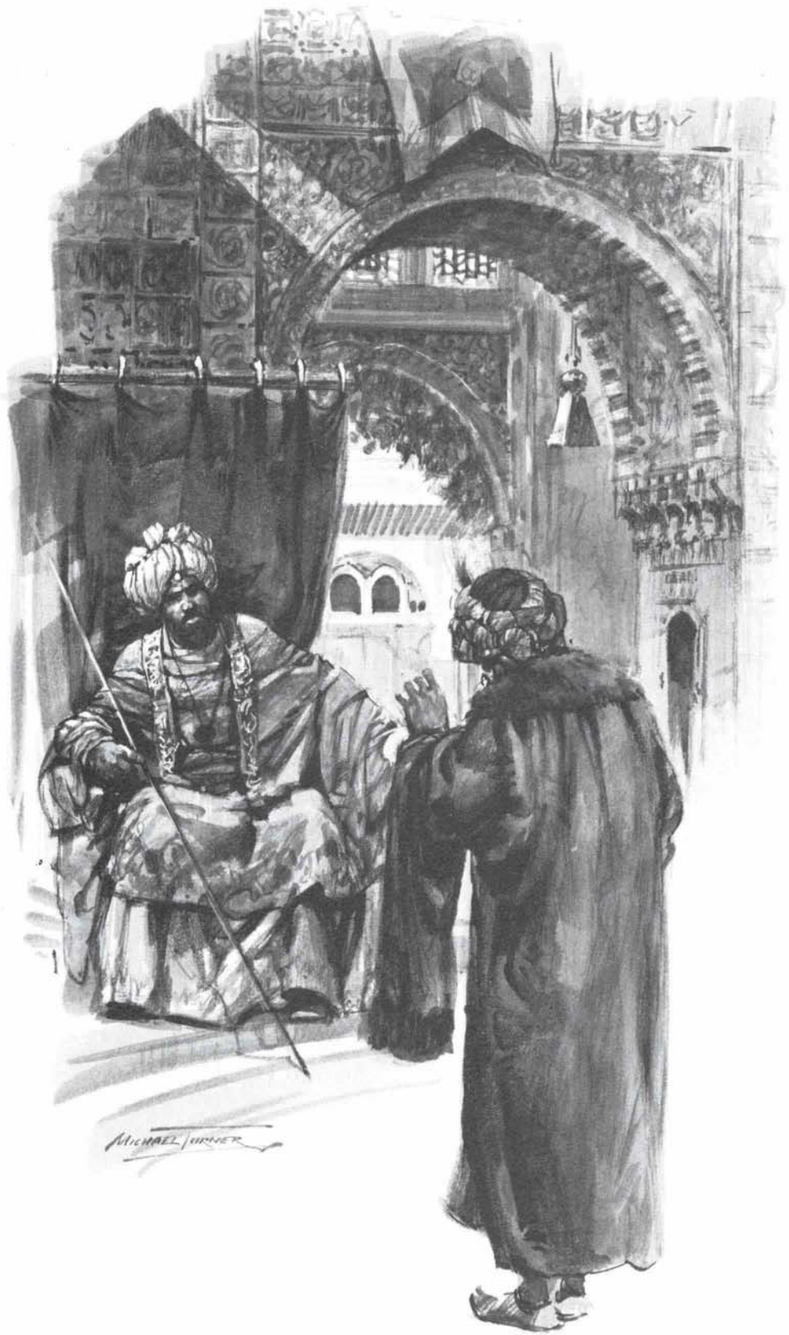
Servants brought a macaroni soup called *rishtah*, to which the guest did honor by cleaning his plate, pleasing his host. Ibn Khaldun explained that he had wanted to meet Tamerlane "for 30 or 40 years," because "you are the sultan of the universe and the ruler of the world, and I do not believe that there has appeared among men from Adam until this epoch a ruler like you." He then introduced his favorite theory, that *'asabiyah*, group solidarity, was necessary for sovereignty, and the greater the number sharing the *'asabiyah*, the greater the power of the sovereignty. "You know how the power of the Arabs was established when they became united in their religion in following their Prophet. As for the Turks … in their group solidarity, no king on earth can be compared with them, not Chosroes nor Caesar nor Alexander nor Nebuchadnezzar."

Tamerlane demurred on a technical point: Nebuchadnezzar was not a king, "he was only one of the Persian generals, just as I myself am only the representative of the sovereign on the throne." Tamerlane had married the widow of the old Khan; the present monarch – his stepson – was with him on the expedition.

It was a strange scene: the aging historian and the savage Mongol leader conducting a historical seminar while, outside the tent, the Mongol troops polished their swords and gazed curiously at the great walls of the ancient city. And the ending was dramatic. As they talked, a messenger arrived to announce that the gates of Damascus had been opened and Ibn Khaldun was a witness as Tamerlane's guards carried the crippled conqueror to his horse, later writing: "Grasping the reins, Tamerlane sat upright in his saddle while the bands played around him until the air shook; he rode toward Damascus …"

That meeting was the first of several. In the next few days Ibn Khaldun wrote the description of North Africa that Tamerlane had requested and, returning to the Mongol camp, presented it to the conqueror – who ordered his secretary to have it translated into Mongolian. But because the military garrison of Damascus had refused to surrender, and had barricaded itself in the citadel, Ibn Khaldun had to remain in the Mongol camp for 35 days while the siege continued. During his sojourn he had several more conversations with Tamerlane, on one occasion presenting his host with gifts – a copy of the Koran, a prayer rug and four boxes of Cairo confectionery – and getting in return passports for himself and his colleagues.

Ibn Khaldun's departure, while less dramatic than their first meeting, was marked by another exchange of civilities. As the historian reported in his autobiography, Tamerlane offered to buy his gray mule, the distinctive riding animal of the Egyptian *qadi*, who was not permitted to walk. Ibn Khaldun replied, "One like me does not sell to one like you, but I would offer it to you



The Muqaddimah

Arnold Toynbee, one of the most distinguished modern historians, called Ibn Khaldun's Muqaddimah *("Introduction to History") "undoubtedly the greatest work of its kind that has ever yet been created by any mind in any time or place." Yet neither the* Muqaddimah, *nor the universal history that followed it, made any impact on European scholarship until the 19th century, when western scholars suddenly discovered that Ibn Khaldun had anticipated many of their theories of social and historical development by nearly 500 years.*

What Ibn Khaldun did was to recognize, before anyone else, that history was "more than information about political events, dynasties and occurrences of the remote past, elegantly presented and spiced with proverbs." History, he wrote, was a "new science," that should uncover an "inner meaning" and find "the causes and origins of existing things and deep knowledge of the how and why of events."

To find this inner meaning, Ibn Khaldun developed a rational, analytical approach in which he discarded clichés and conventional ideas and rejected superstition and unsupported data. Too often, he commented, history had been written without a critical attitude, without thorough research, without a knowledge of politics, custom, civilization and social organization. Figures were exaggerated – armies, revenues, wealth – and stories were accepted without any examination of their probability, or with errors of interpretation.

As one example, Ibn Khaldun pointed to the Arabian Nights *tale about the famous Caliph al-Ma'mun that had been repeated in many histories. "One night, on his rambles through the streets of Baghdad," Ibn Khaldun wrote, "al-Ma'mun is said to have come upon a basket that was being let down from one of the roofs by means of pulleys and twisted cords of silk thread. He seated himself in the basket and grabbed the pulley, which started moving. He was then taken up into a chamber of extraordinary magnificence. Then a woman of uncommonly seductive beauty is said to have come out from behind the curtains. She greeted al-Ma'mun and invited him to keep her company. He drank wine with her the whole night long. In the morning he returned to his companions . . . He had fallen so much in love with the woman that he asked her father for her hand."*

To Ibn Khaldun this tale was utterly unacceptable as history. "How does all this accord with al-Ma'mun's well-known piety and learning, his emulation of the life of his forefathers . . . ? How could it be correct that he would act like one of those wicked scoundrels who amuse themselves by rambling about at night, entering strange houses in the dark, and engaging in nocturnal trysts . . . ? And how does that story fit with the position and noble character of al-Hasan ibn Sahl's daughter, and with the firm morality and chastity that reigned in her father's house . . . ?" Such stories were always cropping up in the works of the old chroniclers, he said, adding that the true historian must distinguish silver and gold from dross and base metals.

Furthermore, Ibn Khaldun wrote, historians must be aware that conditions and customs do not remain constant. Earlier, for example, al-Mas'udi, one of the great historians of Islam, had described the conditions of the world, the sects and customs, the countries and the dynasties — and his work had become a basic reference for historians. But in the intervening centuries the face of the earth had changed. Populations had shifted. Climatic conditions had altered. The Black Death had swept the inhabited world, weakening tribes and dynasties, laying waste cities, emptying villages. In sum, the world had changed, and in his new history of it Ibn Khaldun traced the extent and searched for an explanation of these changes.

History, Ibn Khaldun explained, was information about human social organization. Man was distinguished from other animals by his sciences and crafts; by his need for restraining influence and authority; by his economic activities; and by civilization – in other words, by his need to live in villages and cities with other human beings "for the comforts and companionship and for the satisfaction of human needs, as a result of the natural disposition of human beings toward cooperation in order to be able to make a living." The ability to think, and therefore cooperate, was given to human beings to compensate for their lack of the fangs, claws, horns, thick hides and powerful muscles that protected the animals.

Human social organization, he went on, was necessary to provide food, shelter and clothing, as well as defense against other animals and against man's own natural aggressiveness. And once civilization had been achieved, the authority of a ruler also became necessary as a restraint against injustice and aggression.

According to Ibn Khaldun's theory of history, social organization developed in two fundamentally different environments: desert, or Bedouin, and town, or sedentary. In the first setting, rural people — sometimes nomads, sometimes villagers far from the great population centers – lived a simple existence, restricting themselves to the bare necessities. They were governed by their natural leaders and bound together by 'asabiyah *– group solidarity stemming from blood ties and family traditions – a term traditionally used to describe narrow bias, clannishness and atavism, but used by Ibn Khaldun in a positive sense.*

From this reservoir of civilization, Ibn Khaldun explained, sedentary society developed. As population increased and created a surplus of labor, crafts and sciences developed and, in turn, provided better and more varied food, more comfortable houses, more elaborate clothes and other luxuries. As population increased, so did 'asabiyah, *and with it the* mulk, *the worldly or practical rule of a leader; he at first was merely the* ra'is, *or chief, but his simple political organization anticipated the state proper.*

Social organization, Ibn Khaldun believed, arose from this beginning and followed a predictable cycle in which, over the generations, dynasties rose and fell. Nonetheless, civilization's better qualities were preserved because succeeding generations tended to maintain the civilized customs of the past. In sum, political and cultural life move in never-ending circles of decline and re-birth, but civilization remains. The only occasions when the cyclical movement is interrupted are when certain turning points in history occur; in his own era these were the Black Death and the Mongol invasions.

To this cyclical movement of states and dynasties Ibn Khaldun admitted but one exception: the rule of the first four caliphs of Islam, the successors of Muhammad the Prophet. To Ibn Khaldun the formative period of Islam, pure and unworldly, was the ideal state.

Many of Ibn Khaldun's concepts and attitudes, in fact, had their sources in Islamic theology and philosophy. Yet he was a profoundly original thinker, as well – in many ways the first modern historian. In addition to being the first to take an analytical view of human society, he was the first to perceive the importance of economics in political history, to draw distinctions between the impact of rural and urban life and to stress the role of the city in the emergence of civilization and of the state. His other striking contribution was the idea of 'asabiyah *– group solidarity – as the driving force of political action.*

The Muqaddimah *is the best-known part of Ibn Khaldun's universal history, but the volumes that followed this introduction were great accomplishments in themselves. The first four dealt with the pre-Islamic world and with Arabia and eastern Islam; the last two were devoted to the history of the Berbers and the Muslim dynasties of northwest Africa – the Maghrib – and concluded with Ibn Khaldun's own autobiography. The chapters on the history of the Maghrib – much of which Ibn Khaldun himself had witnessed – are, even today, the most important sources of information about northwest Africa of that era.*

in homage." With that, the two famous men parted, Tamerlane to occupy, plunder and burn Damascus, in contravention of his agreement, Ibn Khaldun to return to Egypt where, five years later, his distinguished career and his eventful life came to an end.

By the time of Ibn Khaldun, the profession of historian was already an ancient one in the Arab world. Even before Muhammad, the *rawi*, a sort of chronicler-entertainer, had enlivened campfires with recitals of tribal genealogies and Bedouin warfare, and with the advent of Islam, and the urbanization it generated, the *rawi* became a scholar. Collecting the old oral traditions – stories, poems, biographies – he wove them into narratives with a broader scope than mere tribal history, and set them down in writing.

At the same time efforts to verify the *Hadith* – the sayings of Muhammad and incidents in his life – were creating another current in Arab history-writing. Because each tradition had to be rigorously authenticated, Islamic historians meticulously traced each tradition back to its source, sometimes by a chain of transmitters: "It is related by A, who says he heard it from B, on the authority of C, that the Prophet said . . ." and so on. Establishing that A, B and C were reliable men, and that, chronologically, they could have known each other, and that C could have heard the words of the Prophet, they founded a critical historical method.

In the 10th century Muslim scholars developed these disciplines still further. Ibn Jarir al-Tabari, for example, combined written sources with oral traditions which he collected in Persia, Iraq, Syria and Egypt, writing annals – history chronicled year by year. And his great successor al-Mas'udi, sometimes called the Arab Herodotus, refined history into a more sophisticated form, grouping events around dynasties, kings and peoples in an encyclopedic 30-volume history of the entire world. In becoming a historian, therefore, Ibn Khaldun joined what was already established as an honored profession.

Ibn Khaldun's contribution was, essentially, one great work: *Kitab al-'Ibar* ("History of the World"), which he started in 1375. Then in his 40's, he had until that time produced little in the way of writing beyond letters, poetry and a few essays written for friends and patrons. Instead he had lived history, as he continued to do all his life, as a participant in public affairs.

Given his family background, a public career was only natural. Originally from southern Arabia, Ibn Khaldun's ancestors had gone to Spain in the early years of the Arab conquest and had been political and intellectual leaders there for five centuries, fleeing to North Africa in 1248 just before Seville fell to the Christian reconquest. His grandfather and great-grandfather had held positions of dignity and importance in Bône and in Tunis at the court of the Hafsid rulers. Ibn Khaldun himself grew up during a period of political upheaval, when North Africa was torn with struggles between the Hafsids of Tunisia and the Marinids of Morocco, and sometimes between factions within the two dynasties. He was married, moreover, to the daughter of a Hafsid general and, at the age of 20, held his first government office: he was "Master of the Signature" at Tunis, councillor to the Hafsid ruler.

Later, when the Hafsids showed signs of collapse, Ibn Khaldun, in the first of many timely shifts of allegiance, left Tunis and went to Fez, capital of the rival Marinids. That proved to be an unlucky decision; the Marinids, suspicious of his Hafsid connections, threw him in prison, where he languished for two years, until the reigning Marinid died and he was freed. In Fez, however, where he stayed for several years, he was able to both observe and take part in the political chess games which he later described in his history: rulers becoming figureheads controlled by their ministers, ministers assuming the role of kingmakers, selecting their favorite candidates from members of the dynasty and backing them. Ibn Khaldun himself played the game with enthusiasm and considerable skill.

In 1362, seeing that the government in Fez was becoming increasingly unstable, Ibn Khaldun departed for Granada, the only Muslim state of importance left in Spain, whose ruler, Muhammad V, and prime minister, Ibn al-Khatib, he had befriended earlier when they were in exile in Fez. Two years later, he was entrusted with an important diplomatic mission to the Christian king Pedro the Cruel of Castile in his capital of Seville. Pedro was so attracted by the personable young ambassador that he tried to induce him to join his entourage, promising to restore confiscated Khaldun family estates in Seville.

Ibn Khaldun's brilliance and personal attraction, however, had drawbacks. In Granada they caused a bitter rivalry to develop between Ibn Khaldun and the prime minister, Ibn al-Khatib, who was jealous of the newcomer's growing influence. As a result he had to leave suddenly, returning to North Africa to become prime minister to the Hafsid amir of Bougie (Bijaiah). Later Ibn Khaldun joined the amir's cousin Abu al-'Abbas when he seized power, and then, when he fell out of favour with Abu al-'Abbas, fled again, this time to Algeria.

The next several years involved endless political tightrope-walking and narrow escapes. Hiring out as an agent among the Arab tribes which controlled the interior, Ibn Khaldun worked first for the sultan of Tlemcen, a new state located in northwest Algeria between the Hafsids and the Marinids, then against the same sultan and for the Marinids. Twice he tried to flee to Spain. The first time he was intercepted, the second time Granada was persuaded to extradite him. Yet he managed to survive.

In 1375 Ibn Khaldun and his family retired to a castle near Oran where, under the protection of the powerful local chieftain, he spent three peaceful years working on his history of the world. He finished the first volume, the *Muqaddimah* ("Introduction to History"), in 1377, a work drawn from his reflections on the events that he witnessed and took part in, and which now almost wrote itself. As he described it, "the words and ideas pouring into my head like cream into a churn, a finished product, synthesized and homogenized."

For the main body of his projected history, however, Ibn Khaldun needed access to libraries. Applying to Abu al-'Abbas, the Hafsid amir, Ibn Khaldun won permission to settle in Tunis to teach and study. Unfortunately, Abu

al-'Abbas, out of fondness for his company, or suspicion of his capacity for intrigue, insisted on taking Ibn Khaldun along on his military expeditions, a development that the historian, now middle-aged, found taxing and uncomfortable. Eventually, therefore, he moved to Cairo where, at last, he found a safe, permanent residence.

Under its Mamluk rulers, Cairo was then a prosperous and beautiful city and Ibn Khaldun accepted with pleasure a professorship at al-Azhar University. There, and later at two other institutions, he lectured on Muslim law and traditions; he also gave courses on the *Muqaddimah*, the first volume of his universal history, which had already achieved the status of an independent work.

He was not, however, through with politics. When he had been in Cairo a year, Sultan Barquq appointed him Chief Malikite Judge of Egypt, a position that carried enormous prestige, but entailed dangers. Himself incorruptible, he was soon in conflict with corrupt notaries, clerks, and lawyers. And in 1389 a military junta overthrew Sultan Barquq and demanded that Ibn Khaldun, the chief *qadi*, validate the new government. Joining with other legal authorities in Cairo, Ibn Khaldun pronounced the coup legitimate. But then, to the embarrassment of the judges, Sultan Barquq made a comeback.

For Ibn Khaldun this was a difficult moment. The Sultan had not only appointed him chief judge but had also intervened with authorities in Tunis and won the release of Ibn Khaldun's family, who had been held by the amir when the historian moved to Cairo. Ibn Khaldun, however, had not lost his capacity to survive. By writing a poem asking the Sultan's pardon and stating that he had acted under duress, he was not only restored to favor, but once more appointed Chief Judge.

It was during this period in Cairo that Ibn Khaldun was stricken with a personal calamity: his family, on their way to join him, were drowned when their ship was wrecked in sight of the harbor of Alexandria. "The tragedy was great and the sorrow overwhelming," Ibn Khaldun wrote later. "I felt like giving up the world . . ." Instead he left Cairo and made the pilgrimage to Mecca.

Despite his difficulties, Ibn Khaldun continued to live an active life. After Sultan Barquq's death he accompanied the sultan's heir Faraj to Damascus – where he met Tamerlane – and, after his return to Cairo, served as a judge for four more terms. His last appointment came in March, 1406, only a few days before his death.

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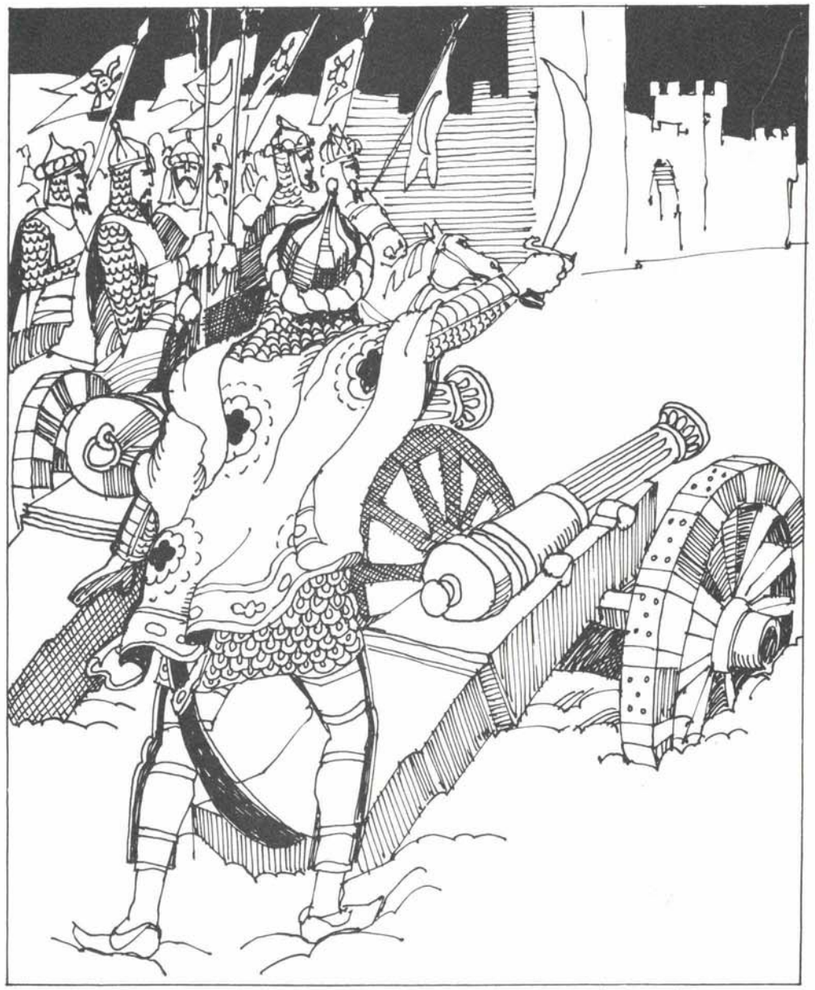
Whither the Weather?

WRITTEN BY WILLIAM J. GRISWOLD
ILLUSTRATED BY MICHAEL GRIMSDALE



"... unseasonable rainstorms bogged his cannon down ..."

The impact of climate on the history of the Middle East

In the mid-1970's, weather – or, more accurately, climate – suddenly seemed to emerge as a new factor in the history of mankind. In the wake of summer droughts in Europe, heavy rains in arid Saudi Arabia, a disastrously dry winter in the Rocky Mountains, savage blizzards in New England and the deadly spread of deserts in Africa, meteorologists and others have begun to crank out articles, books and novels on the subject of climate. Some writers, openly alarmist, predict that a new Ice Age is upon us, while others, looking to sales, darkly blame nuclear explosions or hint at imaginative conspiracies. Even the more restrained observers suggest that changes in weather patterns will have a disturbing impact on modern history.

Actually, weather has always played an important role in history. On August 20 in A.D. 636, for example, a perverse change in the weather helped determine the outcome of a battle in Syria that, in turn, became a watershed in the history of the Middle East.

The battle, which took place on the Yarmuk River near the Golan Heights in southern Syria, pitted the armies of the Byzantine emperor Heraclius against thousands of Muslim Arabs, and the outcome – a resounding Arab victory – reshaped the known world. For Arab victory that day erased forever the power of Byzantium in Syria, and opened the way for the subsequent conquest of Egypt and all of North Africa by the armies of Islam. Eventually the victory at Yarmuk also opened the eastern Mediterranean to the Umayyad dynasty, led to the conquest of Spain and, still later, to three sieges of the greatest Christian city: Constantinople. The memory of the glorious day at Yarmuk would even echo in the 20th-century Arab struggle against colonialism.

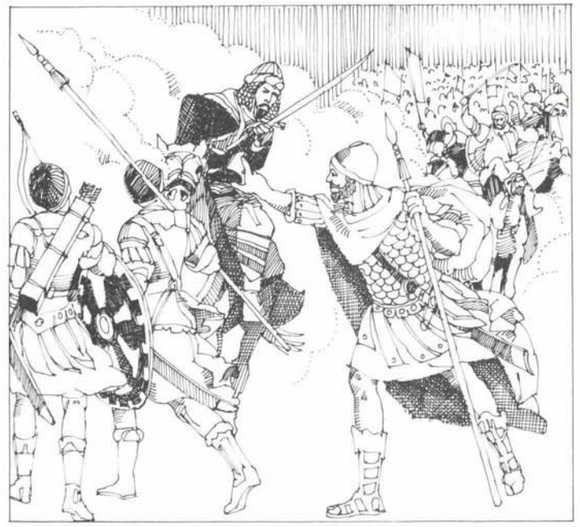
Yet for all the brilliance of the Arab commanders at Yarmuk and the heroism of the Islamic warriors, a key factor in the battle of the Yarmuk River was a change in the weather. Blowing with gale force, southeast winds on that August day drove clouds of sand and grit into the eyes of the Byzantine soldiers, blinding them to the attack of the Arab warriors, who had the wind at their backs, preventing them from launching a counterattack and rendering the usual tactics of the battle-proven Byzantine commanders useless. Their troops turned to flee, leaving the field and the victory to the Arab warriors of the new faith.

Such perversity of weather is not uncommon in the history of the Middle East. In 717 the Umayyad dynasty, bent on conquering Constantinople, was turned back as much by the fickleness of miserable winter weather as by the Byzantines' secret weapon – "Greek fire" – and the great rampart system surrounding the city. In 1098 unseasonable cold nearly thwarted the first European Crusaders' siege of Antioch, and in 1529 one Ottoman sultan – Suleiman the Magnificent – turned back from Vienna after unseasonable rainstorms in the Danube Valley bogged his cannon down in the mud. Half a century later the Christian Holy League defeated the Ottomans in a naval battle at Lepanto, but could not follow up their advantage because of a severe storm on the morrow of the victory.

Commanders of those periods, of course, had no weather satellites to help them time their campaigns, but they were, nevertheless, acutely aware that weather could have catastrophic effects on their plans and they did what they could. From earliest times, they attempted to placate the gods, sought the opinions of soothsayers and astrologists, and called upon various holy men to ascertain weather conditions. But such activities provided only psychological solace, not practical help. Until the technology of our own time, developed for the most part since World War II, military commanders could do little more than hope that the weather would favor them, or philosophically accept the results. The same was true of farmers too; even more than soldiers, farmers knew the impact of weather. But they had no remedies either.

Today, modern science is gradually changing this state of affairs. The scientific revolution has not only provided a rational understanding of curious and perverse weather changes but, by averaging out such changes, discerned predictable patterns of climate. Gathering together barometric, temperature and rainfall data in many parts of the world over many decades, meteorologists have determined that climate – the long-term accumulation of weather changes – occurs in definable patterns. If carefully analyzed, these patterns may foretell what the inhabitants of a certain region can generally expect over a period of days and even months. Such data can also give insights into the climatological probabilities for the future – perhaps even years ahead.

"... the savage 1977-1978 winters."



"A key factor in the battle of the Yarmuk River was a change in the weather."

Recently, for example, meteorologists have cautiously suggested that the relatively fine climate of the past 50 or 60 years on the North American continent may be abnormal and passing and that the climatic patterns of the atmosphere may be drastically changing. These suggestions – which led to the spate of articles, books and novels on climate – were based on changes in the accustomed patterns: the rains in Saudi Arabia in 1976, a dry winter in the Rocky Mountains in 1976-1977, severe cold spells that same year in the eastern United States and, for some areas of North America, the savage 1977-78 winters. Such changes in the weather may indeed presage a distinct climatic alteration in the northern hemisphere. But they are not the result of atomic testing or infamous scientific conspiracies; they are natural climatic patterns forming in response to the constant motion of the earth's atmosphere.

The important fact to remember is that, unlike the political sphere, the atmosphere is truly one world: a unity of temperature changes, low pressure and high pressure areas and wind variations which circulate from west to east over the northern half of the globe. As British meteorologist J. M. Craddock put it, "Climate is made up of super-imposed fluctuations of the general atmospheric circulation, and not of independent random variations." By quantifying the fluctuations, storing the data and processing it in computers, meteorologists – after certain breakthroughs – may soon be able accurately to describe general climatic patterns and – an exciting possibility – predict the extent to which we can make demands on the environmental system.

Climate, together with human demands on the environment, has already had an immense, if not always recognized, impact on the history of the Middle East. Herdsmen, for example, have let their goats and sheep overgraze Middle East pasture lands for millennia, and both armies and priesthoods have stripped such regions as ancient Anatolia and Syria of their forests. Combined with climatic changes over the same periods, such practices transformed many areas – where civilizations once flourished – into useless deserts.

Where exceptional individuals learned or foresaw impending changes in climate and were able to take action, the results were quite different. Noah, for example, was alerted to the Flood – possibly a result of storms in the region of Iraq with the addition of melting snow from the Caucasus Mountains – and miraculously understood what his neighbors obviously did not: that such climatic variations can change men's lives – and in a remarkably short time.

Another example – from both the Bible and the Koran – is Joseph, who laid aside seven years' worth of food in Egyptian granaries in preparation for a coming period of famine. Joseph implicitly recognized the decreasing productivity of the soil resulting from a discernible climatic variation: the slow but inevitable course of desiccation – similar to that now taking place in Africa.

Both Noah and Joseph, however, were exceptional. Their contemporaries, on the other hand, were not. Like Californians who continue to build homes on the unstable brinks of canyons, they stubbornly refused to believe that the changes in climate were anything more than temporary aberrations. Noah's people stayed where they were and Joseph's brethren acted as nomadic peoples always do. Faced with the fact of desiccation, and not realizing how migration complicates matters – newcomers are seldom welcome during famines – they moved on. Existing in any case on a narrow margin of economic subsistence, nomads normally migrate from the drier regions to the more verdant and when extraordinary variations in climate occur, mass movement toward more fertile regions is inevitable – with results that are politically devastating. The Persian-Turanian enmity, lasting for centuries and clearly articulated in the 10th-century epic *Shah-name* (The Book of Kings), may be an example of this; it seems to have had its roots in just such extraordinary pressures by the nomadic Turanian cultures on the urban Persian civilization. Because climatic variations apparently dried up their normal grazing grounds, various Turkish tribes east of the Oxus River pushed west, crossed the natural boundary of the river, and swarmed over portions of pre-Islamic Persia's urban culture.

At the other end of the climatic spectrum, excessively moist years in normally vegetated areas can create abnormally rich nutrients for mosquitoes, grasshoppers or rodents and, as a result, lead to deadly plagues. In the Middle Ages the fertile oasis of Damascus in Syria had a continuing reputation for being plague-ridden, probably malarial. And although an abundance of water is of course vital to agriculture, it can also result in the spread of liver flukes which carry the disease called bilharzia, a problem in Egypt and some other Middle Eastern countries.

The most common misery and the worst suffering attributable to unexpected climatic variations are those which arise when climatic change alters vast agricultural regions generally considered fertile – the so-called "breadbaskets". Every pre-modern Middle East power had its major source of food: the Byzantines' was Anatolia and Syria; the 'Abbasids had the lower Tigris-Euphrates region plus Khurasan and Bukhara; and the Ottomans possessed Egypt. But there was also an inherent political danger in such agricultural dependence, and it eventually materialized. When climatic patterns changed, the farmers, unable and unwilling to migrate, could be provoked into rebellion against the established authorities. Nomads could move on, but for sedentary peasants, flight from their ancestral homes was simply not an acceptable alternative.

"'the land is unpopulated and is not productive…'"

One example of political upheaval possibly rooted in climatic variations is the Jelali revolts of the late 16th century in Ottoman Anatolia. Following a period of several decades of poor growing seasons and severe desiccation, the Anatolian peasants rebelled for more than a dozen years, striking terror into the Ottoman government and almost severing Anatolia from the Empire.

Admittedly, the causal relationships between the desiccation of Anatolia and the Jelali revolts cannot be proved conclusively. It is exceptionally difficult to prove a relationship between climate variation and social change in early periods of history. This is partly because present technical expertise cannot determine the actual climatic patterns for former times and partly because historians cannot accurately assess contemporary reports on the events. Historians do know something about the Anatolian peasants of the late 16th century, but the evidence is limited, nevertheless, to reports from foreign travelers and resident consuls, plus a few Ottoman documents. And even with reports from witnesses there are difficulties in establishing accurate factual guidelines. How, for example, can historians evaluate this statement of a 17th-century Venetian consul on viewing the Anatolian plain: "… the land is unpopulated and is not productive …"? Or the writing of an English traveler: "… a man may walke many a mile through the Turkes Country and find neither men nor houses…"? Obviously, something about the region appeared strange, or the Venetian and the Englishman would not have commented. But it is still impossible to say whether a drop in productivity and population derives from climatic conditions, governmental heavyhandedness, or some other cause. Or to say definitely that peasants migrate because changes in the climate, rather than politics, have forced them to move.

In attempting to prove that climate is a cause, research in the works of modern historians of the Middle East is of little help. These writers hardly ever identify climatic conditions, even when they are mentioned in the sources used. Philip Hitti, for example, whose standard *History of the Arabs* covers 1,400 years and utilizes many of the great Arab sources and chroniclers, mentions important weather-related issues only a dozen times or so. Specialized works, like Guy le Strange's *Baghdad During the Abbasid Caliphate*, make some remarks about the floods which inundated the 'Abbasid capital at least once every decade for a period of 400 years, but they are tantalizingly few.

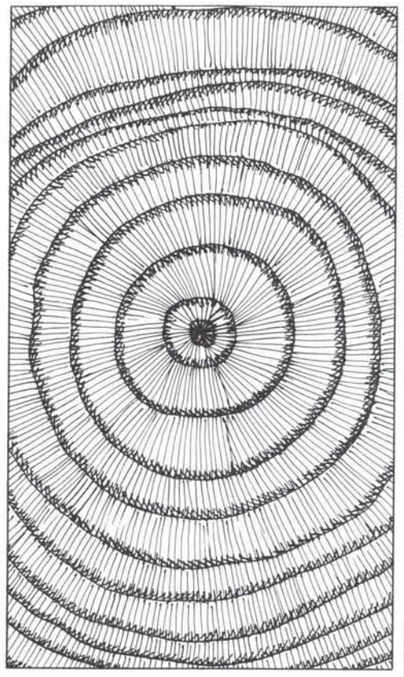
Nevertheless, the possibility that climate and political upheaval are linked remains a fascinating hypothesis and certain historians of the Arabs have begun to explore it. Professor William Tucker of the University of Arkansas has studied the effects of climate in the records of Mamluk Egyptian history and learned that historians and chroniclers of Egypt from 661 to 1500 often mention the occurrence of abnormal floods and famines. He has also come up with information about heavy rains in Cairo in the 1290's and 1340's, and about excessive droughts in the years 1304 and 1427; he points out that climate-related information clearly exists in the Arabic historical writings of al-Tabari, Ibn al-Athir, al-Maqrizi, and others.

In addition, modern meteorology is beginning to offer methods and tools which, when perfected, will tell historians much more about the past. Specialists called paleoclimatologists – historians of the climatological past – have begun to chart various climatic patterns which have affected human behavior since early times. And exact knowledge of wind patterns, as they circulate around the earth, may explain some developments of the past. Such studies have already shown that certain mountain ranges act as huge dams which funnel the air, and life-giving rain, into some regions, but force it away from others – thus creating deserts and aridity. Technology, of course, can make the desert bloom – as it has in Saudi Arabia – but the desert, because of the physical structure of the globe, will remain a desert.

Meteorologists, moreover, can now chart Middle East climatic patterns over periods of decades. With the aid of computers, they can establish trends of the past, based on certain repetitive patterns. Knowledge of shifting high and low pressure areas, which provoke unexpected changes – expansion of the desert in northern Africa, dry winters in Anatolia, rain in Saudi Arabia, and so on – can, when put in the context of proven weather data from many world-wide centers, establish a configuration from which climatologists can deduce past patterns of "normal" climatic modes. From this "norm" they can better under-

"Noah understood what his neighbours did not…"

stand the variations and deviations which cause the "weather changes" which affected the people of at least the recent past.



"Dendrochronologists can show periods of heavy rain or desiccation . . ."

The paleoclimatologist remains forever stymied, of course, in his quest for perfect understanding of the patterns of ancient times. He simply cannot obtain accurate climatic data from the past. He must rely on a variety of other related technologies. One important study is that of glacial changes, especially in those areas where changes in glacier size can be verified.

The best examples of this are the glaciers of western Europe: especially the Rhône region and the Grindelwald Glacier, which has been written about, sketched, and – more recently – photographed for the past 300 years. On the basis of such research, paleoclimatologists can say that Europe suffered a "Little Ice Age" from about 1550 to 1850, a climatic change which probably affected Europe's society and economic history every bit as much as the gold and silver newly arrived from the Americas or the collapse of the Ottoman Empire.

Another important study is the direction, strength and changing patterns of the monsoons, particularly those in the Arabian Sea. From this study, scholars expect to deduce how these variations, over a period of centuries, forced changes in trade relationships, weakened the naval operations of some powers and strengthened those of others. In recent years, scientists have also improved their ability to learn about the relative dryness of regions in the historical past by analyzing tiny bits of pollen found in bricks, mortar or tombs. And today they are on the verge of a breakthrough by which they may be able to provide chronological data: year-by-year information which could verify assumptions about climate changes in the past. By adapting the carbon dating methods of archeologists, they may soon be able to unlock the secrets of the climatological past.

Dating organic materials has, since Willard Libby's discovery of an accurate way to use the half-life of carbon-14, helped to establish a reliable chronology of some very ancient objects: pieces of ships or the age of grains of wheat. And today dendrochronologists can not only date various pieces of wood – by counting the rings formed in tree growth – but can also show periods of heavy rain or desiccation by measuring and analyzing the rings. Professor Peter Kuniholm of Cornell University's Department of Classics, for example, has made several trips to Anatolia, where he has not only established an absolute annual chronology in trees for the past seven centuries, but now can show, with some accuracy, the amount of water available for trees during certain periods.

This opens an exciting possibility: that, given more tree rings and more verifiable information from the rings, science may be able to match the social changes of a period, known from the contemporary written records, with discernible periods of climatic variation. Applied to the Jelali rebellions of Anatolia, this method would compare tree-ring data with the reports of travelers and consuls and with the Ottoman records and either verify or disprove the hypothesis that a 20-year climatic change was at the root of the rebellion. Such accurate dating might also ascertain that certain regions of Anatolia suffered severe drought for more than a decade, thus providing the impetus for the conservative Anatolian peasants to leave the land and, in desperation, take up arms in rebellion against the sultan's government. It could even disclose whether, in other periods of Anatolian history, similar climatic variations changed social conditions so drastically that a unique Anatolian personality developed as a result of these forces.

Still another method of applying meteorology to the study of history in the Middle East has come from the fertile imagination of a group of paleoclimatologists who are often considered mavericks by their colleagues. One of the most exciting of these is Professor Reid Bryson of the University of Wisconsin, who has suggested the use of modern patterns of climate as guides to our understanding of the climatic patterns of the past.

Assuming, as all meteorologists do, that the world of climate is one, or that, as Stephen Schneider says in *The Genesis Strategy*, "... a kick in one spot of the world will cause a bulge in another," Bryson reasons that science should be able to find enough data in the past to ascertain that patterns similar to those of the present existed then. Taking the example of the great Mediterranean Greek civilization of Mycenae – which abruptly fell about 1200 B.C. – Bryson established some guideposts from relatively verifiable data of that same historical period but in different parts of the globe: an emigration of people from Libya to Egypt, a series of horrendous floods in Hungary, an abnormal rising of the Caspian Sea, and so on. Why did the Mycenaean people leave? *Was* it an invasion of Dorians from the north?

Bryson suggests that the central Greek drought pattern of 1200 B.C. may have been analogous to another drought in the same region during the winter of 1954-1955. He then proceeded to toy with this hypothesis: that Mycenae, like the Greek mainland of 1954-1955, suffered a period of dryness; that under such circumstances it would have been difficult to sustain agriculture; and that given the social conditions and alternatives of 1200 B.C., the drought, rather than a Dorian invasion, forced the Mycenaeans to move away.

For historians of the Middle East, the technique of analogous climatic variations might explain many mysterious events. It might establish more accurately the cause of the overland movement of masses of people from the Far East to the West in successive waves, vast dominions tripping over one another from the fifth-century Huns to the 11th-century Seljuk Turks and the 13th-century Mongols. Even more importantly, this approach might offer advance warnings of climatological changes that would demand political and humanitarian cooperation. A good example of this is the recent desertification of the Sahel in north central Africa, where overgrazing plus a variation in climate patterns produced almost six years of famine conditions. Alerted in time, governments might have imposed restrictions on grazing, fenced off lands, or taken other steps to avoid or at least mitigate this ecological disaster.

Obviously, climate will vary whether the world does anything about it or not. But by anticipating the variations, and acting in time – as Joseph did in Egypt and as modern science is learning to do today – man might ease the burdens that harsh climate and difficult terrain have historically imposed upon him.

"... changing patterns of the monsoons ..."

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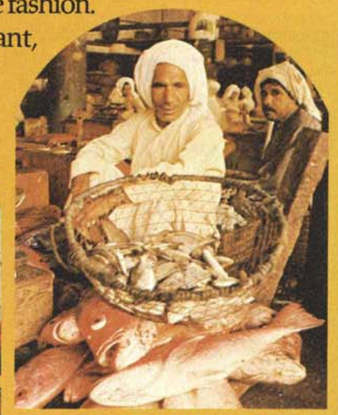
The Monkey at Marrakesh

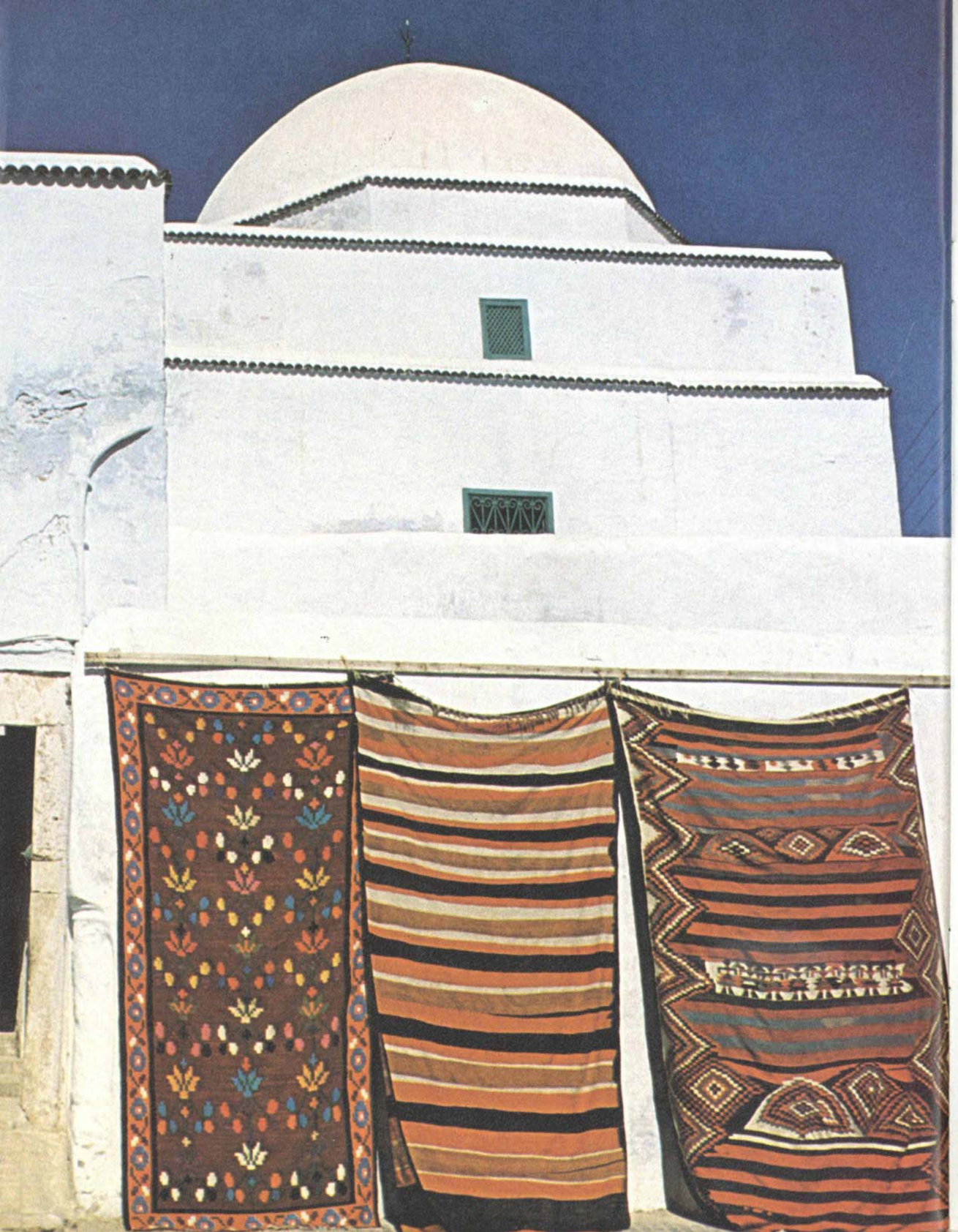
From research and travel, I've found that Arab *suqs* –or bazaars–are much more than colorful tourist attractions. They are the heart of economic life in cities from Cairo to Muscat and the one place where visitors can get a clear view of local life: the customs, the food, the laughter and the fashion.

They're not always elegant, true. But they're real.



WRITTEN AND PHOTOGRAPHED
BY CHRISTINE OSBORNE

'What matters is not the bargain but the bargaining'



Suqs, unquestionably, are colorful. I once, for example, had my fortune told by a monkey in the *suq* in Morocco's Marrakesh. I was still new to the world of the *suq* then, so when the monkey, scrambling about the tiny stall, picked three quills from a jar I had to ask the monkey's owner for help.

"Each quill represents an important part of your life: health, wealth and love," the man explained.

"But what do they mean?"

"They mean you will enjoy blooming health, marry someone very rich and bear him 10 children," he smiled. "That's five *dirhams*."

"Five? No, two."

"Two? Then you will never marry."

"Three then."

"Three, yes." He smiled again. "But only five children."

There, briefly, was my fortune and an essential point about the *suq:* you can bargain for anything. I know it is a cliché but it is still a fact; as one writer put it, "what matters is not the bargain but the bargaining." (See *Aramco World*, May–June 1965)

That writer, as it happens, was talking about the Damascus *suq*, not the one in Marrakesh. But the principle is the same throughout the Muslim world. In Isfahan, for example, I debated three days on the price of an old ivory miniature, then, enroute to the airport, stopped at the *suq* again and had the taxi wait. The owner was so impressed by my persistence that he immediately cut the price in half.

But the bargaining is just part of the colorful life down there in the small, narrow streets, the porticoes and shady squares. To put it another way, the merchants are often more interesting than the merchandise. In Cairo's Khan Khalili *suq*, for instance, there was a perfume merchant the size of a camel, but he had hands like a Swiss watchmaker and had spent 40 years delicately blending sandalwood and attar. And in Tripoli there was Azzam abu Majid Hassun. He was 12 years old and already a master engraver.

In my travels I have visited most of the

major cities of the Arab East, North Africa and Iran, including Tehran, Shiraz, Isfahan, Beirut, Tripoli, Manama, Kuwait, Doha, Salalah, Dubai, Buraimi, Muttrah, Muscat, Tunis, Sfax, Sousse, Kairouan, Nabeul, Djerba, Tangier, Rabat, Marrakesh, Ifrane, Fez, Tripoli, Cairo, Aswan, Luxor, Amman and Damascus. And inevitably I've found that the real pulse of these cities is in the *suq:* the endless beat of buying and selling and the endless rhythm of craftsmen at work—cobblers tapping on soft leather, tailors working gold threads into embroidered belts and, up dark stairways, women weaving carpets, their fingers flying quickly over high-warp looms.

Suqs, furthermore, are often beautiful. There is the Muttrah *suq* for example, spread along a bay in the Sultanate of Oman, with its memorable fragrance of spices, brine and incense and its odd jumble of merchandise: coffeepots and television sets sharing shelves with sharkskin shields and rows of digital watches.

My favorite, however, is the huge *suq* in Marrakesh, a labyrinth lit with shafts of sunlight and heaped with mounds of embossed leather hassocks, tangles of Berber jewelry and cascades of shimmering kaftans spilling over, it seems, into the Jma el-Fna, a restless square swarming with traders, shoppers, performers and tourists.

Marrakesh is especially lovely when the sun sets behind its pink ramparts and streams of people pour into the square while blue-turbanned Saharan musicians pound goatskin drums, boy acrobats fling themselves skyward and my monkey-man waves his jars of colored quills at customers eager to hear their future. It is unforgettable: traders drinking mint-tea and eating mountains of yellow cous-cous in open air cafés, women in long jellabahs crossing the square with averted eyes, and, evening after evening, a blind man selling sprigs of jasmine as he threatens and cajoles his way through the tides of people pushing, laughing and bargaining.

My reactions to *suqs* are not, of course, unique; historically *suqs* have always delighted foreign visitors. In 1664, for example, a young French traveler named de Thevenot witnessed a parade of craftsmen from the *suq* in Aleppo and subsequently wrote an account suggesting that he was fascinated. It included, he wrote, shoemakers wearing cone-shaped hats and carrying muskets and swords; eight men carrying a float on which two little boys were making sandals; and a company of confectioners carrying castles of sugar on their heads.

Next, de Thevenot said, came the "gold-spinners," two apprentices on a float actually spinning gold as they were carried through the streets. There were also bakers, tailors and dyers—with an apprentice dyeing cloth red before the eyes of the crowd—and, in order, coffee sellers, butchers, silk-weavers, saddlers, carpenters, gardeners, smiths and barbers.

The parades, in those days common in many Middle Eastern cities, were not simply entertainment. They were held to demonstrate the importance of commerce and crafts in the economy of the great cities of those regions: Marrakesh and Fez in North Africa, Cairo and Damascus in the Middle East, Isfahan and Shiraz in Iran—all part of the extensive Muslim world. All these cities—and in fact every urban center of any size—had an important *suq* during the Middle Ages.

This economic importance was a result of the spread of Islam. Because the Muslims unified a huge area—and began to strike and standardize their own coins (see *Aramco World*, July-August 1978)—crafts expanded to accommodate a newly flourishing trade. In Cairo, for instance, the *suq* offered 450 distinct crafts and services.

It was during this period, I gather, that the *suqs* assumed the pattern I had seen everywhere, with all the artisans of a particular craft grouped together: goldsmiths and silversmiths, shoemakers, bakers, carpenters, dyers, tailors and so on.

It certainly makes sense. For one thing, all the artisans in a particular craft used the same raw materials. For another, it allowed the buyer to compare price and quality with very little trouble. It also made the job of *muhtasib*, the inspector, (see *Aramco World*, September–October 1977) much easier and, an additional reason, it was a pleasant socially. Men plying the same craft naturally have much in common.

The locations of *suqs* also make sense. Except for crafts like tanning—which *does* smell—most suqs are in the center of the city, or what used to be the center, so that people can get to them easily. And there are certain natural locations for certain trades. Booksellers and stationers, for example, are most often clustered around the important mosques, as in Istanbul, Damascus and Shiraz. And in Marrakesh, the central mosque is actually called the Mosque of the Booksellers because some 400 shops selling books and manuscripts were once grouped around it.

Not all of those shops survive today. Indeed, many of the crafts themselves have vanished. The advent of printing, for example, put an end to the many crafts associated with book production since before the Middle Ages: pen cutters, paper makers, paper marblers (see *Aramco World*, May–June, 1973), calligraphers, ink makers and "sawdusters"—men who sprinkled sawdust on the pages of freshly written manuscripts in order to dry them. Yet the *suqs* I have visited seem every bit as large and busy as they were in, say, 1900, when there were 235 crafts represented in the Damascus *suq*.

The explanation, of course, is the inventiveness and adaptability of the craftsmen of the Middle East. Today, for example, what may once have been the shop of a pen cutter is now the shop of a typewriter repairman. For that reason, *suqs*, despite the growth of factories and large-scale production in the Middle East during the past 50 years, remain the hub of urban life—and are as colorful, exciting and economically important today as they were centuries ago when de Thevenot saw his parade in Aleppo.

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